Leadership Hunterdon

Class of 2017



FIELD OF NERD DREAMS:

A Case and Framework For

Tech Sector Growth

In Hunterdon County









June 2017

"Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time" Thomas Edison

It has been a great privilege to have worked with the Leadership Hunterdon Class of 2017. The Leadership Hunterdon Class has heard many of the challenges and opportunities that face Hunterdon County. Our County and our Business Community need strong leadership to ensure that our future will be successful.

The insights and the recommendations you have made regarding the expansion of the technology industry will have a lasting impact. A strong business community can only serve to strengthen other facets of our County, from the private sector, to education, healthcare, non-profits, civic groups and government to be that much stronger.

I hope that each of you takes this opportunity to get further engaged to advance the economic interests of our County Thank you again for your dedication to Leadership Hunterdon and allowing the process to help shape the future. It is with great pleasure that I officially welcome you to the ranks of our Leadership Hunterdon Alumni.

With best regards,

Christopher J. Phelan

President

Hunterdon County Chamber of Commerce



Dear 2017 Graduates,

It is both an honor and pleasure to write this letter to you having spent ten months together as traveled through Leadership Hunterdon. Each cohort has its unique group personality and contribution to make to the Body of graduate leaders; yours is especially fruitful. So hearty congratulations and thank you.

As a result of the rich program agenda, having met with leaders of Hunterdon County's business, educational, governmental, not-for-profit and financial infrastructure, you now know more about the fabric and operations of Hunterdon County than the majority of its citizens and I urge you to use that information and those contacts purposefully in your current careers and future endeavors.

Your Class, along with the alumni of Leadership Hunterdon, more than likely will form the foundation of careerlong, productive, collegial relationships. Working, as you have so successfully as a group on this year's extensive White Paper, "FIELD OF NERD DREAMS: a Case and Framework for Tech Sector Growth in Hunterdon County," allowed you to discover, face and resolve many of the dynamics faced by leaders as they come together on boards of directors, community issues and with teams and committees. That dynamic requires a crossing over, if you will, from individual goals and perspectives to one that serves the greater result of the issues at hand. You have shown yourselves to be focused, relentless in the face of challenge, willing to argue for, yet listen to, and modify opinions---the stuff of life-long learners and real contributors. I encourage you to continue to appraise your own experience and conclusions as the process slips beyond this demanding year.

Your employers have supported you in this almost year-long endeavor. I assert that their willingness to free you to commit one day each month to your exploration, coupled with time for meetings in the pursuit of the White Paper, was a sound and profitable decision. They have a more knowledgeable and seasoned professional returning to their respective organizations---one who, independent of company policies and procedures, has functioned autonomously and resourcefully toward her/his end-goal. I thank them for continued confidence in the Leadership Hunterdon process. Please share your experience with colleagues, invite feed-back and continue to demonstrate the skills, knowledge and personal growth you have identified as a result of this challenging and comprehensive program.

The crossing over now begins! As Leadership Hunterdon Alumni, it is up to you to pursue a leadership path that brings your unique skills to the table. I encourage you to play BIG, to do what you love and to utilize 'lessons learned' toward any result desired.

Fondly,

Suzanne

Suzanne Lagay Leadership Hunterdon Co-facilitator Member, Board of Chosen Freeholders Hunterdon County

FIELD OF NERD DREAMS:

A CASE AND FRAMEWORK FOR TECH SECTOR GROWTH IN HUNTERDON COUNTY

LEADERSHIP HUNTERDON CLASS OF 2017

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Project Overview

The Leadership Hunterdon Consulting Team (LHCT) reviewed the feasibility of creating a technology hub in Hunterdon County to increase growth within this sector and begin to develop strategies to attract, retain and develop technological resources within the county.

The population in Hunterdon County is aging. Millennials are moving out of the county due to increasing home prices and lack of quality jobs. Schools are closing, and the population is diminishing. Something has to be done to spur economic growth and the LHCT believes there is a lot of opportunity in the technology sector for the following reasons: (1) higher paying jobs, (2) it attracts the younger generation, (3) it has a small physical footprint, and (4) it crosses multiple sectors.

Tech sector growth has an inherent positive impact on economic development by creating a migration of the younger generation, creating new, high-wage jobs and a better way of life for the residents of the county. Nourishing a technology cluster in the county will encourage a younger, financially secure population to work, play, and live in the county. A small but growing tech sector already exists in the county, but has been disjointed and lacks networking and growth opportunities. A concerted, dedicated effort to sustain and grow these existing companies/individuals is necessary, and already ambitiously under way. Additionally, plans for educational programs like computer sciences, health technologies, biomedical sciences, and engineering fields at the local community college, regional and state colleges and at the high school level will support the economic plan to better train workers for the technology market. Lastly, developing incubators and shared work spaces will help develop young talent that is currently here in addition to attracting outside talent.

Hunterdon County has already begun to form a tech cluster. The LHCT concludes that the county is well suited and ready to take this seed and grow it with a long term, multivariable effort to further develop this sector.

Why the Tech Sector?

Hunterdon County is currently in the midst of an epoch of economic decline. While it still enjoys relatively low unemployment rates, a highly educated workforce, and robust pharmaceutical and healthcare industries, the county is shrinking and its population is aging. Large corporate headquarters have shuttered in the face of the Great Recession and industry shifts. Over-reliance on financial buttressing from a concentration of large-scale corporate campuses has left the county vulnerable to the whims and economic proclivities of a concentrated few companies. This monoculture of industry has demonstrated the financial imperative for diversification of our economic development.

In order to counter current losses of business and population, the county must foster job opportunity growth in sectors with long term viability and high wages. Hunterdon's small towns must

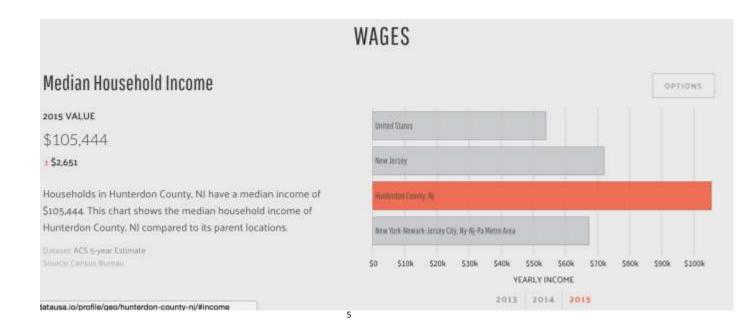
¹ Stillman, Jessica. Why small town America is poised to become the next silicon valley. Inc. com. http://www.inc.com/jessica-stillman/why-small-town-america-is-poised-to-become - the-next-silicon-valley. html. February 5 2017

² Comprehensive Economic Development Summary ("CEDS"), December 2014; pp. 60-63

adapt to and accommodate the shifting work/life requirements and desires of a wired generation. Now is the time to introduce small tech growth at this critical tipping point. Growth in this one sector can have a massively transformative effect on Hunterdon. This is because the technology sector: 1) is host to the best and highest paying jobs in the United States; 2) is highly diversified - applicable across industries; 3) has a small physical footprint; and 4) emphasizes the natural beauty and lifestyle that stands in stark contrast to cramped city living.

Where Does Hunterdon County Stand?

Hunterdon County has historically enjoyed virtually uninterrupted population and economic growth, serving as the home to myriad corporate campuses for the manufacturing, healthcare, and pharmaceutical industries. In 2015, Hunterdon County's median income was twice that of the United States.³ Overall, jobs in occupations with median hourly earnings greater than \$15.46 are expected to grow by 3% by 2020 in Hunterdon County.⁴ Hunterdon is still one of the wealthiest counties in the United States with an uncommonly high percentage of high wage job opportunities:



Yet behind the county's relatively robust statistics is a picture of decline. Between 2010 and 2016, the county's population has decreased 2.1%. Furthermore, the number of adults ages 35-44

³ Data USA. https://datausa.io/profile/geo/hunterdon-county-nj/#economy.

⁴ "Executive Summary of Economic and Demographic Community Profiles for Hunterdon County, NJ and Somerset County, NJ and In-Demand Occupations Analysis; Top 10 Occupations in Hunterdon County, NJ and Somerset County, NJ," Greater Raritan Workforce Development Board, 14 January 2016. http://www.grwib.com/pdf/Compiled%20Report%20Profiles%20and%20Occupations%20%20011516.pdf.

⁵ Data USA: Hunterdon County; https://datausa.io/profile/geo/hunterdon-county-nj/#economy.

⁶ United States Census Bureau. https://www.census.gov/quickfacts/table/BZA210214/34019.

have been consistently declining in Hunterdon County since 2000, while adults 55 years and older have been growing since 1990. Job opportunities retained within the county are projected to be replacement openings in the food preparation, retail, and administrative support arenas, with little "fast-growth job generators."

In 2014, the Hunterdon County Board of Chosen Freeholders published an analysis of the region's current economic conditions, the *Comprehensive Economic Development Strategy* ("CEDS"). The study brought light to infrastructure and transportation inadequacies as well as zoning restrictions in the county that function as compounding impediments to "fostering a more attractive business environment for current and prospective businesses." Incumbent in the recommendations was an emphasis on a need to modify what we can, but primarily to engage in "entrepreneurial gardening" that will effectively utilize existing structures and assets. ¹⁰ The CEDS provided the following snapshot of the county:

	1970 - 2000		2000 - 2015
	55% population growth		Declining population
	Rural migration		Urban migration
	3.14 persons/household	*	2.61 persons/household
-	Educated, high income		Retirees, empty nesters
	1980 median age 32		2014 median age 44
	Corporate campuses		Vacant corporate campuses
	Single family homes	F	Changing housing demands
0	Growing school population		Declining school enrollment

Below is a graphical representation of the CEDS' key research conclusions:

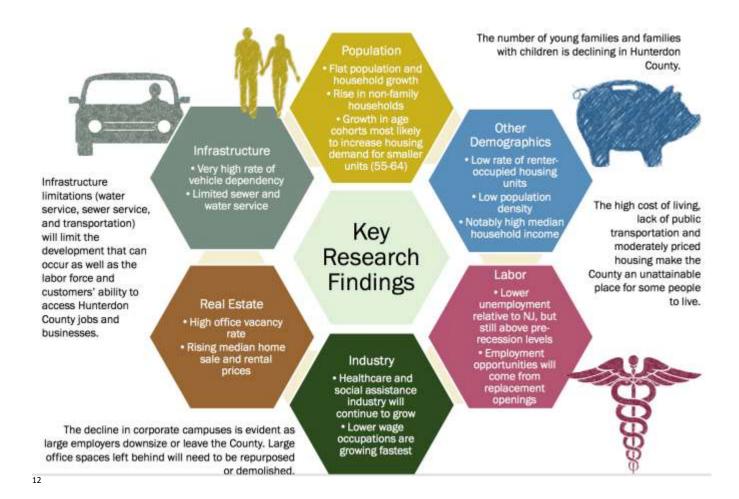
⁷CEDS at p. 60.

⁸ *Id.* at p. 63.

⁹ *Id.* at pp. 30-31.

¹⁰ *Id.*

¹¹ Holt, Matt, Saluk, Marc, et. al. "Hunterdon County Economic Development Initiative," ppt presentation. 18 Nov. 2016.



Who Is Missing? Millennials

Hunterdon's unfavorable statistics are not atypical in the country's current economic climate. Indeed, Hunterdon could serve as a snapshot of the period of flight out of small town USA. In 2011, the majority of America®'s largest cities grew at a faster rate than their surrounding suburbs for the first time in over a century. In 2014, William H. Frey, a demographer at the Brookings Institute, said, "At this point, the prognosis does not look good for much of small town America."

¹² CEDS at p. 19.

¹³ Yen, Hope and Kristen Wyatt, "Nation's big cities boom as young adults shun suburbs," Associated Press. 28 June 2012. https://durangoherald.com/articles/40709-nation-8217-s-big-cities-boom-as-young-adults-shun-suburbs.

¹⁴ Dure, Beau. "Why Millennials Are Avoiding Small Town America," The Daily Dose, 14 October 2014. http://www.ozy.com/fast-forward/why-millennials-are-avoiding-small-town-america/34058

Missing from the American small town are the Millennials - 20-36 year olds who now have surpassed generation Baby Boomer as United States' largest living generation. ¹⁵ These young adults are driving a resurgence of city living. They delay careers, marriage, and having kids, and are spurning homeownership in the suburbs for "shorter-term, no-strings-attached apartment living, public transit and proximity to potential jobs in larger cities." ¹⁶

They are also focusing on higher wage careers, like those in computer sciences. Students earning bachelor's degrees in computer science increased 46 percent between 2008–09 and 2013–14. Likewise, engineering and engineering technologies bachelor's degrees increased 8 percent between 2003–04 and 2008–09, and then increased a further 29 percent between 2008–09 and 2013–14. This is why small technology growth can enable Hunterdon County to attract urban "escapees" desiring to start small businesses. Smart-growth advocate James A. Bacon has expressed concern that small towns aren't (yet) taking advantage of this potential. "Unfortunately, to date, local economic developers have stuck with the industrial-recruitment strategy that bears less and less fruit." Hunterdon County can and should be the early adopter to this sector's growth potential.

What is the tech sector?

The technology sector encompasses a vast array of industries, services, and goods. It "contains businesses revolving around the manufacturing of electronics, creation of software, computers or products and services relating to information technology." Massive global technology companies like Merck (biotech), ExxonMobil (energy tech), and Facebook (social media) occupy this space right beside local boutique information technology firms like eSOZO Computer and Network Services and ZeroSurge, Hunterdon County's local surge protector manufacturing plant, housed in a refurbished chicken coop. Indeed, tech companies are intersectionally woven into every aspect of modern life - from the way we communicate with one another to the way we heal our sick.

The small technology company, a class within the technology sector, is a nimble structure, with generally less than 500 employees²⁰ and commonly referred to as either a "tech startup" or "small tech" business. The small tech industry (in particular non-manufacturing, software-oriented tech) saw a rapid

¹⁵ Frye, Richard. "Millennials overtake Baby Boomers as America's largest generation," Pew Research Center. 25 April 2016. http://www.pewresearch.org/fact-tank/2016/04/25/millennials-overtake-baby-boomers/.

¹⁶ Dure, Beau. "Why Millennials Are Avoiding Small Town America," The Daily Dose, 14 October 2014. http://www.ozy.com/fast-forward/why-millennials-are-avoiding-small-town-america/34058.

¹⁷ "Most Popular Majors," National Center for Education Statistics. https://nces.ed.gov/fastfacts/display.asp?id=37.

¹⁸ Dure, Beau. "Why Millennials Are Avoiding Small Town America," The Daily Dose, 14 October 2014. http://www.ozy.com/fast-forward/why-millennials-are-avoiding-small-town-america/34058.

¹⁹ Investopedia Definition: "Technology Sector",

http://www.investopedia.com/terms/t/technology_sector.asp#ixzz4d7gNwzny; see also Thomson Reuters, http://markets.on.nytimes.com/research/markets/usmarkets/sectors.asp?sector=57.

²⁰ U.S. Small Business Administration, "Summary of Size Standards by Industry Sector", Feb. 26, 2016. https://www.sba.gov/contracting/getting-started-contractor/make-sure-you-meet-sba-size-standards/summary-size-standards-industry-sector.

surge after the release of the personal computer in 1977 and the development of the world wide web by Tim Berners-Lee in 1991.²¹ With low start up costs and low structural requirements, turning an interesting project into a viable business became a reality. Due to physical infrastructure restraints, Hunterdon County's likely ideal tech sector company is a small tech company.

Why Tech Sector Growth?

The Best - and Most - Jobs

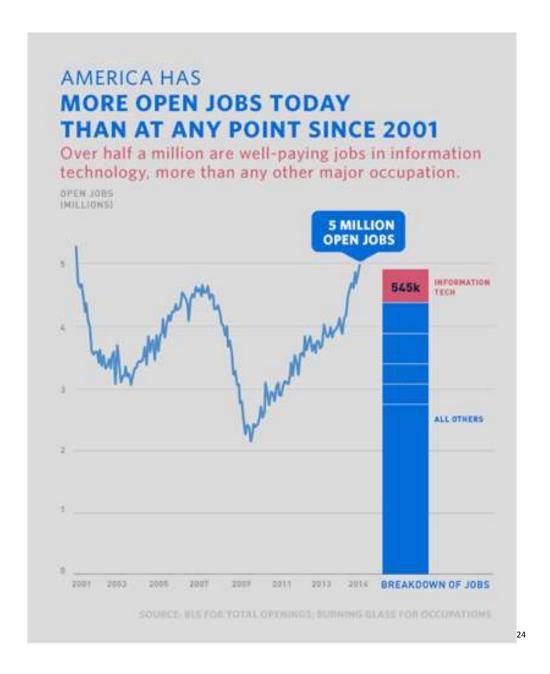
It is because of these features - cross-industry applicability and nimbleness - that the tech sector is so perfectly suited for Hunterdon County. Technology has become completely intertwined into almost every aspect of human culture. Running a business, irrespective of industry, requires technology based solutions. Thus, a massive proliferation of technology-related jobs have flooded the market.²² "These days, almost every company is in some way a tech company, requiring workers who are able to create and maintain a firm's technological infrastructure," said Andrew Chamberlain, chief economist at Glassdoor, the nation's second largest online job site that features employee ratings on 640,000 companies.²³

The White House TechHire Initiative has the below statistics on job availability in the U.S.:

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²¹ Technology Timeline, World History Project, https://worldhistoryproject.org/1977/4/16/apple-ii-is-released; "A History of the Computer: Network", PBS, https://www.pbs.org/nerds/timeline/network.html; Schneider, Laura. "A history of the technology industry" The Balance. 16 October 2016. https://www.thebalance.com/a-history-of-the-technology-industry-2071506.

Della Cava, Marco. "The best of the best U.S. jobs are tech, tech and tech, again" USA Today 24 Jan.
 2017. http://www.usatoday.com/story/tech/news/2017/01/23/best-best-us-jobs-tech-tech-tech/96723738/.
 Id



The influx of these jobs also heralds growth in high wage positions. Four of the top five jobs in a Glassdoor survey were for tech workers, including DevOps engineer (#2; 2,725 openings; average salary: \$110,000), data engineer (#3; 2,599 openings; average salary: \$106,000) and analytics manager (#5; 1,958 openings; average salary: \$112,000). The long-term viability of these positions are strong, and an increase of jobs in this arena would positively impact the long-term financial position of Hunterdon County.

Hunterdon County is Full of Talent and Beauty

²⁴ TechHire Initiative. https://www.whitehouse.gov/issues/technology/techhire.

²⁵ Della Cava, Marco. "The best of the best U.S. jobs are tech, tech and tech, again" USA Today 24 Jan. 2017. http://www.usatoday.com/story/tech/news/2017/01/23/best-best-us-jobs-tech-tech-tech/96723738/.

After visiting a number of small U.S. towns, futurist and tech evangelist Robert Scoble wrote that small communities "'are primed to see rapid growth over the next decade.'"²⁶ This is because tech startups and small tech businesses are no longer limited by location, and can now flock to settings that provide a strong network of like-minded talent, business resources, and technological infrastructure support.²⁷ Non-metro tech startups are gaining traction and attention, and the once-held belief that tech jobs only exist in major cities is being rejected.²⁸

This rejection relies upon relatively nascent state and federal initiatives explicitly targeting technology sector growth in small towns. ²⁹ For example, on March 10, 2015, President Obama announced his TechHire initiative, "a new campaign to expand local tech sectors by building tech talent pipelines in communities across the country." ³⁰ Similarly, Choose New Jersey, an economic development organization, is working to emphasize New Jersey's place as a technology cluster. "Long an epicenter for discovery and invention, today the State is home to new Information and Communications Technology (ICT) leaders, Financial Technology (FinTech) giants and thousands of entrepreneurial start-ups and growing technology companies. They know they can rely on New Jersey's highly-educated workforce and legacy of innovation to develop the technologies of tomorrow." ³¹

Tech talent is a critical driver of local economic development. "Companies report that one of the main factors in deciding where to locate is the availability of skilled talent. Moreover, research from economist Enrico Moretti shows that for each job in the average high-tech firm, five new jobs are indirectly created in local economies." ³²

Hunterdon county's technologists see the natural fit for economic growth in the small tech sector in the county. Eric Herbel, founder of Integrated Clinical Systems, a Hunterdon-based clinical research computer applications development company, expressed certainty that Hunterdon County houses a deep pool of technology talent that has not yet been developed into a community.³³ This has been confirmed through an initiative to bring together Hunterdon's local tech talent, HackHunterdon. HackHunterdon is a partnership among Hunterdon County Economic Development, Hunterdon County Chamber of Commerce, and Flemington Community Partnership to nourish small tech growth in the

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²⁶ Duff, Jason. "Millennial Innovators Are About to Leave Big Cities/," Fortune 21 Dec. 2016. http://fortune.com/2016/12/21/millennials-cities/.

²⁷ Williams, Alice. "8 Reasons to Open a Tech Startup in Rural America." *TG Daily*. 11 November 2016. http://www.tgdaily.com/enterprise/startups/8-reasons-to-open-a-tech-startup-in-rural-america.

²⁸ Williams, Alice. "Rural tech startups see success across the US." TechCrunch. 1 August 2016. https://techcrunch.com/2016/08/01/rural-tech-startups-see-success-across-us/.

²⁹ Williams, Alice. "Rural tech startups see success across the US." TechCrunch. 1 August 2016. https://techcrunch.com/2016/08/01/rural-tech-startups-see-success-across-us/.

³⁰ TechHire Initiative press release. https://www.whitehouse.gov/issues/technology/techhire.

³¹ "A Thriving Technology Cluster," Choose New Jersey, Inc., http://www.choosenj.com/key-industries/technology.

³² TechHire Initiative Fact Sheet. https://www.whitehouse.gov/the-press-office/2016/06/27/fact-sheet-expanding-tech-economies-communities-across-country.

³³ Conversation with Eric Herbel, Leadership Hunterdon Class of 2017, 18 November 2016.

county. ³⁴ Working this year to identify and bring together Hunterdon's local talent, they have been hosting monthly meetups for technologists. ³⁵ Since the meetup's inception in October 2016, over 150 locals have joined the group, and meetup attendance is steadily building. ³⁶ The effort has been met with enthusiasm by the local tech community. Sam Napolitano, SVP of Engineering at New York-based telecommunications company Viacom, said, "As a longtime resident I am . . . inspired by the opportunity for economic growth that [development of the technology industry in the county] offers the community."³⁷

Similarly, a decrease in job stability and pension plan programs have driven the development of the "gig economy", contract-based freelancing in lieu of a permanent, singular job at one company. From 2005 to 2015, the percentage of American workers engaged in contract work jumped from 10.7 percent to 15.8 percent - from 15 million to 23.6 million jobs. ³⁸ By 2020, an estimated 43 percent of the U.S. workforce will be made up of workers who freelance. ³⁹ Technology jobs have not only buttressed this paradigm shift - they are a singular driver of it.

As discussed infra, research demonstrates that one of the essential factors in the successes of various technology hubs in the United States is culture. Hunterdon County can easily meet the baseline needs of a small tech business, and further offers myriad seemingly intangible assets, like a change of scenery and pace, lower cost of living, less traffic, access to untapped talent, a close-knit community, valuable networking, and the opportunity to make a larger impact.⁴⁰

The proximity to major metropolitan areas such as Philadelphia and New York, in combination with a landscape rich with agricultural and preserved green spaces, offers a work/life unparalleled in the United States. Cost of living is also relatively low, particularly when compared to major metropolitan cities. For example, the overall cost of living index for Hunterdon County is 134, compared to 180 for New York:

³⁴ HackHunterdon About. http://www.hackhunterdon.com.

³⁵ www.meetup.com/hackhunterdon.

³⁶ *Id*.

³⁷ "Prizes, Speaker Announced for 'Hack Hunterdon,'" TapInto, 30 March 2017. https://www.tapinto.net/towns/flemington-slash-raritan/articles/prizes-speaker-announced-for-hack-huntedon.

³⁸ Keller, Jared. "Are Technology Companies Really Driving the Gig Economy?" *Pacific Standard Magazine*. 5 October 2016. https://psmag.com/are-tech-companies-really-driving-the-gig-economy-3a5d7cd61f03

Strauss, Karsten. "What Is Driving The 'Gig' Economy?", Forbes, 21 February 2017.
 https://www.forbes.com/sites/karstenstrauss/2017/02/21/what-is-driving-the-gig-economy/#139d7911653c
 Williams, Alice. "8 Reasons to Open a Tech Startup in Rural America." TG Daily. 11 November 2016.
 http://www.tgdaily.com/enterprise/startups/8-reasons-to-open-a-tech-startup-in-rural-america.

COST OF LIVING	Hunterdon, Nev	COST OF LIVING	New York, New York
Overall 0	134	Overall 0	180
Grocery 0	105.6	Grocery 0	125
Health 0	105	Health 0	110
Housing 0	183	Housing 0	313
Utilities 0	135	Utilities 0	128
Transportation 0	105	Transportation 0	107
Miscellaneous 0	114	Miscellaneous 0	120

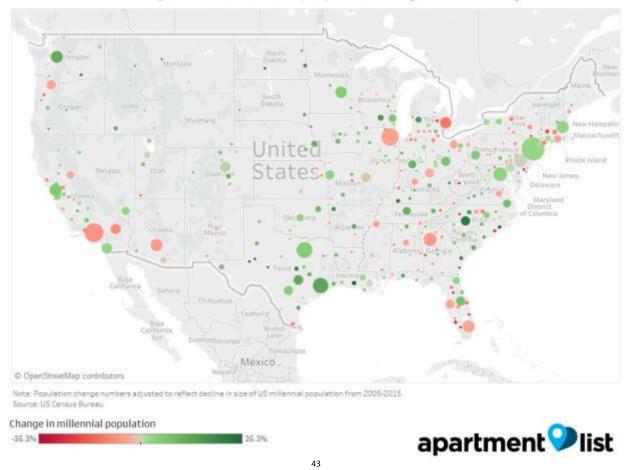
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Despite the past flight away from small towns, research indicates that a small town resurgence is likely. Most recent data suggests that growth in cities has flattened, and the U.S. is just now experiencing an exodus by Millennials out of cities and into smaller, more affordable towns.⁴² The U.S. Census Bureau concurs:

⁴¹ Sperlings Best Places. http://www.bestplaces.net/cost_of_living/city/new_york/new_york.

⁴² Dougherty, Conor. "Peak Millennial? Cities Can't Assume a Continued Boost From the Young," *New York Times*. 23 January 2017. https://www.nytimes.com/2017/01/23/upshot/peak-millennial-cities-cant-assume-a-continued-boost-from-the-young.html?_r=0.

Change in millennial population (2005-2015)



Some possible reasons include affordability, access to jobs, space, and access to educational opportunities.⁴⁴ Which small towns Millennials choose will depend on what the towns have to offer.

Because We Must

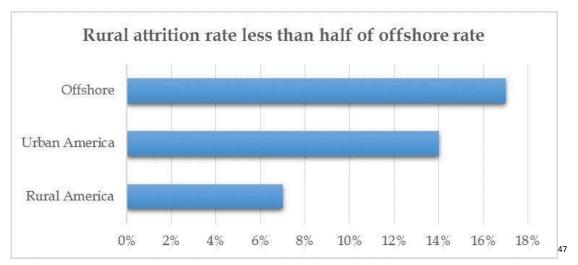
Emerging from this research is a very strong argument for tech growth in Hunterdon County. In the face of a massive loss of American jobs due to outsourcing, a movement to bring tech companies - both big and small - to small town America has become a nation-wide imperative. It keeps jobs onshore,

⁴³ Sisson, Patrick. "New report shows millennials are leaving coastal cities, choosing central ones," *Curbed;* 16 November 2016. http://www.curbed.com/2016/11/15/13636814/rental-apartment-moving-millennial-report.

⁴⁴ Bandler, Aaron. "Millennials Are Fleeing Big Cities. Here Are 7 Reasons Why." *Daily Wire.* 19 May 2016. http://www.dailywire.com/news/5870/millennials-are-fleeing-big-cities-here-are-7-aaron-bandler#.

revitalizes communities in need of growth, and - significantly - it has the backing and encouragement federally.⁴⁵

According to Gartner Inc. Research Analyst Helen Huntley: "A growing number of clients are seeking onshore IT delivery in low-cost rural settings factoring in both costs (labor rates) and qualitative factors (customer experience), especially for IT work that involves significant business collaboration. This has proven to be effective in closing the offshore 'value gap'."⁴⁶ Indeed, employee attrition rate in rural areas of the U.S. is less than half the rate typically seen in offshore locations:



This equals cost savings to companies, enabling avoidance of costs associated with high turnover." There are pockets of great IT talent here in the U.S. that have chosen in live in the (non-metro) areas of our country," said Monty Hamilton, chief executive of Rural Sourcing, Inc. since 2009.⁴⁸ RSI is "aggressively hiring," and aims to have 10 to 12 development centers in small communities in the U.S.⁴⁹

The tech sector is the space with the largest growth potential for our county. Its encouragement and development is not only desirable; at this juncture it is critical to economic development of Hunterdon County.

Evaluating Best Practices_

⁴⁹ Id.

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⁴⁵ Vilsack, Tom, U.S. Secretary of Agriculture & Perez, Thomas, U.S. Secretary of Labor. "Rural Means Business: Bringing Tech Jobs to Rural America." *Whitehouse.gov What's Happening*. 24 May 2016. https://www.whitehouse.gov/blog/2016/05/24/rural-means-business-bringing-tech-jobs-rural-america. ⁴⁶ *Id*.

⁴⁷ TechHire Initiative. https://www.whitehouse.gov/issues/technology/techhire.

⁴⁸ Brin, Dana Weisenberg. "Need Technology Experts? Try Rural America." CNBC.com. 20 February 2013. http://www.cnbc.com/id/100470457.

The major tech hubs have become overly saturated, and tech companies are now looking to establish elsewhere. The LHCT identified geographical areas that are experiencing growth in the technology sector and considered the communities of Bozeman, Montana; Gainesville, Florida; Pittsburgh, Pennsylvania; Salt Lake City, Utah; Atlanta, Georgia; San Diego, California - as well as other smaller communities – to analyze areas that are attracting, and keeping, new technology companies.

According to industry insiders, "Small Town America is Poised to Become the Next Silicon Valley." Tech futurist Robert Scoble predicts that Silicon Valley's unchallenged dominance in tech innovation may be coming to a close and this may be good news for communities like Hunterdon. In a recent article written for Forbes, Joel Kotchin, Professor of Urban Studies at Chapman University in California and executive director of the Houston based Center for Opportunity Urbanism, notes that most urban centers have not done particularly well in technology over the past decade. According to the article, the Silicon Valley model is on the decline. No longer limited by location, tech startups and small tech businesses are looking for alternatives to the "Silicon Model" and they're casting their eyes to small town America. ⁵¹

In an analysis of job creation trends in the nation's 52 largest metropolitan areas from 2001 to 2013, The Praxis Strategy Group looked at employment trends normally associated with technology, (software, engineering, computer programming and STEM occupations) and discovered that cities in the southern half of the country, cities with generally friendly business climates, have generated tech jobs at the fastest pace in the last 12 years. In his article "The Surprising Cities Creating the most Tech Jobs," Kotchin named Salt Lake City, Jacksonville, Kansas City and Denver as places to watch; "Further out expect other, often smaller communities to emerge as tech hot spots. . . of the 10 fastest growing tech centers in America, seven have populations around or under 150,000. This suggests that, contrary to conventional wisdom, tech employment is likely not to grow fastest in our biggest and most expensive urban cores, but to spread out across an ever-widening geography."

Where Will We Thrive? - What Tech Companies Look For

As tech companies begin to look for new opportunities, and ask the question, "Where will we thrive?", the challenge for communities is deciding whether or not they are willing, and able, to accommodate the myriad needs of the technology sector. Julia Georgules, Vice President, Associate Director of Office Research for Area Development Online, addressed this when she noted the key to urban vs. suburban – or balancing millennial interests and boomer practicality – is deciding which location and workplace strategy will accommodate growth. ⁵⁴ Tech companies also need to consider that

⁵⁰ Georgules, Julia. "Urban vs. Suburban: Which Location Will Allow Your Company to Grow?", Area Development. Q4 2014. http://www.areadevelopment.com/corporate-HQ-office/Q4-2014/suburban-urban-locations-for-high-tech-growth-2687001.shtml

⁵¹ Kotchin, Joel. "The surprising cities creating the most tech jobs", Forbes.com. https://www.forbes.com/sites/joelkotkin/2013/11/20/the-surprising-cities-creating-the-most-tech-jobs/#1cfc5d3f4f66

⁵² Kotchin, Joel. "The valley and the upstarts: the cities creating the most tech jobs." Forbes.com. April14,2015. https://www.forbes.com/sites/joelkotchin/2015/#347b7c5b58ef

⁵³ Georgules, Julia. *Urban vs. suburban: which location will allow your company to grow.* Economic Development. Org. http://www.economicdevelopment.org/2014/11/urban-vs-suburban-which-location-will-allow-your-company-to-grow. November 13,2014

⁵⁴ Georgules, Julia. "Urban vs. Suburban: Which Location Will Allow Your Company to Grow?", Area Development. Q4 2014. http://www.areadevelopment.com/corporate-HQ-office/Q4-2014/suburban-urban-locations-for-high-

the gap between workers' ages is at an historic high. Baby boomers will continue to occupy top positions within most tech firms for the next five to 10 years while the current 25% of the workforce under 30 years old is projected to rise to 50% by 2020. The challenge comes in providing something for everyone. Susan Davenport, interim president and CEO of the Gainesville (FL) Chamber of Commerce summed it up when she noted: "The communities that can best facilitate new-edge digital technologies are areas that offer unique opportunities that haven't been seen in other areas." 55

In 2014, Hunterdon County published the CEDS, creating a roadmap for the county's future that offers practical guidance on how the county can proceed with confidence further into the twenty-first century. The county's recent economic decline, while a concern, presents opportunities for tech innovators, providing attractive opportunities for growth and more favorable real estate conditions. Early stage tech firms priced out of some of the established hubs, may find Hunterdon attractive as they seek more affordable secondary markets. Couple room for growth and favorable real estate conditions with the county's shared vision for the future, a commitment to small business success, it's unique attributes and amenities and Hunterdon represents the alternative community tech innovators are seeking. Indeed, think of technology and innovation and soon it may not be the name "Silicon Valley" that springs to mind, but rather "Gallatin Valley", "Silicon Prairie", "Transaction Alley", and places like Bozeman, Montana, Gainesville Florida, Madison County, Alabama, exurbs such as Virginia's Loudon County and Orleans Parish, Louisiana – and perhaps the "Hunterdon Highlands". This shift to smaller communities becoming tech hubs seems to bode well for Hunterdon County as we consider towns that are experiencing success.

Bozeman, Montana

Located in the heart of the mountains, Bozeman is a small town in southwestern Montana that has begun to attract the likes of such tech companies as Schedulicity, the social media e-learning platform Wisetail, CRM software provider RightNow Technologies and TechRanch, an advisory organization that has helped over 60 tech startups get off the ground. It also boasts a network of angels from all over the country. With a population of 38,000, Bozeman is known for its fantastic schools and wide range of recreational opportunities; work/life balance is manifest in Bozeman. ⁵⁶ People tend to come to Bozeman looking for a simpler way of life. Ask employees why they chose Bozeman as a location for their company and what they mention are: the quiet life, the people, and the attitude.

Gainesville, Florida

Home to the University of Florida (UF), Gainesville Florida is another example of a town experiencing tremendous technology growth. Struggling with failing public schools, poverty and decades of strained relations between the town and the University that resulted in slow growth; community and campus leaders with a shared vision are now working together to grow Gainesville around an innovation economy. With close proximity to Alachua and High Springs, towns known for their historic small town charm and natural beauty, as well as San Felasco Hammock State Park, the Gainesville area is known for

tech-growth-2687001.shtml

portrait.FT.http://floridatrend.com/article/2517/Gainesville.February1,2011

town.FastCompany.fastcompany.com/40419011/.May09,2017

⁵⁵ FloridaTrend. *Gainesville community*

⁵⁶ Bullinger, Jake. How tiny Bozeman, Montana, became a booming tech

its diving, kayaking, mountain biking and horse trails. In 1995, UF built its Sid Martin Biotech Incubator in Alachua. The incubator has admitted 40 small biotech spinoffs, 30 of whom succeeded, including: RTI Biologics, AxoGen and Nanotherapeutics.

Other Biotech companies in the Gainesville/Alachua area include Applied Genetic Technologies, Integrated Plant Genetics, and spin-offs Grooveshark and Youtorial. The Florida Innovation Hub at UF, a 45,000 square foot facility built with funds from both the federal government and the University, provides spinoffs with office space, labs, conference rooms and other resources as well as offering space to intellectual property law firms and venture-capital investment firms. The Hub is part of a master plan known as Innovation Square – "a 24/7 live/work/play urban research park environment" and since the building opened startup companies have created 800+ jobs.⁵⁷

San Diego, California

Another community experiencing successful technology growth is San Diego, California. On its website's WELCOME page, **StartUp San Diego** lists itself as: a community that celebrates and welcomes entrepreneurship and innovation; is large enough to offer many resources, but small enough to allow startups access to and the opportunity to become familiar with these resources; has world-class universities, natural resources and the general atmosphere to attract and retain talent; and is conveniently located near other startup communities to foster communication and collaboration.

Trevor Langan, Research Associate for City Solutions and Applied Research at the National League of Cities, takes the premise that community and culture are what's important for attracting millennials one step further. In his article, "10 Innovative Ways to Attract Millennials to your City," Langan notes that it is *not* job opportunity that drives where millennials chose to live. In fact, only 43 percent of college students said job opportunity was their number one driver when they chose where to live after graduation. ⁵⁸ For the younger workforce, quality of life, a sense of community and work/life balance is important. With 50% of the Tech workforce expected to be comprised of millennials by 2020, companies will want to consider what it is that attracts this all important population to an area.

Hunterdon County, New Jersey - How Does It Compare?

From these pioneer tech hubs comes a rubric for how to attract and retain technologists and tech companies: fantastic schools, advisory panels and incubators that provide startups with substantive mentorship and assistance, access to tech talent, natural beauty, and community and culture (walkable towns, good housing stock, young family networks).

Hunterdon County, host to unparalleled beauty, is poised to grow. It's CEDS plan outlines a commitment to bringing the county forward, outlining the support of local government as well as the business community. As discussed infra, Hunterdon County enjoys excellent education opportunities. The question now is how Hunterdon County can develop the other components for tech sector growth.

The lack of affordable housing in the county, a stumbling block to attracting a younger workforce, is beginning to see a shift, as the creation of affordable housing in Hunterdon moves ahead.

⁵⁷http://news.ufl.edu/archive/2010/11/uf-officials-roll-out-plans-for-innovation-square-on-sw-second-avenue.html

⁵⁸ https://citiesspeak.org/2016/02/26/10-innovative-ways-to-attract-millennials-to-your-city/

For 16 years, the so-called "gap period" from 1999 to 2015, the state failed to issue regulation on the need for affordable housing. On January 18th of 2017 the New Jersey State Supreme Court ruled that towns around the state must meet those low and moderate housing needs that arose during the gap. ⁵⁹ A planned affordable housing complex in Clinton Township known as the Beaver Brook Village is gradually moving forward. Located within walking distance to the Annandale train station, the complex will provide the accessibility to transportation that millennials find so important; with a "tot lot" play area, access to superior schools – both public and private, a common green and a location near the historic town of Clinton, the complex will provide access to the amenities important to community life. If the project moves forward, the housing units at Beaver Brook Village will join 35 affordable housing units at The Mews at Annandale and additional rental units at the Windy Acres site. Low and moderate retail units located at Cushetunk Manor and The Shoppes at the Farm in Readington will also provide affordable housing in the area, and low and moderate income condos are available for resale in Lake Cushetunk. New multiple unit apartments are currently under construction in High Bridge and Clinton, while at the same time, and further south in the county, construction continues on 84 rental units in the Flemington area.

Known as the Willows at Flemington Junction, these rental apartments will cater to low and moderate income households. Flemington developers are also in the process of planning out high end condos and rental units in and around the borough. Altogether, these housing opportunities are beginning to address the need for more affordable housing for both millennials and the downsizing seniors who comprise the bulk of the tech workforce. With 40% of commercial space available, tech companies and potential employers are provided with a wide range of real estate that can meet any need. New coworking and shared office spaces have popped up in Flemington and Clinton as property owners begin to convert their vacant space to more viable options.

While Hunterdon's primary mode of transportation is still the automobile, (State Routes 12, 29, 31, 165, 173 and 179 link the communities within the county, while US Routes 22, 202, and Interstate Highway 78 provide more direct links to the metro areas of Newark, New York City and Allentown, Pennsylvania), the county recognizes the need to grow its transportation network. In response to the requests of the community, Hunterdon recently expanded service for The LINK. This public access bus service provides demand response service across the county, scheduled service within the county Seat of Flemington, and recently expanded it's service route to include stops at Raritan Valley Community College, Branchburg Shop Rite and Bridgewater Commons Mall. Rail service is provided to the northern part of the county from Newark Penn Station as NJ Transit's Raritan Valley Line brings residents to the communities of High Bridge, Annandale, Lebanon and Whitehouse Station. In addition to the LINK, Transbridge Bus provides daily service to New York City and cities in Western Pennsylvania.

While housing and transportation are important elements in attracting employers, they are not necessarily the deciding factors in choosing a location to plant a new business. Adding to Hunterdon's appeal is the county's outstanding quality of life. According to Monmouth University's Garden State Quality of Life Index, residents of Hunterdon enjoy a quality of life ranked as second in the State. Community members reside in a bucolic location amidst the rolling hills and farmlands of the Delaware Valley, one that provides them with easy access to both Philadelphia and New York City. With a population of 124,676 and a median household income of \$100,980, Hunterdon ranks as one of the wealthiest counties in New Jersey, has been named the healthiest county in the State for the past 7

⁵⁹ Rizzo, Salvador. NJ supreme court: towns must have affordable housing. NorthJersey.com.www.northjersey.com/story/news/new-jersey/2017/01/18/nj-supreme-court-ramps-up-towns-afforable-housing-obligation

years, as well as being ranked as having the second lowest level of child poverty of any county in the United States. ⁶⁰ The county's identity as one of the healthiest is supported by a strong Community Hospital and Healthcare Network; two Health and Wellness Centers are part of the healthcare network, and residents have access to dozens of fitness centers and gyms including HealthQuest Fitness Club and the Hunterdon County YMCA as well as the new Planet Fitness in Clinton and the existing Planet Fitness in Flemington. Twenty-five parks with over 8,000 acres of parkland, a public golf course, extensive biking trails and easy access to the Delaware River in addition to two reservoirs help support a "healthy Hunterdon" lifestyle.

Over 38% of Hunterdon's current workforce holds a bachelor's degree, or higher – providing the access to talent that companies looking to relocate mention as important. Hunterdon benefits from being located an hour's drive from Princeton, Lehigh and Rider Universities and Rutgers, The College of New Jersey and Lafayette Colleges. This provides not only access to a highly educated workforce, but also to University based technologies ready to be commercialized.

From a cultural standpoint, Hunterdon is home to the charming and historic towns of Clinton, Frenchtown, Lambertville and Stockton, providing residents with walkable towns that are known for their great dining and unique shopping. Recently Hunterdon has seen a growth in local wineries and breweries, farm to table eateries and venues for local musical talent.

Hunterdon is also home to Diamond Nation which includes Jack Cust Baseball Academy and the Jennie Finch Softball Academy. Hunterdon's rich history is highlighted in 20 museums scattered across the county and museums range from the Hunterdon Art Museum in Clinton, to the historic Flemington Courthouse, to the Black River Railroad museum in Ringoes. Culture, community and opportunities for a healthy lifestyle abound in Hunterdon County.

Hunterdon County is just the sort of community where industry leaders can live, work and play. The county delivers an "appealing reality", is "lively and comprehensive" and "puts values on display"; catchwords and phrases millennials use when describing what they look for in a community. Over the last decade Greater Philadelphia attracted more millennials than San Francisco, twice as many as Chicago and maintained a larger 18 – 34 year old population than Boston. However, recent statistics show that millennials are moving – and they're moving to the suburbs. Dowell Myers, professor of demography and urban planning at the University of Southern California believes American cities have reached "peak millennial." As the population moves, Hunterdon County, located at the crossroads of Philadelphia and New York City, can provide just the community this population, and the tech employers they tend to work for are seeking.

Thus, Hunterdon County appears to possess many of the attributes businesses and tech-savvy entrepreneurs desire. It's certainly "lively and comprehensive," "delivers an appealing reality," and clearly "puts values on display." Hunterdon County residents benefit from a high quality of life, access to superior schools, a highly educated workforce, high median incomes and nationally recognized healthcare. What it lacks is the dedicated funds and infrastructure support to incentivize a small tech business owner to migrate here. Can Hunterdon County provide the unique opportunities and

⁶⁰ United States Census Bureau. Small area income and poverty estimatestable 1:2011. www.census.gov/quickfacts/table/PSTO45215/34019

⁶¹ http://jllcampaigns.comjlltechspec/philadelphia .Millennials find a home in Philadelphia

⁶³ Johnson, David. The 25 suburbs where millennials are moving. Time. http://time.com/4748763/suburbs-millennials-moving-cities/May 3,2017

accommodate the growth that tech companies and their workforce will require? Yes. But it will require a financial and structural commitment from economic development authorities to invest in its growth.

Assessment of Hunterdon County's Infrastructure for Technology-based businesses

Having a supporting public network infrastructure in place for attracting technology-based businesses is very important because the basic, underlying framework and facilities for serving a business must be well represented before a technically sophisticated business will consider any location. We consider communication and broadband internet access the starting points for having the proper infrastructure in place. Educational systems and transportation are also important infrastructure elements and covered in this report elsewhere.

Two major companies providing Hunterdon County's network infrastructure Centurylink and Comcast Cable. Jersey Central Power & Light is the majority electric supplier to the county.

Jersey Central Power & Light

Jersey Central Power & Light (JCP&L), a FirstEnergy company, provides electric service to businesses and residences throughout Flemington, Clinton, High Bridge, Lambertville, Frenchtown, Milford, Pittstown, Neshanic Station, Three Bridges, Whitehouse Station and Readington. In Hunterdon County, consumers and businesses have a choice of the electric company that generates the power they buy. Businesses will pay for electric generation, transmission and distribution services. As of May, 2017, there were 84 licensed electric generation and transmission providers in Hunterdon County to choose from; however distribution of all electricity is through JCP&L's wires, transformers and substations directly to the business location within JCP&L's service territory.

Businesses pay for more than just the amount of kilowatt-hours (kWh) they consume. Most businesses also pay for demand. While demand is also measured in kilowatts (kW) each business is assigned charges based on the cost of the power supplies needed to satisfy their maximum demand (i.e., peak usage). Businesses will need to consider their electric rate class, usage type, summer vs. winter usage, and time-of-day usage blocks to determine their total electric costs per year.

It should be noted that New Jersey has had a Clean Energy program since 2001 that focuses on providing financial incentives for renewable energy projects, such as solar energy, and bio power projects. Please consult with JCP&L regarding the current NJ Board of Utilities' (BPU) financing programs for the installation of solar photovoltaic systems that product clean, renewable electricity for businesses.

New Jersey's BPU provides a free benchmarking service to businesses to assess the energy performance of a business' facilities. This program scores a business' energy usage and provides valuable information on implementing energy-efficient technologies; include available financial incentives to lower the business' project costs.

CenturyLink

Hunterdon County is served by a global Tier 1 service provider in CenturyLink. CenturyLink is the 3rd largest telecommunications company in the USA, an S&P 500 company, and on Fortune 500's list of

America's largest corporations. CenturyLink Business provides private and public networking and managed services for over 100,000 business customers, including 98% of the Fortune 500 companies. They are a global leader in data and voice networks, cloud infrastructure and hosted IT solutions for business customers. They deliver 20% of the world's internet traffic and support some of the largest business and consumer networks, reducing latency from the desktop to the web application and inherently improving performance. CenturyLink is a global carrier with a strong local Hunterdon County presence.

CenturyLink's service territory covers 90% of Hunterdon County and it is the major carrier in the county's largest cities of Flemington and Clinton. They will not only build out their voice and data network from their Clinton and Flemington hubs to a new company's location according to the company's bandwidth specifications, but they will also provide a new company with the services they need to run their business effectively and efficiently. CenturyLink can provide the digital broadband infrastructure and internet access speed critical to a tech company in Mega-byte and Giga-byte increments.

Their broad portfolio of their Managed Hosting Services supports a business' operating system, application infrastructure, cloud services, monitoring tools, internet security, service management, server management and hardware storage.

Centurylink also provides Megabit broadband access to the homes of Hunterdon County and provides competitive rates on a per household basis combined with phone services.

Comcast Business/Comcast Enterprise

Comcast Business is a subsidiary of Comcast, an American global telecommunications conglomerate that is the largest broadcasting and cable television company in the world. Comcast is also the largest home internet service provider and 3rd largest home telephone service provider in the United States. Comcast serves approximately 40% of the U.S. market with cable internet access.

Comcast Business supports small, medium and enterprise-sized businesses with voice and dedicated internet services. They provide a reliable, high-performance internet services for companies that run bandwidth-intensive high-volume applications, such as technology companies. They provide a dedicated connection between a company's Local Area Network (LAN) and the public internet, transmitting data with low-latency across a Wide Area Network. They can easily scale network capacity from 10 Mbps to 10 Gbps Ethernet with maximum network availability through redundant networks.

Centurylink also provides Megabit broadband access to the homes of Hunterdon County and provides competitive rates on a per household basis combined with phone and cable television services.

Incentives for the 21st Century

There are a variety of incentives for small businesses and tech companies both nationally and locally, but are incentives the main driver of economic development? In our research and interviews, it appears as if culture and community are of the most important attributes when it comes to incentivizing companies, startups, corporations. etc. to congregate in any particular region. According to the Endeavor Insight Report, tax incentives were mentioned as important by 5% of those surveyed and business friendly policies were mentioned as important by 2% surveyed. Talented workers and quality of life ranked among the highest.⁶⁴

"The advantages of investing locally are self-reinforcing." The growth of the tech industry in Silicon Valley evolved over time. Initially Silicon Valley was best known for technology because the industries in which Venture Capitalist (VC) invested in were concentrated there. Thus, companies could find the technical employees, management and support necessary to effectively and efficiently produce their products. Investors were better able to learn about and monitor nearby deals and co-investment opportunities permeated through the valley. When trying to mimic this expansion of technology outside of the valley to surrounding cities and counties through the use of tax incentives and abatements, investors were often faced with failure. Thereby making evident that "policy makers may not have the tools to offset the natural tendency of the VC industry..." ⁶⁵

On the other hand, because taxes, cost of living, and the costs associated with starting and operating a business in Silicon Valley and other metropolitan areas are steep, businesses are looking for opportunities in more suburban environments. Businesses are looking to Silicon Prairies or tech hubs that offer high salaries and low costs of living. Although Hunterdon County may have a high cost of living compared to its peers, it is significantly lower than that of New York City. "The median list price per square foot in Hunterdon County is \$173, which is [significantly] lower than the New York Metro average of \$248. The median price of homes currently listed in Hunterdon County is \$390,000. The median rent price in Hunterdon County is \$2,000, which is lower than the New York Metro median of \$2,700."⁶⁶

Hunterdon County also has a highly educated workforce. "Among the counties [in New Jersey], Hunterdon County earns the highest median household income, i.e. \$105,880. Somerset comes in second with \$98,571 and Morris third with \$97,979. All three of the highest earning counties in New Jersey usually rank among the highest in the country." ⁶⁷

This Silicon Prairie movement is already in full swing out west.

"High prices on the West Coast are making it easier for the fresh crop of computer-science graduates and other techies to choose heartland hubs that are growing, in part, because putting down roots there doesn't require a small fortune. The influx of tech money has already jacked

http://www.nj.com/news/index.ssf/2013/12/nj_has_second_highest_median_household_income_according_to_c_ensus.html

⁶⁴ Florida,Richard.*What cities really need to attract entrepreneurs*.Atlantic. https://www.citylab.com/life/2014/02/what-cities-really-need-attract-entrepreneurs-according-entrepreneurs/8349/. February 11, 2014

⁶⁵ Why venture capitalist deals stay in Silicon Valley - https://www.entrepreneur.com/article/252225 (Shane, 2015)

⁶⁶ Zillow, Hunterdon County, NJ Home Values. https://www.zillow.com/hunterdon-county-nj/home-values/

⁶⁷ NI Census December 2013

up the cost of living in Seattle and Northern California, but while Silicon Valley remains the undisputed leader, startups are spreading dollars and a coastal ethos to unlikely destinations such as Provo, Utah, Chattanooga, Tennessee, and the Midwest's 'Silicon Prairie.'" (See chart below):

Location	Median Home Price	Average Tech Salary	Average Overall Salary
San Jose, California "Silicon Valley"	\$980,000.00	\$123,910.00	\$75,770.00
Reno, Nevada	\$283,200.00	\$70,730.00	\$43,080.00
Boise, Idaho	\$190,100.00	\$66,450.00	\$41,550.00
Salt Lake City/Provo Utah "Silicon Slopes"	\$262,000.00	\$74,520.00	\$46,730.00
Lincoln Nebraska "Silicon Prairie"	\$158,700.00	\$62,170.00	\$42,210.00
De Moines, Iowa "Silicon Prairie"	\$184,000.00	\$76,840.00	\$46,600.00
Kansas City "Silicon Prairie"	\$177,800.00	\$77,340.00	\$46,800.00
Portland, Maine	\$239,800.00	\$71,430.00	\$45,480.00
Phoenix, Arizona "Silicon Desert	\$217,900.00	\$79,450.00	\$45,840.00
Chattanooga, Tennessee	\$155,200.00	\$71,960.00	\$40,030.00
Charleston, South Carolina "Silicon Harbor"	\$244,500.00	\$70,270.00	\$42,770.00
Gainesville, Florida "Silicon Swamp"	\$190,000.00	\$61,540.00	\$43,040.00
Hunterdon County, NJ	\$390,000.00	N/A	\$105,880.00

Note: Hunterdon County: Median Home Price is as 2017; Average Overall Salary is as of 2013. All other figures are Q2 2015.

In addition, to offering a lower cost of living and higher wages when compared to Silicon Valley, there are a variety of tax incentives and abatements offered nationally, on a state level and even more granularly at a local level.

The Small Business Administration (SBA)

The U.S. Small Business Administration (SBA), created in 1953, "helps Americans start, build and grow businesses. Through an extensive network of field offices and partnerships with public and private organizations, SBA delivers its services to people throughout the United States, Puerto Rico, the U.S. Virgin Islands and Guam."⁶⁹ The SBA can serve as a resource to start and manage a business, for financing, contracting and education.

SBA provides loans to businesses. The requirements of eligibility are based on specific aspects of the business and its principals. As such, the key factors of eligibility are based on what the business does to

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⁶⁸ Gopal, Prashant. Bloomberg. Silicon Prairie: Tech Hubs of the Heartland Lure Young Talent With \$160,000 Homes. September 24, 2015. https://www.bloomberg.com/news/articles/2015-09-24/go-midwest-young-techie-silicon-valley-too-pricey-for-startups

⁶⁹ https://www.sba.gov/about-sba/what-we-do/mission

receive its income, the character of its ownership and where the business operates.

SBA generally does not specify what businesses are eligible. Rather, the agency outlines what businesses are not eligible. However, there are some universally applicable requirements. To be eligible for assistance, businesses must:

- Operate for profit
- "Be small," as defined by SBA
- Be engaged in, or propose to do business in, the United States or its possessions
- Have reasonable invested equity
- Use alternative financial resources, including personal assets, before seeking financial assistance
- Be able to demonstrate a need for the loan proceeds
- Use the funds for a sound business purpose
- Not be delinquent on any existing debt obligations to the U.S. government

If you are awarded a loan, you can use the loan proceeds to help finance a large variety of business purposes. However, there are a few restrictions. For example, proceeds can't be used to buy an asset to hold for its potential increased value or to reimburse an owner for the money they previously put into their business. Basic uses for the loan are: to provide long-term working capital to use to pay operational expenses, accounts payable and/or to purchase inventory; short-term working capital needs, including seasonal financing, contract performance, construction financing and exporting; revolving funds based on the value of existing inventory and receivables, under special conditions; to purchase equipment, machinery, furniture, fixtures, supplies or materials; to purchase real estate, including land and buildings; to construct a new building or renovate an existing building; to establish a new business or assist in the acquisition, operation or expansion of an existing business; and under certain conditions, to refinance existing business debt. 70

Another SBA program is Community Advantage, which is a pilot loan program established to meet the credit, management, and technical assistance needs of small businesses in underserved markets. Community Advantage provides mission-based lenders access to loan guaranties as high as 85% for loans up to \$250,000. In order to qualify, the business must be for profit businesses in underserved markets that can meet SBA's size standards. Although a borrower must prove credit worthiness and the viability of the business idea, unlike traditional lending, qualification for this program is not limited by the size of the borrower's balance sheet, or the amount of collateral involved. Additionally, your lender has access to SBA's network of enhanced management and technical assistance, which may include business plan preparation, market research, accounting services, and payroll.⁷¹

Rural business loans are also offered through SBA. If your business is located in a rural community, you may qualify for special financing. The U.S. Department of Agriculture (USDA) currently maintains a Business and Industry (B&I) Guaranteed Loan Program. The USDA provides guarantees of up to 80 percent of a loan made by a commercial lender. Loans can be used for working capital, machinery

⁷⁰ https://www.sba.gov/loans-grants

⁷¹ https://www.sba.gov/loans-grants/see-what-sba-offers/sba-loan-programs/general-small-business-loans-7a/special-types-7a-loans/community-advantage-loans

and equipment, building and real estate and certain types of debt refinancing.⁷²

Unity Bank with offices in Clinton, Whitehouse, and Flemington (and other locations throughout New Jersey) have a large team of professionals to assist businesses with both commercial loans and loans through the Small Business Administration.

Choose New Jersey (Choose NJ)

Choose NJ is a member of the New Jersey Partnership for Action (PFA), a four-pronged public-private approach to economic development. The PFA serves as the starting point for all initiatives, policies and efforts related to growing New Jersey's economy and creating sustainable jobs. Choose NJ, founded in 2010 and located in Princeton, aims to encourage and nurture economic growth throughout New Jersey, with a focus on our urban centers.

Privately funded, Choose NJ is supported by a prominent group of leaders from many of the State's Fortune 500 and other top companies, labor organizations, associations, and higher education institutions. These organizations represent 1.25 million people, or nearly one-quarter of the State's private-sector workforce. Through the integrated marketing and business attraction and retention efforts, Choose NJ stimulates job creation and capital investment. They collaborate with the State's universities to encourage research, discovery, and innovation.

Importantly, Choose NJ markets New Jersey as a burgeoning technology hub itself. "Long an epicenter for discovery and invention, today the State is home to new Information and Communications Technology (ICT) leaders, Financial Technology (FinTech) giants and thousands of entrepreneurial startups and growing technology companies. They know they can rely on New Jersey's highly-educated workforce and legacy of innovation to develop the technologies of tomorrow." It would not be difficult to ride the building statewide momentum building in this sector.

The NJ Business Action Center (NJBAC)

The NJ Business Action Center (BAC) is the one-stop shop for businesses; it helps businesses of all sizes save time and money by offering a variety of business-related activities, including:

- Accessing Financial and Incentive Programs. They will identify business eligibility for State programs and create a detailed proposal that will help businesses take action.
- Navigating Permitting and Regulatory Processes. BAC has an in-depth understanding of the State's permitting and regulatory processes to help assess issues, identify challenges and formulate sound and effective solutions.
- Offering Site Selection Services. BAC will prepare a concise real estate listing of sites from their comprehensive database of NJ commercial properties that match specific specifications.
- Finding New Markets. BAC offers programs that include trade consulting services and inward foreign direct investment services and can help identify buyers, international markets and

⁷² https://www.sba.gov/category/lender-navigation/sba-loan-programs/rural-business-investment-program-rbip

⁷³ "A Thriving Technology Cluster", ChooseNJ, http://www.choosenj.com/key-industries/technology.

partners for joint ventures and strategic alliances. 74

The NJ Economic Development Authority (NJEDA)

The NJ Economic Development Authority (NJEDA) is an independent government entity dedicated to broadening and expanding the state's economic base and offers a variety of incentives for small and mid-sized business, large business and development, and for emerging technology and life sciences.

Incentives for *small and mid-sized businesses* include the following:

<u>Premier Lender Program</u> – this purpose of the program is to offer assistance with fixed assets, working capital and/or refinancing of existing debt. The program provides up to \$2 million loan participation or \$1.5 million loan guarantee for fixed assets, up to \$750,000 loan participation or \$1.5 million loan guarantee for working capital, and/or up to \$750,000 line of credit guarantee. The following criteria must be met in order to qualify:

- The business must commit to create or retain one new full-time job for every \$65,000 in EDA exposure within two years
- 1x1x Debt Service Coverage Ratio (Net Operating Income/total Debt Service)
- 100% loan to value for Real Estate and 90% for Equipment

<u>Direct Loans</u> – NJEDA will provide loans up to \$2 million for fixed assets and up to \$750,000 for working capital. In order to qualify, the business must commit to the creation or retention of one full-time job for every \$65,000 of EDA exposure within two years.

<u>Small Business Fund</u> – Creditworthy small, minority or women-owned businesses in New Jersey that have been in operation for at least one full year and may not have the ability to get bank financing may be eligible to receive up to \$500,000 for fixed assets or working capital. Must have credit scores of at least 680.

New Jersey Advantage Program – Joint program of EDA and TB Bank. Creditworthy New Jersey business in need of financing and committed to job creation/retention in New Jersey may be eligible for financing up to \$5 million TD Bank term loan with a partial, subordinate EDA guarantee of up to 50% (not to exceed \$2 million for fixed assets and \$1.5 million for working capital) OR up to \$5 million TD Bank line of credit with partial, subordinate EDA guarantee of up to 50%, not to exceed \$500,000. Applicants under this program must meet specific eligibility requirements including:

- Applicant must be doing business in New Jersey
- Create or retain jobs
- 1.1X Historical/Global Debt Service Coverage Ratio
- Loan-to-value up to 80%
- Must be authorized to do business in New Jersey. A Corporate Status report will be obtained by EDA to confirm this.

Incentives for *large business and development* include the following:

NJ Business Action Center NJBAC http://www.nj.gov/njbusiness/

Grow NJ Assistance Program – Powerful job creation and retention incentive program that strengthens New Jersey's competitive edge against tax incentive programs in surrounding states. Businesses that are creating or retaining jobs in New Jersey may be eligible for tax credits ranging from \$500 to \$5,000 per job, per year; with bonus credits ranging from \$250 to \$3,000 per job, per year (award amounts vary based on applicable criteria). In order to qualify for consideration for Grow NJ, a company must be located in an Urban Transit Hub Municipality, Distressed Municipality, Garden State Growth Zones (i.e. Camden, Trenton, Paterson, Passaic) or projects in priority areas.

Additionally, the business must meet or exceed the minimum employment and capital investment requirements, as outlined below:

Minimum Full-Time Employment Requirements

Industry	New / Retained Full-time Jobs
Tech startups and manufacturing businesses	10 / 25
Other targeted Industries	25 / 35
All other businesses/industries	35 / 50

Minimum Capital Investment Requirements

Project Type	(\$/Square Foot of Gross Leasable Area)
Industrial, Warehousing, Logistics and R&D - Rehabilitation Projects	\$20
Industrial, Warehousing, Logistics and R&D - New Construction Projects	\$60
Other – Rehabilitation Projects	\$40
Other – New Construction Projects	\$120

<u>Economic Redevelopment and Growth (ERG) Program</u> - Incentive for developers and businesses to address revenue gaps in development projects, defined as having insufficient revenues to support the project debt service under a standard financing scenario. The ERG Program can also apply to projects that have a below market development margin or rate of return. An applicant may receive incentive grant reimbursement of up to 20% of total project cost, with additional grant funding possible based on project type and/or location.

<u>Brownfields and Contaminated Site Remediation</u> – Non-responsible parties agreeing to undertake and complete the environmental cleanup of the site to the satisfaction of the NJ Department of Environmental Protection may receive up to 75% of approved costs associated with the remediation effort. No financial limitation on the total amount to be recovered. 8 state taxes, including sales,

business use and corporate taxes, can be used to reimburse the developer of remediation costs.

Incentives for *Emerging Technology and Life Sciences* include:

<u>Angel Investor Tax Credit Program</u> – 10% of the qualified investment made in a NJ emerging technology business, up to a maximum allowed credit of \$500,000 for each qualified investment. In order to qualify, the NJ emerging technology business must employ fewer than 225 employees, at least 75% of whom work in New Jersey.

<u>Tech Business Tax Certificate Transfer Program</u> – enables qualified, unprofitable NJ-based technology or biotechnology companies with fewer than 225 US employees (including parent company and all subsidiaries) to sell a percentage of net operating losses (NOL) and research and development (R&D) tax credits to unrelated profitable corporations. Net operating losses and R&D tax credits may be sold for at least 80% of their value, up to a maximum lifetime benefit of \$15 million per business

Edison Innovation Angel Growth Fund — Angel supported technology companies with minimum trailing 12 month commercial revenues of \$250,000 may be eligible for up to \$250,000 in subordinated convertible debt financing. Growth capital through the Edison Innovation Angel Growth Fund can be used for key hires, product rollout, product enhancement, and marketing/sales. There is a 2:1 angel match funding requirement that must be received within 90 days prior to application.

Edison Innovation VC Growth Fund — Venture capital (VC) supported technology companies with minimum trailing 12 month commercial revenues of \$500,000 may be eligible for up to \$1 million in subordinated convertible debt financing. Growth capital through the Edison Innovation VC Growth Fund can be used for key hires, product rollout, product enhancement, and marketing/sales. There is a 1:1 VC match funding requirement that must be received within 90 days prior to application.

Edison Innovation Growth Stars Fund – Angel and/or VC supported technology companies with minimum trailing 12 month commercial revenues of \$2,000,000 may be eligible for up to \$500,000 in subordinated convertible debt financing. Growth capital through the Edison Innovation Growth Stars Fund can be used for key hires, product rollout, product enhancement, and marketing/sales. There is a 1:1 match funding requirement that must be received within 90 days prior to application.

NJ Founders and Funders - NJ Founders & Funders is organized by the NJEDA Technology & Life Sciences (TLS) team to facilitate warm introductions between emerging New Jersey TLS companies and sophisticated angel & institutional investors. Our mission is to help grow the TLS ecosystem to support innovative NJ companies. Hosted twice per year, venture capital investors are invited to meet with a select group of companies for 10-minute, one-on-one sessions to discuss strategy, business models and funding opportunities.

<u>Venture Fund Investments</u> – NJEDA forms collaborative partnerships with venture capital fund managers active in New Jersey's Technology and life science community. Our venture partners leverage NJEDA investment to increase funds available for emerging technology & life sciences companies to grow and create jobs in the State. To date, NJEDA has committed over \$40 million to more than a dozen venture

capital funds since 1999. Cumulatively, these partner funds invested approximately 6x the NJ EDA's investment into more than 60 New Jersey early-stage technology and life science companies. Including other third party investors, companies in the NJEDA venture fund portfolio have received approximately \$2 billion of funding and employed almost 2,000 full time employees as of December 31, 2015.

As illustrated, the NJEDA has a plethora of incentives, financing opportunities and tax credits when considering doing business in New Jersey. Several of the incentives identified above are applicable to municipalities and landmarks within Hunterdon County. For example:

- The International Paper Company in Milford, NJ was identified as an area in need of redevelopment, a highlands development credit receiving area, ⁷⁵ a qualified incentives area, a brownfield Site, ⁷⁶ and residents may qualify for the live where you work mortgage loan program (see #2 on the map below). ⁷⁷
- The Township of Union Water Supply was identified as a priority area, a highlands development credit receiving area, a qualified incentives area, a smart growth area and residents may qualify for the live where you work mortgage loan program (see #4 on the map below).
- Exxon in Clinton Township was identified as a priority area, a highlands development credit receiving area, a qualified incentives area, a brownfield sites, a smart growth area and residents may qualify for the live where you work mortgage loan program (see #6 on the map below).
- Sky Manor Airport in Township of Alexandria was identified as a priority area, a highlands development credit receiving area, a qualified incentives area, a brownfield site, a smart growth area and residents may qualify for the live where you work mortgage loan program (see #5 on the map below).
- The Mansion (12 Bridge Street) in Frenchtown Borough was identified as ad area in need of redevelopment, a qualified incentive area, and residents may qualify for the live where you work mortgage loan program (see #8 on the map below).
- The Fire Department in Flemington Borough was identified as a priority area, a qualified incentives area, a smart growth area and residents may qualify for the live where you work mortgage loan program (see #14 on the map below). Additionally, Flemington was identified as a Designated Center by the state of New Jersey. Designated Centers are the New Jersey State Plan's preferred vehicle for accommodating growth. The compact form of a Center is considerably more efficient than a fragmented community, providing opportunities for cost savings across a wide range of factors. Centers promote community, protect the environment, provide enhanced cultural and aesthetic experiences, and offer residents a superior quality of life. Center locations are determined through a process called "Cross-acceptance," in coordination with other state, county and local entities. ⁷⁸

The above are just a few example of corporations, properties, and townships that may qualify for

⁷⁵ Highlands Preservation and Planning Areas were delineated for the Highlands Water Protection and Planning Act. The Act mandates strict land use controls through the Highlands Master Plan over the Preservation Area.

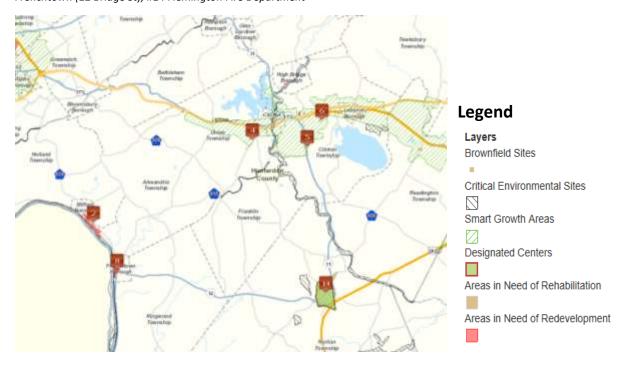
⁷⁶ Brownfields are any former or current commercial or industrial sites, currently vacant or underutilized and on which there have been, or suspected to have been, a discharge of a contaminant. (Source: Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-1 et seq.)

⁷⁷ The Live Where You Work (LWYW) program is a home mortgage incentive program that provides low-interest mortgage loans to homebuyers purchasing homes in towns where they are employed.

⁷⁸ The New Jersey Economic Development Authority. http://www.njeda.com/

incentives under the Economic Opportunity Act of 2013 which is the act that identifies qualifications for economic incentives. The classifications and possible grant dollars are: Urban Transit Hubs and Garden State Growth Zones (\$5,000), Distressed Municipalities within Qualified Incentive Areas (\$4,000), Priority Areas (\$3,000), Qualified Incentive Areas (\$500), Mega areas where certain qualifications may result in a \$5,000 base. The incentives are administered by the NJEDA.

Caption: Below is a screen print and legend from NJEDA interactive map feature. #1 International Paper Company, Milford; #4 Township of Union Water Supply; #5 Exxon Mobile in Clinton; #6 Sky Manor Airport in Alexandria Township; #8 The Mansion in Frenchtown (12 Bridge St); #14 Flemington Fire Department



NJ Business Incubation Network (NJBIN)

The New Jersey Business Incubation Network (NJBIN) is a collaborative statewide community of business experts and resource facilities dedicated to enhancing the commercial success of early stage and expansion stage entrepreneurial companies, growing higher paying jobs, and supporting the economic growth strategy for the state. Early stage and expansion stage companies receive critical support services and flexible space in a professional business environment.

Through a partnership with the National Business Incubation Network, NJBIN also offers access to a national network of best practices for business incubators, which helps to maximize the number of successful startups in New Jersey and offers increased federal and state support for business incubators.

The Networks thirteen incubators make significant and measurable contributions to the state's economic growth. See location of each incubator on map below.

- 1. Rowan College at Burlington County Incubators, Mt Laurel
- 2. Biz Dev Incubator Jersey City
- 3. CCIT North Brunswick

- 4. Enterprise Dev Center Newark
- 5. FUSE, Lyndhurst
- 6. Biz One Stop Service Plainfield
- 7. Picatinny Innov Center Dover
- 8. Rohrer Biz Incubator Mullica Hill
- 9. The Camden CoLab
- 10. Rutgers EcoComplex Bordentown
- 11. Rutgers Food Innov Ctr Bridgeton
- 12. Business Development Center, Asbury Park
- 13. JuiceTank, Somerset

Over the past three years, annual contributions from over 450 entrepreneurial companies in NJBIN incubators have averaged:

- 1,350+ new, higher-paying jobs created and retained
- \$130 M revenue generated
- \$30 M 3rd party funding brought into New Jersey
- 200+ student interns trained

NJBIN offers an extensive array of services to client companies, professional partners/service providers, and investors.

Client companies receive a dynamic, professional, collaborative work environment; an affordable space (Office, lab, pilot production); office services (conference rooms, phone, fax, copies, internet, etc.); introductions and access to academic, technology and professional service providers; professional training, coaching and management assistance; and networking with other companies, NJBIN affiliates and member organizations.

Professional partners and service providers receive access to exciting technology companies in pre-seed to early growth stages; market category opportunities; opportunities to extend and expand your product and service offerings; and networking

Investors receive access to high growth, emerging, IP based technology companies and opportunities to shape new industries and markets and play a leading role in helping New Jersey companies become market and industry leaders.⁷⁹

Somerset and Hunterdon County Small Business Development Center (SBDC)

Small Business Development Centers were established in 1977 and can be found in every state in the U.S. Twelve SBDC's are located throughout New Jersey. The SBDC at Raritan Valley Community College (RVCC) offers free counseling, resources and training to small business owners in both Somerset and Hunterdon County. Services are extended to all industries including technology, manufacturing, retail, service, wholesale, as well as international trade. The center offers:

• Free, confidential, one-on-one counseling for startups and established small business owners. The experienced staff answer questions and offer guidance on a variety of topics, including starting a small business, strategic business planning, marketing, recordkeeping, financial needs, online and web-based technology and more.

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⁷⁹ https://www.njbin.org/

- Free and Low-cost classes, seminars and workshops conducted by small business professionals, successful owners, consultants and federal and state government specialists. Topics are designed to benefit both start-up and established businesses.
- Information on assessing online resources and database, printed handouts, magazines, and literature on small business topics.

The SBDC offers an Accounting and QuickBooks Certificate, an Entrepreneurial Certificate Program (ECP), a Digital Blueprint Certificate Program (DPCP) and many other classes including law, taxation, financing and marketing to name a few.⁸⁰

Tax Abatements 81

Tax Abatements may be offered to lessen the tax burden. A developer can be granted a tax abatement from a city or borough. The benefits of the tax abatement are then passed on to owners or renters who eventually purchase or rent property within the building. The owner or renter pays less property tax over the period of the abatement, thus cost savings are realized by the end user of the property. The technical term for an abatement tax is "Payment In Lieu Of Taxes", or "PILOT." It can be thought of less as a tax and more as a municipal fee that is paid to the city. Two key attributes to understand about a PILOT are (a) the PILOT payments are agreed upon in advance between the city and the developer, thus predictable over a period of many years (vs. property taxes which can rise unpredictably over time) and (b) PILOT payments are lower than a property tax would be (since it's an "abated," or lessened tax).

Tax abatements are regulated by the State of New Jersey with the original purpose of restoring "blighted" areas2². The foundational premise of an abatement was this: if a property is "blighted" then extra incentive is needed to coax a private developer to build upon or upgrade the property. In essence, blight equates to risk; what if the developer invests hundreds of millions of dollars yet owners or renters are still unwilling to move in? The tax abatement is meant to counter this risk. With an abatement, a significant cost that the government can control – taxes – is lowered, thus enabling the developer to attract a greater supply of owners or renters. The NJ legislature changed the threshold from "blight" to "areas in need of redevelopment" in the early 1990s, thereby expanding the use of an abatement.

There are two types of abatements that are relevant to this paper, both established by NJ law: (a) short-term tax abatement (5-year term) and (b) long-term tax abatement (all abatements greater than 5 years and up to 30 years from completion of the project or 35 years from execution of the contract) \mathbb{P}^3 .

Other Incentives

As previously mentioned, suburban areas nationally have been successful in creating technology meccas through innovation and creativity. The methods utilized focus on reducing business costs, influencing business decisions, advancing social and environmental welfare, and connecting with well-

⁸⁰ America's SBDC New Jersey at Raritan Valley Community College. https://www.sbdcrvcc.com/

⁸¹ State of New Jersey, Department of the Treasury, Division of Taxation http://www.state.nj.us/treasury/taxation

established best practices in economic development. Examples include the following:

- Promote entrepreneurship through Angel Investing Credits. "In GA, a state angel investing tax credit has created 200 new jobs, with payroll of \$10 million."
- Develop and attract human capital. "FastStart, the 'silver bullet' in Louisiana's success in the site selection wars, provides responsive, customized training to relocate companies. Kansas Rural Opportunity Zones give student loan relief to workers who relocate to rural counties."
- Accelerate Gazelles by focusing incentives on high-growth potential companies. A Gazelle is typically defined as a company experiencing a growth rate above 20%.
- Encourage brownfield remediation. Offer tax credits when contaminated former industrial sites
 are used for industry rather than for housing. Reusing brownfields for industry takes advantage
 of existing infrastructure and has lower standards for cleanup compared to those required for
 housing. Abandoned site cost millions in tax revenues. Not only does brownfield remediation
 increases property values and employment, it promotes smart growth as well.
- Support smart growth initiatives that promote compact development patterns that facilitate taking transit, bicycling or walking between housing, work and retail. "Businesses are increasingly considering livability as a component of site selection."
- Offer tax credits to rehabilitate historic and abandoned buildings for business use.
- Offer tax breaks for local workforce hiring and community development programs, in addition to business retention and expansion programs. "Only 2 percent of new jobs come from relocations within the United States; the remainder comes from expansion of existing facilities and the birth of new companies. Business retention efforts enjoy greater success and better cost efficiency than efforts to recruit business. Louisiana, for example, offers a retention-oriented Modernization Tax Credit, which provides a refundable tax credit worth up to 5 percent of the costs of modernizing or upgrading existing facilities."
- Promote efficient energy and green buildings as a way to reduce business costs. "Alabama SAVES (Sustainable and Verifiable Energy Savings), makes loans of up to 90 percent of project costs, up to \$4,000,000 for energy-saving improvements." This not only saves the companies bottom lines but also reduces government costs for generating and transferring power and also reducing greenhouse gas emissions.

The LHCT conducted various interviews with technology companies (large and small) and business developers within the county and it appears as if the most used government incentive or tax credit is for farm land use. From a small-business perspective, D.J Wright, owner of Wright Ford Funeral Home and Cremation Services, commented that the incentives listed above weren't of much help when he was opening his business. He mentioned, it was much easier to work with Unity Bank than to go through the EDA or SBA.

From a medium sized business perspective, Integrated Clinical Systems has a beautiful property sitting on over 150 acres. Eric Herbel, CEO and founder of Integrated Clinical Systems, receives property tax relief by renting a portion of his land to local farmers. The land is then assessed as farmland which significantly reduces the company's property tax.

In regards to large business, Russ Giglio, Research and Development Business Advisor at

 $^{^{82}}$ The Next Silicon Valley. http://www.thenextsiliconvalley.com/2015/09/08/3927-innovation-in-economic-development-new-incentives-for-the-21st-century/

Exxonmobil, informed the LHCT that Exxon uses a very similar model to that of Integrated Clinical Systems for Exxon's premises in Hunterdon County (Clinton Township). The Corporation invites farmers to farm the 6+ acres of farmland. Thus, the property is assessed as farmland and the company's property taxes are significantly reduced.

Lastly, the developer of downtown Flemington mentioned they are not using any government incentives. In speaking with Lead Developer, Jack Cust, the EDA was involved and the project qualified for a \$10k credit. However, according to Mr. Cust, that credit came with "strings attached." They would have been required to have union jobs with union salaries which would have far outweighed the \$10k credit.

In conclusion, it appears as if Hunterdon County has the resources available to compete in a tech world from an incentive, financing and tax credit perspective. It's just a matter of 1) ensuring the available resources are fully utilized and 2) creating a tech culture. Can we incentivize companies to offer pre-tax perks, e.g. free meals, dry cleaning on-site, in-home care agents, 24 hour counseling services, gaming stations, ping pong tables, stocked employee break rooms, casual dress codes, flexible scheduling, employer provided transportation, etc. Exxon offers some of these including a free gym, softball and soccer fields, and are considering adding a putting green to the campus.

Making Hunterdon County Attractive For A New Workforce____

In 2016, Silicon Valley Leadership Group conducted an expansive survey to determine the state of the tech sector in their region. ⁸³ Growth has slowed in Silicon Valley, and the survey indicates this is due in large part to high labor costs. ⁸⁴ This is one major area in which Hunterdon County can provide demonstrable benefit for tech companies searching for a relocation site. Tech labor is relatively more affordable here, and an industry of technology companies has already begun to emerge in the area, providing access to tech talent - considered among the top 5 requirements tech companies identify as necessary for a tech hub. ⁸⁵

Current Hunterdon Workforce

Over the past twelve years, Hunterdon County has consistently maintained a lower rate of unemployment relative to the rest of New Jersey. While the recent recession (2008-10) resulted in a significant increase in unemployment, Hunterdon County fared comparatively well, rising from a low of 2.7 percent in October 2007 to a high of 8.4 percent in February 2010, with both New Jersey and the country peaking at 9.8 and 10 percent respectively, in October 2009.

With over 38% of the workforce in Hunterdon County possessing a bachelor's degree or higher, Hunterdon County has a highly-educated workforce. This provides the industries within the county with

⁸³ Gerston, Larry N. "Silicon Valley CEO Survey Business Climate," Silicon Valley Leadership Group. http://svlg.org/wp-content/uploads/2016/04/2016_CEO_Survey_Booklet_Digital_.pdf.

⁸⁴ Id. at p. 18.

⁸⁵ Id. at p. 5.

the highly-skilled and educated labor needed to help restart the economy throughout the county.

Count	Share
2,892	4.7%
9,678	15.9%
14,188	23.3%
23,345	38.3%
	2,892 9,678 14,188

Source: U.S. Census Bureau, Hunterdon County, NJ (2nd Quarter of 2002-2014) 86

Trends demonstrate a general decline in population and high paying jobs, further emphasizing the need to bring jobs - high wage and with growth potential - back to the county. The fact that the county's fastest growing employment industry is food services, which has a national average annual salary of \$19,040 (\$9.16/hr),⁸⁷ means that we must look elsewhere to fill the job gap. The Professional, Scientific, and Technical Services sector in Hunterdon County has notably remained relatively steady. This industry already plays a role in Hunterdon County.

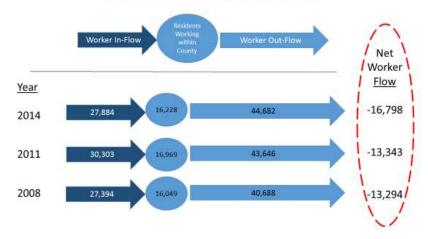
Where do Hunterdon Residents Work?

The illustration below indicates that the number of workers who commute into Hunterdon County increased between 2008 and 2011, but declined back to 2008 levels in 2014. This explains why the number of employed residents of Hunterdon County commuting outside of the county rose appears to have held steady since 2014. All while the number of Hunterdon residents working within the county has remained relatively steady throughout this time period.

⁸⁶ U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014). Selection: Hunterdon County, NJ

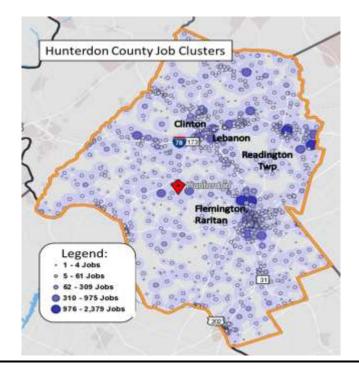
⁸⁷ "Food and Beverage Serving and Related Workers," Bureau of Labor Statistics. https://www.bls.gov/ooh/food-preparation-and-serving/food-and-beverage-serving-and-related-workers.htm.

Worker In-Flow / Out-Flow, Hunterdon County



The Net Worker Flow tells a disturbing story of a significant increase in net worker outflow. Hunterdon residents who commute outside of the county for work, jumped by almost 26% from 2011 to 2014 suggesting an increase in the availability of job opportunities outside Hunterdon County. This exodus could be exacerbated by higher earning jobs in the surrounding counties, Morris and Mercer.

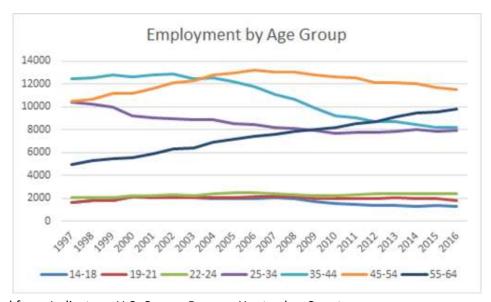
The map below shows that most of the jobs are currently clustered around four regional areas within Hunterdon. Given the expanded availability of broadband and infrastructure, a Tech Park would not necessarily need to be located within any one these areas. However, being near a social center, a requirement of the millennials, would necessitate locating in, or in close proximity to one of them.



Workforce Trends in Hunterdon County (By Age)

Hunterdon County enjoys an age-diverse workforce, though it is showing some striking signs of leakage from certain groups. According to the Quarterly Workforce Indicators⁸⁹, the population of the age group between 35-44 experienced the greatest decline in Hunterdon County between 2005 and 2010. That age group still continues to decline, albeit at a slower rate.

In terms of growth, the New Jersey Department of Labor and Workforce Development⁹⁰ estimates that Hunterdon County's labor force will be comprised of more workers who are 45 years of age or older than workers younger than 45, up until 2025, when the ratio reverses. By 2030, only 47 percent of all workers are projected to be 45 years of age or older. Accordingly, over the next ten years or longer, local companies will find it increasingly difficult to replace workers nearing retirement quickly, potentially placing upward pressure on wage rates to better recruit.



Source: Workforce Indicators, U.S. Census Bureau, Hunterdon County

How much do Hunterdon workers earn?

The annual average monthly earnings graph below 91 illustrates Hunterdon County is in general

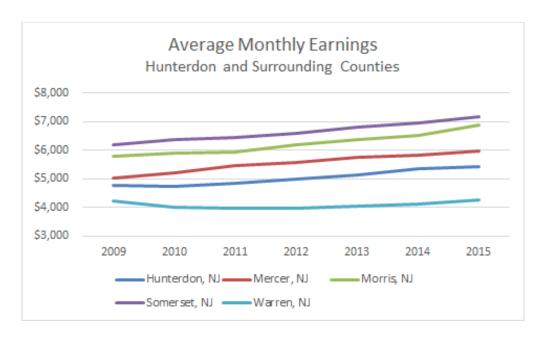
⁸⁸ U.S. Census Bureau, Longitudinal Employer-Household Dynamics, https://lehd.ces.census.gov

⁸⁹ U.S. Census Bureau, Workforce Forecasts, https://qwiexplorer.ces.census.gov/static/explore.html#x=0&g=0

⁹⁰ U.S. Census Bureau, Workforce Forecasts, https://gwiexplorer.ces.census.gov/static/explore.html#x=0&g=0

⁹¹ U.S. Census Bureau, Ave Monthly Earnings (Yearly Averages by County)

on average with New Jersey and the other surrounding counties but lagging behind Somerset and Morris counties. Interestingly, Mercer County has shown a steady increase since 2010, while Somerset and Morris counties have maintained their leading positions as the highest average monthly earnings across the counties surrounding Hunterdon County.



Source: U.S. Census Bureau, Ave Monthly Earnings (Yearly Averages by County)

Just prior to the start of the 2008 economic recession, the average monthly earnings among all jobs in Hunterdon were approximately \$4,900, roughly equivalent with the state average, experiencing a slight dip in 2010 relative to the other counties.

With respect to tech-specific jobs, it is significantly cheaper to employ a technologist in Hunterdon County than other more established technology hubs. For example, the average tech salary in San Francisco, the largest metropolis in Silicon Valley, is \$113,497. The average salary in 2015 in Hunterdon County in the same industry was \$102,092.00. It is also important to note that there is significantly more and a wider range of jobs in San Francisco. In Hunterdon County, interviews with technologists indicate that current residents in the county already work on the higher scale of the industry. Increase in starter tech positions would dramatically decrease Hunterdon's average tech salary over time.

⁹² Strauss, Karsten. "The 15 U.S. Cities With The Highest Salaries In Tech In 2016 (Adjusted For Cost Of Living)," Forbes.com;2016 Aug. 11. https://www.forbes.com/sites/karstenstrauss/2016/08/11/the-15-u-s-cities-with-the-highest-salaries-in-tech-in-2016-after-your-pay-the-cost-of-living/#1241ed95258f.

⁹³ Data USA. https://datausa.io/profile/geo/hunterdon-county-nj/#economy.

	Projections of Civilian Labor Force						
		(Hunterdo	n and Surroundi	ng Counties)			
	2014	<u>2019</u>	<u>2019</u>	2024	2034	Overall Growth	
Somerset	174,000	181,482	188,106	194,991	198,987	14%	Somerset, Morris &
Morris	263,900	273,167	283,087	291,650	296,132	12%	Mercer show steady
Mercer	194,500	190,453	194,932	201,042	206,134	6%	growth, while Hunterdon &
Hunterdon	66,400	64,768	64,805	64,245	64,022	-4%	Warren are projected to
Warren	57,400	55,303	55,095	54,494	54,054	-6%	decline

Source: New Jersey, Dept Labor and Workforce Development⁹⁴

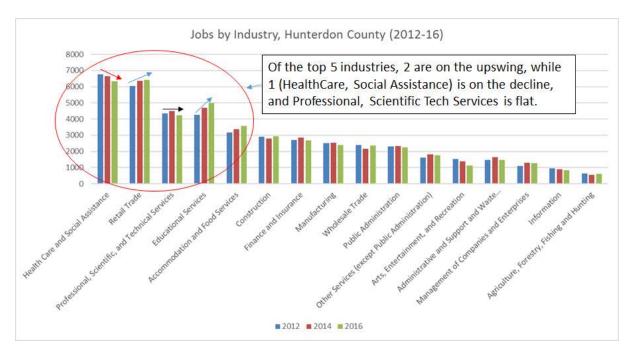
As shown in table above, the New Jersey, Dept Labor and Workforce Development⁹⁵ reports that the overall labor force in Hunterdon County will shrink by 4% through 2034. Unless action is taken to reverse the tide, Hunterdon County will continue to experience the brain drain. Part of the reason for this could be attributable to the earnings potential in the surrounding counties rising while Hunterdon's remaining relatively stagnant.

U.S. Census Bureau (Quarterly Workforce Indicators, Hunterdon County) ⁹⁶ indicates that top five industries by average number of jobs created between 2012 and 2016 were led by: Healthcare and Social Assistance; Retail Trade; Professional, Scientific, and Technical Services; and Educational Services. While job creation in Educational Services, Retail Trade, Construction, and Accommodation and Food Services led the industry in growth throughout this period.

⁹⁴ New Jersey, Dept Labor and Workforce Development, <u>Projections of County Civilian Labor Force: New Jersey, 2014 to 2034 http://lwd.state.nj.us/labor/lpa/dmograph/lfproj/lfproj_index.html</u>

⁹⁵ New Jersey, Dept Labor and Workforce Development, <u>Projections of County Civilian Labor Force: New Jersey</u>, 2014 to 2034 http://html.ncber.nj.us/labor/lpa/dmograph/lfproj/lfproj/index.html

⁹⁶ Quarterly Workforce Indicators, U.S. Census Bureau, QWI Explorer application, U.S. Census Bureau, qwiexplorer.ces.census.gov/exp-r/fbd9a.html



Source: U.S. Census Bureau (Quarterly Workforce Indicators, Hunterdon County) 97

The largest employer by sector in the county, Healthcare and Social Assistance, is experiencing a steady decline. This will leave an employment gap in the county. What fills this gap will dictate the economic viability of Hunterdon's future. Hunterdon's largest growth sectors are currently educational services and accommodation and food services industries. In order to achieve real economic growth, the job growth sectors must be focused on higher wage jobs. the county's fastest growing employment industry is food services, which has a national average annual salary of \$19,040 (\$9.16/hr), will not provide Hunterdon with the economic growth the county seeks. We must turn to an industry that already plays a strong role in Hunterdon County and nurture its growth - the Professional, Scientific, and Technical Services sector.

What the Millennial Workforce Wants

"New Jersey ranks as the highest state in the country of millennials living at home with their parents," said New Jersey Policy Perspective Vice President Jon Whiten. 99 U.S. Census Bureau figures show almost half — 47 percent — of New Jerseyans aged 18 to 34 years old live with their parents.

⁹⁷ Quarterly Workforce Indicators, U.S. Census Bureau, QWI Explorer application, U.S. Census Bureau, qwiexplorer.ces.census.gov/exp-r/fbd9a.html

⁹⁸ "Food and Beverage Serving and Related Workers," Bureau of Labor Statistics. https://www.bls.gov/ooh/food-preparation-and-serving/food-and-beverage-serving-and-related-workers.htm.

⁹⁹ NJ Leads Nation in Millennials Living with Parents; http://www.njtvonline.org/news/video/nj-leads-nation-millennials-living-parents/

North Jersey is home to the most households with Millennials with Hunterdon County having the highest with 61 percent. "It's a combination of a stuck economy, high cost of living and low wages and add on to that a lack of affordable housing and increasing student debt and you've really got a perfect storm," states Whiten.

In order to attract more Millennials to Hunterdon County, the county needs to nurture jobs, and therefore industries, that can provide what they want. A recent Gallup Poll ¹⁰⁰ ("How Millennials Want to Work and Live"), found that Millennials struggle to find good jobs that engage them. As a highly-educated and technologically-connected group, they are a generation most likely to switch jobs several times throughout their career. Millennials want engaging jobs, a purposeful life, an active community with social ties and financial stability.

Workforce Development Programs - Supporting Industry Growth

Talent Networks¹⁰¹, established with grants from the New Jersey Department of Labor and Workforce Development, was created to connect employers with trained employees in 7 major industry clusters in the state. These state-wide networks are focused on the state's key industries: Advanced Manufacturing, Financial Services, Healthcare, Life Sciences, Retail, Hospitality & Tourism, Technology, and Transportation, Logistics & Distribution. These networks develop employer-driven partnerships known as Targeted Industry Partnerships (TIPs) across the state. Each Talent Network focuses their efforts on areas of the state that have a concentration of employers in their specific industry. Hunterdon County participates in the Healthcare and the Retail, Hospitality & Tourism TIP.

To build these partnerships, the Talent Networks: 1) work with employers to identify common skill gaps and workforce needs and identify the skills, abilities, and credentials that are in demand; 2) facilitate the development of a workforce plan for each TIP to respond to identified workforce needs and opportunities and 3) create a strategy for building and sustaining the partnership through commitments from employers, Workforce Development Boards, educational institutions, and other key stakeholders.

New Jersey also provides training through the Consortium for Workforce and Economic Development. In 2015, one such center, Greater Raritan One Stop Career Training Services Center, was established in Flemington, through the Greater Raritan Workforce Investment Board ("GRWIB"). This initiative provides free career training services for Hunterdon residents with services such as, Reemployment Orientation, Interviewing Skills, Resume Assistance, services specifically focused on

¹⁰⁰ Gallup Poll (May 11, 2016); What Millennials Want From Work and Life; http://www.gallup.com/businessjournal/191435/millennials-work-life.aspx.

Talent Network (NJ) http://careerconnections.nj.gov/careerconnections/partners/talent/talent_networks.shtml

Veterans, Older Workers (55+), and young adults. ¹⁰² GRWIIB is already focused on developing its Technology & Entrepreneurship Talent Network.

The current workforce stats may at first blush paint a dismal projection for Hunterdon County's economic trajectory. However, within these statistics there lies evidence of true opportunity for tech sector growth. A combination of job training and investment in the tech sector, as well as a small but strong foundation of existing technology companies, presents a winning combination of elements to grow the sector.

Education Strategies Bridge the Economic Climate in Hunterdon County

Strengthening education, particularly in STEM (science, technology, engineering, and math), is a crucial and necessary element of attracting tech companies and technologists. ¹⁰³ Strategic plans to retain the youth of Hunterdon County as well as attract other young entrepreneurial minds to the area will need to be developed in collaboration with education institutions and strong corporate industries in the community. Hunterdon County already enjoys an exceptional excellent k-12 education and many higher education institutions.

A strategy for retaining students in Hunterdon County and surrounding area is the need for programs to easily transition students into higher education serving the county. Dual enrollment for many high school students grant college credits for coursework that starts in high school. Forming these articulations between high schools and colleges will pave the way to allow students to follow their future right here in Hunterdon County. Hunterdon Central Regional High School has opportunities for dual enrollment programs with Raritan Valley Community College. Students who sign up for Anatomy & Physiology, College English, and Number Systems and meet the requirements outlined in the course description listed in the subject area description, are eligible to earn college credits from Raritan Valley Community College. ¹⁰⁴

Raritan Valley Community College has recently been ranked the number one community college in the state by BestColleges.com, which partners with highereducation.com to provide prospective students information on colleges they wish to attend. The Community College Research Center found that students who obtain an associate's degree from a community college or provided with economic benefits of nearly \$50,000. 105 Raritan Valley has a graduation rate of 40% and tuition rate of \$147 per

¹⁰² Greater Raritan Workforce Investment Board ("GRWIB") http://www.grwib.com/

¹⁰³ Gerston, Larry N. "Silicon Valley CEO Survey Business Climate," Silicon Valley Leadership Group. http://svlg.org/wp-content/uploads/2016/04/2016_CEO_Survey_Booklet_Digital_.pdf at p. 5.

¹⁰⁴ Retrieved from Hunterdon Central Regional High School:

http://www.hcrhs.k12.nj.us/academics/program-of-studies/academic-procedures/index.aspx

¹⁰⁵ Ganga, E. (2013, July 18). Earning Associate Degree Before Transfer Offers Economic Benefits For

credit.

RVCC offers an array of technology programs geared to keep the younger generation in the two counties that it serves. RVCC offers an associate of applied science degree in computer information systems, game development, information systems and technology, and engineering science. The education received while achieving the degrees prepare students for professional careers in computer coding, programming, and game development. The engineering science degree prepares students to transfer into bachelor's degree programs at a four-year college or university. Raritan Valley Community College has formal transfer agreements with New Jersey Institute of Technology, the College of New Jersey, and Rutgers University. All three institutions are in the state of New Jersey allowing more students to remain in the region during school and upon graduation.

Raritan Valley Community College has recently added onto the science wing and has built a new workforce training center facility encompassing hybrid courses for dual enrollment opportunities for high school students utilizing technology courses and 3-D printing capabilities. High school students in this program will be earning college credits while still in high school. Raritan Valley Community College provides incubator space for students to collaborate, brainstorm, and perform problem-solving situations in a creative engineering program.

New Plans for the County

Current redevelopment plans for downtown Flemington, the county seat, include bringing a post-secondary institution to Flemington, with a potential focus in the medical and technology fields. The plan will attract higher education to the only remaining county in New Jersey without a two or four-year college. In speaking with developer Jack Cust, plans have not been finalized, but he is exploring the concept of both two year and four year universities. There may be a competitive situation where we can "pick and choose" the right fit for the county. However, one concern Cust expressed with respect to a technology-orientated program is whether the graduates would have access to local tech jobs after graduation. 107

The increased need for accessible education in the STEM fields have been driven by growth in areas like computer science, engineering, physical, and biological sciences. Continuing to make robust education in these fields available to high school and college students will provide vibrancy in the community, which in turn create a positive impact on retention of the students in the county. Having a new school in the county will provide exciting opportunities for new tech start-up companies to partner with the college to develop strategies for cultivating prospects specifically designed for the company's needs. Initiating partnerships in education to cultivate a pipeline that matches the needs of the

Students and States, New Study Finds. Retrieved from Community College Research Center: http://ccrc.tc.columbia.edu/press-releases/earning-associate-degree-offer-benefit.html Conversation with Jack Cust. ____, 2016.

¹⁰⁸ Bidwell, A. (2015, May 12). *The Next Generation of STEM: Students at the Cutting Edge of Innovation*. Retrieved from U.S. News: https://www.usnews.com/news/the-next-generation-of-stem/articles/2015/05/12/students-across-the-us-show-off-stem-prowess

company will continue the trend to keep students from local high schools to stay in the county and go to local higher education schools then transfer into the workforce to fulfil the economic mission.

Pathways for Successful Careers

Education was never in the forefront of Silicon Valley; it was more of an afterthought. Initially Silicon Valley was best known for technology because the industries in which Venture Capitalists invested in were there. The companies could find the technical employees and management for their products and investors were better able to learn about and monitor nearby deals, which paved the way for co-investment opportunities. As evidenced, "the advantages of investing locally are self-reinforcing." ¹⁰⁹

The number of graduates with STEM backgrounds is dwindling and this is becoming an issue in the Silicon Valley area, particularly with tech hubs flowering in other parts of the nation.

"STEM... jobs will grow by more than 17 percent in the next decade, but an aging STEM workforce and small number of students graduating today with STEM degrees means there are more than 2.5 million unfilled STEM jobs in the U.S. Today, only 18 percent of Computer Science graduates are women. The numbers for underrepresented minorities are even worse." 110

More recently, programs have been instituted within the Valley to fill this void. For example, the Silicon Valley Education Foundation (SVEF), founded in 1998, is dedicated to putting all students on track for college and careers, focusing on the critical areas of STEM through advocacy, programs and innovation. The foundation's objective is help make Silicon Valley #1 in the percentage of high school graduates academically prepared to complete post-secondary education, measured by A-G requirements completion rate.

In addition to non-profits such as the SVEF, corporations have "jumped in on the fun." Chevron runs a "traveling clubhouse [that] uses sports to inspire and empower the next generation of data scientists, structural engineers, broadcast technicians and more." Chevron STEM zone has seen great success and received tremendous feedback from attendees.

Exxon Mobil, located in Hunterdon County, has begun to explore the idea of partnering with local schools within the county through their Science Ambassador Program, which is designed to improve student proficiency in science and math and stimulate student interest through fun activities and programs. The Ambassador Program also conducts classroom presentations, participates in science fairs, presents at Career Day and also hosts real and virtual tours.

An area for additional exploration could be offering internship opportunities to high school students in order to allow them to obtain real world experience. In speaking with Ana Kaplun, Community Relations Advisor, the research and development that occurs at that site is extremely complex and highly confidential, which may reduce the possibility of internship opportunities.

https://techcrunch.com/2015/08/30/why-silicon-valley-falls-short-when-it-comes-to-education/

¹⁰⁹ Shane, 2015. Why venture capitalist deals stay in Silicon Valley. https://www.entrepreneur.com/article/252225

¹¹⁰ Pianko, Daniel. Why Silicon Valley Falls Short When it comes to Education. Aug 30 2015.

¹¹¹ http://www.chevronstemzone.com/

Exxon does partner with various higher-education institutions for a certain skill or area of expertise. Current partnerships include UIT, Princeton and the University of Austin. "Universities are nimble" and can ebb and flow with changes and ideas, explains Russ Giglio, Research and Development Business Advisor.

Opportunities in the Software Engineering Field

Many opportunities exist for students entering STEM fields as popularity continues in this area of education and employer demands. Expected growth in Software Engineering careers soar as this particular job market surpasses 20% through the year 2022 with some of the highest salaries reported according to US News & World Report who has ranked the career choice at 7th highest. Computer Science fields branch off to exciting careers in the computer industry that boast competitive wages and many opportunities for education choices. The expected growth of computer science industry makes it the perfect start-up company to infiltrate Hunterdon County's own eponymous "Flemington Valley". The current and expected growth makes Software Engineering one of the greatest in-demand and fastest growing industrial fields in the country. "Silicon Valley has become a hotbed of activity, where an explosion of capital-backed technology investments into start-ups has elevated software engineers to rock star status, allowing even entry-level candidates to snag \$100,000 per year positions. 112

Some of the major branches and career paths in software engineering include:

- Applications Development
- Systems Development
- Web Development
- Embedded Systems Development

There have been surges in Software Engineering careers that contribute to over 8% of the per 1,000 capita job market. The following chart will show the employment snapshot for software developers in San Francisco and San Jose, from the Bureau of Labor Statistics.

Software Developers	Jobs Per 1,000	Total Employed	Average Salary
Applications	45.71	44,200	\$122,835
Software Developers	Jobs Per 1,000	Total Employed	Average Salary
Systems Software	36.74	35,460	\$124,635

(Software Engineering Careers, n.d.)

¹¹² Software Engineering Careers. (n.d.). Retrieved from Computer Science: http://www.computerscienceonline.org/software-engineering/

Several factors are driving investment and growth of computer science areas in the economy: the complicated systems that require complexed understanding of new software and technology, venture capital-backed start-ups yearning to develop the next big tech idea, new companies are coming out of the woodwork, and the growing dependence we all have on the use of mobile technology. Employment data from the Bureau of Labor Statistics (BLS) shows that software engineering careers are anticipated to grow approximately 22% in employment opportunities across the country from 2012 to 2022. The rapid growth of the software engineer industry allows workers the ability to pursue careers in any number of industries, including technology, healthcare, automotive manufacturing, green energy, remote sensing, aeronautics and finance. Some of the top employers in the computer software industry are competing to attract talented workers. ¹¹³

- Mobile has become a \$3.3 trillion-dollar industry
- Security is projected to be a \$60-billion-dollar industry in 2015
- Big Data is just starting to scratch the surface as a \$125-billion-dollar industry
- Internet of Things is projected to become a \$7.1 trillion-dollar industry by 2020
- Robotics is a \$12.3-billion-dollar industry
- Cloud computing is a \$100-billion-dollar industry
- Health informatics is a \$6 \$7-billion-dollar industry

The chart below portrays the Software Developer, Applications overall occupation growth. 114

Information	Software	Information	Systems	Web	Computer
Security	Applications	Systems	Software	Development	Programming
36.50%	22.80%	20.70%	20.40%	20.10%	8.30%

There are many companies in the competitive market that would be worth approaching to develop similar partnerships to the examples provided by Exxonmobil and Silicon Valley models to pursue startups. Salesforce is a Silicon Valley area company that is advancing rapidly in the growth of industry and demand for skilled workers. Pipelines to gain the interests of students from grade school through college can be formed as another initiative to specialize training to the precise skills required to fulfil the job requirements that are in demand. A college can take advantage of relationship building with companies like ExxonMobil and Salesforce.

Industries Top Employers

¹¹³ Software Engineering Careers. (n.d.). Retrieved from Computer Science: http://www.computerscienceonline.org/software-engineering/

¹¹⁴ Software Engineering Careers. (n.d.). Retrieved from Computer Science: http://www.computerscienceonline.org/software-engineering/

Twitter	LinkedIn	FACEBOOK
Social Media <i>\$121,642</i>	Social Networking \$127,557	Social Networking \$118,445
Guidewire Life and Property Insurance Software \$108,918	Google Search Engine \$118,968	Qualcom Semiconductor Manufacturing \$88,312
Riverbed Enterprise Network Hardware and Software \$109,464	Intuit Financial and Tax Preparation Software \$137,424	Mathworks Computational Software for Engineering \$81,060
Red Hat Open Source Software \$79,725	National Instruments Test Equipment for Building Technology \$64,129	Rackspace Cloud Computing and Web- Hosting \$82,000
Intel Semiconductor Manufacturing \$97,403	Apple Consumer Technology Devices \$110,867	CareerBuilder.com Job Recruitment Website \$73,850
Citrix Enterprise Software \$88,728	NetApp Enterprise Computer-Storage Products \$93,726	Texas Instruments Semiconductor Manufacturing \$91,633
eBay E-Commerce <i>\$120,424</i>	Salesforce Cloud Computing \$112,942	

Software Engineering Careers. (n.d.). Retrieved from: http://www.computerscienceonline.org/software-engineering/

Source: Bureau of Labor Statistics

Schools with Software Engineering Programs

SCHOOL NAME	CITY, STATE	STUDENT POPULATION	SCHOOL TYPE	TUITION
New Jersey Institute of Technology	Newark, NJ	9,558	Public, 4-year	\$12,400
Princeton University	Princeton, NJ	7,813	Private, 4-year	\$38,650
The College of New Jersey	Ewing, NJ	7,152	Public, 4-year	\$10,102
Monmouth University	West Long Branch, NJ	6,570	Private, 4-year	\$29,082
Stevens Institute of Technology	Hoboken, NJ	5,541	Private, 4-year	\$41,670

Partnerships that Develop Pipelines for Students

A strategy in solving an aging population problem in Hunterdon county is to find tactics to keep the younger generation in the county from grade school through college. One concept is to create a pathway for students to stay in local education facilities from grade school through college in hopes that they can find gainful employment in the community. Several companies and colleges are emulating this strategy. Companies like ExxonMobil are providing generous scholarships to grade school students that are tracking STEM programs. The company provides approximately \$15,000 in local school grants to nearby grade school science and technology programs. Ambassador of Science programs are offered to local grade schools with \$8,000 in resources from Exxonmobil. The company also provides approximately \$70,000 in local grants including four scholarships in chemical research and development. The relationship doesn't stop at a monetary value either. As a staple in the community, Exxonmobil offers career information sessions at local high schools from partnerships developed with the superintendent's office to attract students into Science and Technology programs that will streamline a pathway to a career with the industrial giant.

¹¹⁵ Kaplun, A. (2017, March 18). Community Relations Advisor. (J. Jones, Interviewer)

¹¹⁶ Kaplun, A. (2017, March 18). Community Relations Advisor. (J. Jones, Interviewer)

¹¹⁷ Bishop, A. (2017, March 18), Research and Development Support Services Manager, (J. Jones, Interviewer)

¹¹⁸ Kaplun, A. (2017, March 18). Community Relations Advisor. (J. Jones, Interviewer)

When companies and schools collaborate on ways to attract students to Science and Technology programs, a pipeline can be created that will track students to stay at local schools through articulation agreements that will develop necessary skills required for employment in local companies right here in the county. Businesses and schools that can create an attraction to counter against the high school graduates leaving the county could be one catalyst required to stop the migration of the youth away from the county. With the right articulations in place, high school graduates would have more reasonable ambitions to attend local colleges and find opportunities to grow roots and prosper in the local community.

Investing in initiatives like the one between ExxonMobil in Massachusetts Institute of Technology (MIT), provide successful models for other schools and businesses to collaborate in ways to keep graduates or a direct pathway while remaining in the community. This particular initiative proposed ExxonMobil to invest \$25 million over a five-year period to support faculty and student research at MIT to advance and explore the future of energy. The two entities collaborate on a wide range of projects researching more efficient ways for use of hydrocarbons. The partnership allows the MIT Energy Initiative (MITEI) keeping duct cutting-edge research while also establishing 10 graduate energy fellowship appointments each year at MIT. ExxonMobil is building strong ties in the community by creating the bridgework necessary to keep the younger generation from leaving the county. Local schools and businesses interested in mimicking these programs can form strong pathways for students to attend local schools it a direct pathway in demand technology fields emerging in the county.

Colleges Adapt for the Future

Warren County Community College recently renovated a 51,000 square-foot commerce building to include "additional instruction space offering job training and a small business incubator like various locations in colleges around the state with a proven track record of stimulating local business growth/economic development". These types of college incubator programs are at no cost to County taxpayers. Most or all that incurred to the incubator space will be covered through annual lease rates to the tenets that sponsor the space. By utilizing the same model that Warren County Community College proposed, the college could offer temporary, low rent thank you better or office space for new entrepreneurs just starting out. These incubators would not only offer The benefits of the educational facilities encompassed by them but would also offer the expertise and professional support during the most critical time a new business has. As long as these new entrepreneurs to make it through the first year, they will have a better chance of success. With the reduction of state and federal funds over the years, colleges that provide incubators maintained by lease agreements will generate alternate revenue

¹¹⁹ ExxonMobil to Invest in MIT Energy Initiative to Advance Energy Science and Technology Research. (2014, November 3). Retrieved from ExxonMobil News Releases: http://news.exxonmobil.com/press-release/exxonmobil-invest-mit-energy-initiative-advance-energy-science-and-technology-research

¹²⁰ Lechiski, K. (2010, February 2). Warren County Community College sets sights on \$7.3M Phillipsburg campus | NJ.com. Retrieved from NJ.com: http://www.nj.com/warrenreporter/index.ssf/2010/01/warren_county_community_colleg_70.html

sources that will reduce the need for increased tuition.

Local College Rankings

Four-year universities that provide programs in technology are plentiful in the state with the College of New Jersey ranked number two in the state with the graduation rate of 87%. Rutgers, the State University of New Jersey at New Brunswick comes in at number three with the graduation rate of 79%. New Jersey Institute of Technology is ranked number eight with graduation rates at 54%. Stevens Institute of Technology in Hoboken is ranked number four in the state with graduation rate at 78%. ¹²¹

11 rated colleges in New Jersey offering technology programs (5) TWO YEAR and (6) FOUR YEAR								
College name	Associate's Degree Bachelor's Degree		Tuition (in- county)	Cost per	Graduation Rate			
Raritan Valley Community College	Associate's Degree	#1	\$147.00	credit	40%			
County College of Morris	Associate's Degree	#2	\$125.00	credit	42%			
Mercer County Community College	Associate's Degree	#3	\$157.00	credit	33%			
Warren County Community College	Associate's Degree	#4	\$153.00	credit	47%			
Brookdale Community College	Associate's Degree	#5	\$135.00	credit	39%			
College of New Jersey	Bachelor's Degree	#2	\$15,793.00	year	87%			
Rutgers - New Brunswick	Bachelor's Degree	#3	\$367.00	credit	79%			
Stevens Institute of Technology	Bachelor's Degree	#4	\$24,392.00	semester	78%			
Rowan University	Bachelor's Degree	#5	\$13,108	Year	72%			

¹²¹ The Best Colleges in New Jersey for 2017. (n.d.). Retrieved from Best Colleges: http://www.bestcolleges.com/features/best-colleges-in-new-jersey/

New Jersey Institute of Technology	Bachelor's Degree	#8	\$683.00	credit	54%
Kean College	Bachelor's Degree	#15	\$453.00	credit	50%

All of these colleges offer jobs with technical degrees that provide sustainable wages for a family to reside in New Jersey. The highest demanding job in this field is a software engineer with a base salary of \$96,392 and the staggering career outlook of 99,055 job openings across the country. This job title was ranked at number twenty-three on a list of the top 25 highest paying jobs in demand. Other technology jobs include software development manager at number four, solutions architect at number six, analytics manager at number eight, and IT manager at number nine. Educational backgrounds for all of these job positions can be attained starting at a two-year college then transferring to a four-year college. Providing additional opportunities for students to remain in Hunterdon County will certainly attribute to gains in the repopulation among the younger generation. Additional possible outcomes for having a two-year or four-year college in Hunterdon County are students who earned an associate's degree may enter the labor market while continuing to pursue a four-year degree.

Additional interests in developing educational facilities encompassing incubator strategies can be modeled from the new South Jersey Technology Park at Rowan University. Rowan University also offers a robust plan for high school students to acquire college credits early while receiving a 65% discount for the college credits. This strategy will allow opportunities for the colleges that maintain an attraction for students to stay in the same school and retain the same student all the way through college. It's a "one stop shop" model for increasing enrollment and retention. This will certainly provide reasons to keep the next generation in the community and allow more opportunities to grow roots right here in the county. The university is seeking interested partners capable of assisting the advancement of the next phase of expansion at the Technology Park. The park is located in close proximity to Rowan's main campus in Glassboro, New Jersey. The initiatives at Rowan University provide for its national recognition inherently boosting enrollment. The technology-based entrepreneurial center houses faculty and students in 16 engineering research and development laboratories correlating with 15 small businesses in the Rohrer College of Business Incubator.

¹²² Soper, T. (2015, February 17). *Tech industry dominates list of top 25 highest-paying jobs in demand*. Retrieved from GeekWire: http://www.geekwire.com/2015/tech-industry-dominates-list-top-25-highest-paying-jobs-demand/

¹²³https://www.google.com/maps/d/viewer?hl=en&msa=0&z=9&ie=UTF8&mid=1NP7zOEJgVHx3yHn-Zge32hDg0DE&ll=40.19072639810137%2C-74.64979849999997

Expanding the SJTP. (n.d.). Retrieved from The South Jersey Technology Park at Rowan University: http://sjtechpark.org/the-master-plan/expanding-the-sjtp/

¹²⁵ Expanding the SJTP. (n.d.). Retrieved from The South Jersey Technology Park at Rowan University: http://sjtechpark.org/the-master-plan/expanding-the-sjtp/

The Stevens Institute of Technology is another prime example of cultivating students to want to stay in the county. Offering a dynamic and collaborative learning environment, "students entrepreneurs can develop promising concepts and technologies into thriving businesses." The Stevens Venture Center cultivates student entrepreneurs with technology support, best practices, networking, legal experts, accounting experts, investors, and education in the program that is another model of a successful business building practice. While educating students to think as an entrepreneur The center provides opportunities to make the technology ideas into commercial products. The funding resources provide assistance needed to successfully convert ideas into reality. Facilities located in Hoboken, is accessible 24 hours a day, seven days a week offering students unlimited opportunities to work on ideas. The center offers Design & Prototyping Center capable of allowing users to explore 3-D design in computer aided drafting, electronic Prototyping with printed circuit boards, and 3-D printing. This innovative technology center also offers legal services, accounting and tax services, and funding support with connections to angel investor in venture capital firms.

Partnership Opportunities with Higher Education Institutions:

County Partnerships with Local University Based Technology can provide commercial opportunities.

Examples of University Based Technologies are:

Princeton University:

- Office of Technology Licensing
 - Biotechnology/Pharmaceuticals (121)
 - Ceramics/material Sciences (44)
 - o Chemistry (52)
 - Civil/Engineering (9)
 - O Computers and Software (56)
 - Mechanical (16)
 - Medical devices/Diagnostics (44)
 - Opto-Electronics/Electrical Engineering (85)

Stevens Institute of Technology:

- Office of Innovation & Entrepreneurship
 - Biotechnology
 - Communications
 - Environmental

¹²⁶ Stevens Venture Center. (2016, October 1). Retrieved from Stevens Institute of Technology: https://www.stevens.edu/

- Information Assurance/Cyber Security
- Materials/Manufacturing & Processes
- Medical
- Nanotechnology

Rutgers University:

- Office of Research Commercialization (ORC)
 - o Agriculture (33)
 - o Biomaterials (8)
 - O Diagnostics (20)
 - o Electronics (13)
 - o Environmental (9)
 - Food, Nutrition & Nutraceuticals (11)
 - o Information Technology (12)
 - o Life Sciences (107)
 - o Materials (29)
 - Medical Devices (13)
 - Personal Care, Cosmeceuticals (3)
 - o Pest Control (3)
 - Physical Sciences (60)
 - o Plants, Berries, Fruit (29)
 - o Research Tools (29)
 - o Software (8)
 - o Telecommunications (6)
 - Therapeutics (33)
 - Sensing Devices/Technology
 - o Wireless

Stanford University Shapes Silicon Valley

Innovation doesn't stop in New Jersey; Stanford University is known as the world's leading breeding grounds for entrepreneurs that help create and shape Silicon Valley. The "Stanford University's Economic Impact via Innovation and Entrepreneurship" study estimated that companies formed by these entrepreneurs have created nearly 3 trillion dollars since the 1930s. The impactful empirebuilders have also created over 5 million jobs globally. Stanford University played a key role in fostering entrepreneurship among its graduates. The environment has also encouraged students in the School of Business to have a level of creativity and entrepreneurship. The same environment also allows a collaborative effort to share best practices for creating an entrepreneurial ecosystem. "The people, research and ideas of Stanford Engineering have been a catalyst for some of the world's best-known companies," said James D. Plummer, the Frederick Emmons Terman Dean of the School of Engineering and the John M. Fluke Professor of Electrical Engineering. "While the findings of the Stanford Innovation

Eesley, C. E., & Miller, W. F. (2012). *Impact: Stanford University's Economic Impact.*

Survey are a tribute to the successful entrepreneurial legacy of our community, they also provide an inspiration for our students, researchers and faculty to fulfill the full promise of science and technology to be the drivers of economic and societal prosperity in the 21st century." Stanford University's entrepreneurial network of alumni have set the pace for ecosystems everywhere. Modeling the success of Silicon Valley will certainly bring similar results of attracting many innovative thinkers to Hunterdon County. One of the things that Stanford did successfully was creating the culture of entrepreneurship and innovation by ensuring the students had a vast networking and collaborative approach across all academic disciplines and schools.

The University also provided plenty of opportunities for students to research and develop prototypes for their ideas. Stanford offers courses in several different fields of business that support the creative entrepreneurs including LaunchPad, Creating a Startup, The Spirit of Entrepreneurship and others that promote robust programs that will inspire graduates to form startup companies like the Google Giants of the Silicon Valley. Raritan Valley Community College has encouraged similar practices in the engineering program where students have developed prototypes of self-powered electric lights that are offered to the public at a modest fee. Coupled with their own little unique incubator space, the engineering students are allowed creative time in the room to generate new ideas or products. Cultivating these creative thinking environments will allow successful and innovative alumni the opportunity to settle in on a new Silicon Valley experience right here in Raritan Valley.

One of Stanford's other unique processes for success is to bring together creative course offerings matched with Venture Capitalists to help spark initiatives for up and coming talent that will discover new product lines and business models that we see spanning across Silicon Valley. The study has also cited that "approximately 25% of the technical innovators and founders reported taking an entrepreneurial studies course at Stanford, including 60 percent of the "quick founders"—those who received VC funding within three years of graduation." Stanford partners with several different strategic VC groups as well as mentors to help cultivate the students throughout their studies. Faculty members don't stop there; Stanford has faculty that transition from advisors to full board members to company startups of alumni.

Lastly, meetups are becoming one of the best ways to gather groups of people with similar interests. Launch NJ is a meetup out of Madison, NJ. According to the meetup site, this group is for Entrepreneurs, Intrapreneurs, Innovators, Social Entrepreneurs, Students and anyone who aspires to have an impact on their community and the world. Their mission is to help create an environment and ecosystem that nurtures and helps passionate people who want to have an impact on their communities and the world. The group's primary focus is mentorship and young people development.

In speaking with Joe Hudica and Lora Martinez, local entrepreneurs, building a sense of culture and community is first and foremost when taking on an endeavor such as creating a technology hub in

¹²⁸ Eesley, C. E., & Miller, W. F. (2012). *Impact: Stanford University's Economic Impact*.

¹²⁹ Eesley, C. E., & Miller, W. F. (2012). *Impact: Stanford University's Economic Impact*.

Suburban Hunterdon County. The county has already begun creating this sense of community through meetups and its first ever hackathon, which was held April 28th-29th of this year. HackHunterdon, a 24-hour tech product creation competition, attracted technologists from in and around the county to Flemington, Hunterdon's county seat. The purpose of the event is to bring together the most creative and passionate technologists to identify and connect innovative, entrepreneurial talent within Hunterdon, with the aim of recognizing their abilities, partnering with their efforts, and creating an opportunity for their products and ideas to thrive locally.

CONCLUSION

When it comes to innovation, place matters. Not necessarily because of the proximity to facilities or investors (though those are lovely to have, or course), but because creativity is almost always a group endeavor – big ideas are the product not of one big brain, but of many ideas pinging between several smart people.

-Jessica Stillman

In 1791, a small group of 100 freeholders, farmers and local laborers, with an eye towards the future, joined forces to erect the original Hunterdon County Courthouse. Three years later the Court House, two stories tall and measuring sixty by thirty five feet, stood in Flemington, Hunterdon County, New Jersey. Symbolizing the County Seat, the building stood in the wilderness – the intersecting point between Trenton, Philadelphia and New York. The result of not one big brain, but many, working together to bring a shared vision to reality.

Over 250 years later, Hunterdon will once again look towards the future. Current research shows technology is thriving in some of the most unexpected places, and according to industry insiders, it is America's small towns that are experiencing new growth. With existing roots in small technology, now is the time for Hunterdon to reaffirm its commitment to "entrepreneurial gardening". In 2020, Millennials will average 30 years of age; traditionally city dwellers, it appears this preference may be shifting; a recent survey showing they prefer the suburbs 2 to 1 as a long term place to live. Hunterdon is in the unique position to be *that place*; we are a community where tech workers, millennials, and people of all ages will find an identity, a sense of belonging, and an outstanding quality of life.