SALISBURY-WICOMICO 2.0

This page intentionally left blank

SALISBURY-WICOMICO 2.0

Contents

Written by Robert Garcia

February 26, 2018

(760) 668-2829

rgarcia@rgprogramming.com


NCSA
NCSA'S BLUE WATERS PROJECT PROVIDES $1.08 BILLION DIRECT RETURN TO ILLINOIS' ECONOMY
USA TODAY
U.S. needs more STEM jobs to compete: Study
The New York Times
Amazon Plans Second Headquarters, Opening a Bidding War Among Cities
The Washington Post
Northrop Grumman to buy aerospace manufacturer Orbital ATK
Chicago Tribune
Apple banks on tax break to build 2nd campus, hire 20,000

Introduction

"Hi, we're Salisbury! We've got power; we've got bandwidth; we've got space; we're cheap; and if you tell me what you need people-wise, I will find a local to fill that job."

To attract an industry, a city needs to know what that industry needs, and it needs to determine if it can meet the industry's demands. For companies specializing in Information Technology (IT) and Science, Technology, Engineering, and Mathematics (STEM), these demands include an adequate power supply; good connectivity; available space; reasonable costs; and a suitable labor force. If any of these demands are not met, these companies will usually look elsewhere.

In response to recent developments in the tech industry, I examined if Salisbury and Wicomico County can support the needs of a large IT company. I discovered that while we cannot do so at this time, the city and the county can do so in the near future, provided we commit ourselves to resolving certain deficiencies over the next several years, especially in regards to people.

Does Salisbury Need Jobs?

While Salisbury's unemployment rate has dropped from double-digits in 2013 to approximately 6% today, it is still above the national average (U.S. BLS, 2018; U.S. Census Bureau, 2018; MD DOC, 2017). More workers, especially those holding high-paying tech jobs, benefit local small businesses; increase the area's tax base; and more. In this paper, I will show that this excess labor supply, as well as other factors, make Salisbury almost "turn-key" ready for the tech industry.

Background

Last September, when Amazon publicly announced that it was searching for a location for a "second" headquarters, promising 50,000 jobs and $5 billion in investment, cities from the United States, Canada, and Mexico went into public relation frenzies to attract the company (Wingfield, 2017). While Calgary created a giant sign stating they would fight a bear for the company, and Tucson sent a giant cactus to Amazon's main headquarters in Seattle, most bids involved large tax breaks and offering open spaces. However, many cities, such as Toronto, understood that Amazon was not looking for a place to build a super-sized fulfillment center. Amazon was searching for a robust IT community with the infrastructure to support its crown jewel, Amazon Web Services (AWS). AWS is the

world's largest cloud service provider, and accounts for much of Amazon's profits:

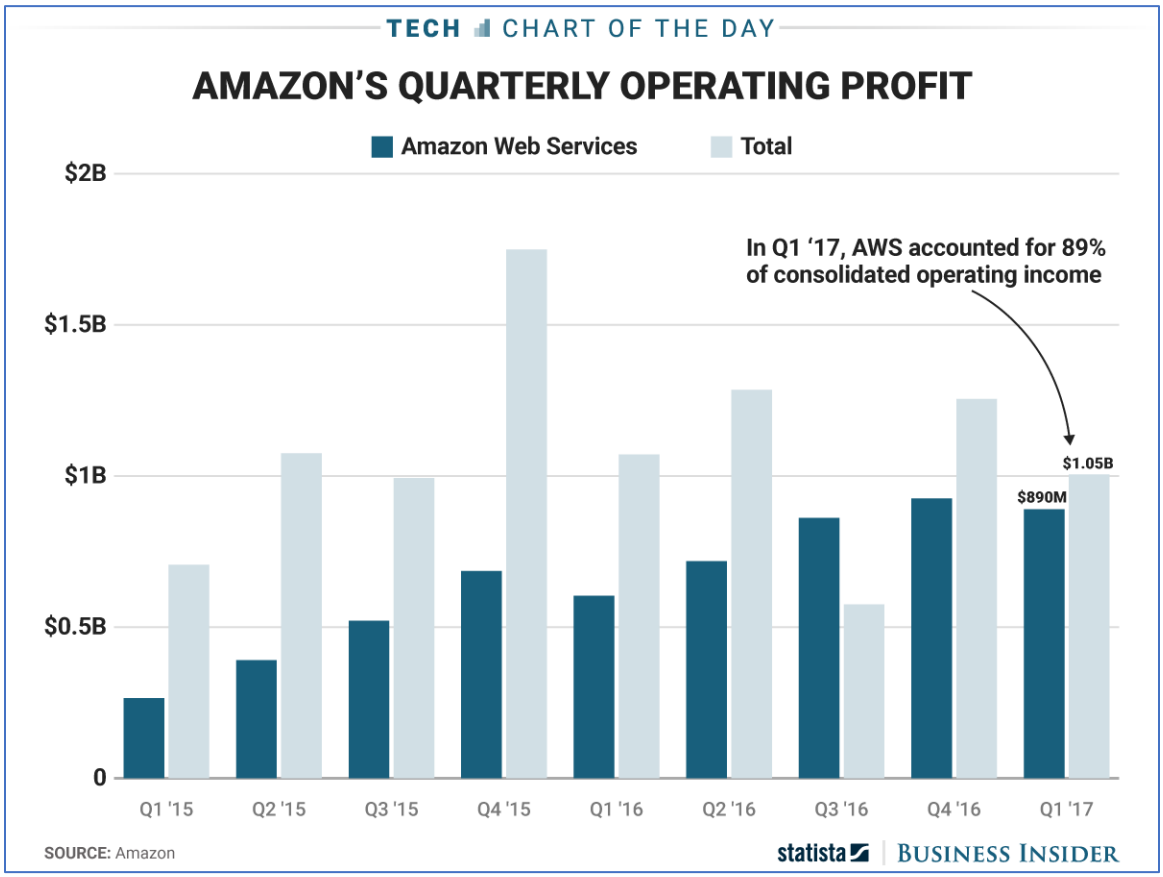


Figure 1. Amazon without AWS (Dunn, 2017)

Toronto's Response to Amazon's Request for Proposal (RFP)

Toronto's Response to Amazon's RFP is elegant; long at almost 200 pages; and focused on highlighting the Canadian's city STEM credentials. Toronto touts the fact that over 183,000 of its citizens have degrees in mathematics, computer, and information science, second only to New York City. In addition, Toronto's home province of Ontario has promised to "'futureproof' their talent pipeline," and increase the number of STEM graduates by 25% over the next five years. Check out the proposal at https://s3.ca-central-1.amazonaws.com/torontoglobal/TorontoRegionResponsetoAmazonHQ2RFP_PD.pdf

Therefore, it is no surprise that one of the deciding factors in choosing the 20 finalists appeared to be information technology; 10 of the top 15 STEM cities in North America are on the list (Greenwood, 2017). Areas with strong IT communities also made the cut, such as Raleigh's Research Triangle Park, and the Dulles Tech Corridor of Northern Virginia, Washington D.C., and Montgomery County:

Table 1. Breakdown of Higher Education Degrees in Major North American Cities (Greenwood, 2017)

Metro	Business, Management, and Public Administration	Mathematics, Computer, and Information Sciences	Architecture, Engineering, and Related Technologies
New York	**1,094,617**	**278,171**	**787,633**
Toronto	**788,580**	**183,505**	**634,080**
Chicago	**532,371**	**114,983**	**378,467**
Montreal	436,630	88,965	357,255
Washington, DC	**364,911**	**141,287**	**304,290**
Dallas	**391,280**	**82,531**	**255,418**
Philadelphia	**321,972**	**69,584**	**247,357**
San Francisco	263,879	97,387	265,148
Atlanta	**340,576**	**73,581**	**208,838**
Boston	**281,149**	**78,343**	**261,527**
Vancouver	246,785	50,975	213,560
Seattle	171,556	70,780	194,921
Denver	**177,052**	**39,750**	**123,561**
Pittsburgh	**123,174**	**26,394**	**104,536**
Charlotte	133,288	23,373	81,352

Source: National Household Survey (2011), U.S. Census Bureau (2013). Cities in bold font are Amazon's HQ2 finalists. Other finalists not listed include Austin, TX; Columbus, OH; Indianapolis, IN; Los Angeles, CA; Miami, FL; Montgomery County, MD; Nashville, TN; Newark, NJ; Northern Virginia; and Raleigh, NC (Amazon, 2018)

Another STEM-related event that will have a significant impact on the local area occurred on November 29, 2017, when Orbital ATK's stockholders unanimously approved Northrop Grumman's bid for their company (Davenport & Gregg 2017). Orbital ATK, itself a merger of Orbital Sciences Corporation and Alliant Techsystems, has been launching Minotaur and Antares rockets from the Mid-Atlantic Regional Spaceport (MARS) at Wallops Island since 2006. As to the question if the MARS is shutting down because of the sale, it is more likely activity at the MARS will increase rather than decrease, due to the combination of Orbital ATK's NASA contracts and Northrop Grumman's defense contacts. In addition, there are only several places in the United States to launch a commercial payload greater than one ton: Cape Canaveral in Florida; Kodiak,

Alaska; Vandenburg Air Force base in California, and the Eastern Shore's own Wallops Island:

Table 2. Active Spaceports with Orbital Capability

Launch Site	Operators	State	Use	Launches supported
California Spaceport & Vandenberg Air Force Base	Spaceport Systems International & US Air Force	CA	Commercial & Government	Orbital & Suborbital
Cape Canaveral Spaceport, Cape Canaveral Air Force Station & Kennedy Space Center	Space Florida, US Air Force & NASA	FL	Commercial & Government	Orbital & Suborbital
Mid-Atlantic Regional Spaceport & Wallops Flight Facility	Virginia Commercial Space Flight Authority & NASA	VA	Commercial & Government	Orbital & Suborbital
Pacific Missile Range Facility	US Navy	HI	Government	Orbital
Pacific Spaceport Complex Alaska	Alaska Aerospace Corporation	AK	Commercial	Orbital & Suborbital

Finally, other large IT and STEM companies, such as Apple, are expanding and searching for new locations as well (Liedtke, 2018). The question is: ***Can Salisbury and Wicomico County meet the demands of large IT and STEM companies?***

We've Got the Power

A large data center or supercomputer cluster typically demands about 20 megawatts (MW) of electrical power, which can amount to 172,800 megawatt hours (MWh) each year. Lucky for us, the two largest electric utilities on the Eastern Shore, Delmarva Power & Light, and the Choptank Electric Cooperative, distributed approximately 8,339,670 MWh in 2016, and met peak demands exceeding 4,000 MW:

Table 3. Energy Use on the Eastern Shore (US EIA 2016)

Year	Utility Name	Peak Demand Summer (MW)	Peak Demand Winter (MW)	Total Disposition (MWh)
2016	Delmarva Power	4,068.0	3,412.0	7,283,072
	Choptank Electric	256.5	241.3	1,056,598
2015	Delmarva Power	3,810.0	4,068.0	7,206,381
	Choptank Electric	235.4	304.7	1,076,204
2014	Delmarva Power	3,848.0	3,834.0	6,938,954
	Choptank Electric	235.0	284.0	1,058,589

In addition, while many high voltage lines in Wicomico County can carry up to 138 kilovolts (kV), the Pennsylvania-New Jersey-Maryland (PJM) Interconnection, which controls delivery of power throughout Maryland, expects to upgrade these lines to 230kV lines within the next 15 years through their Regional Transmission Expansion Planning (RTEP) (Maryland DNR, 2014):

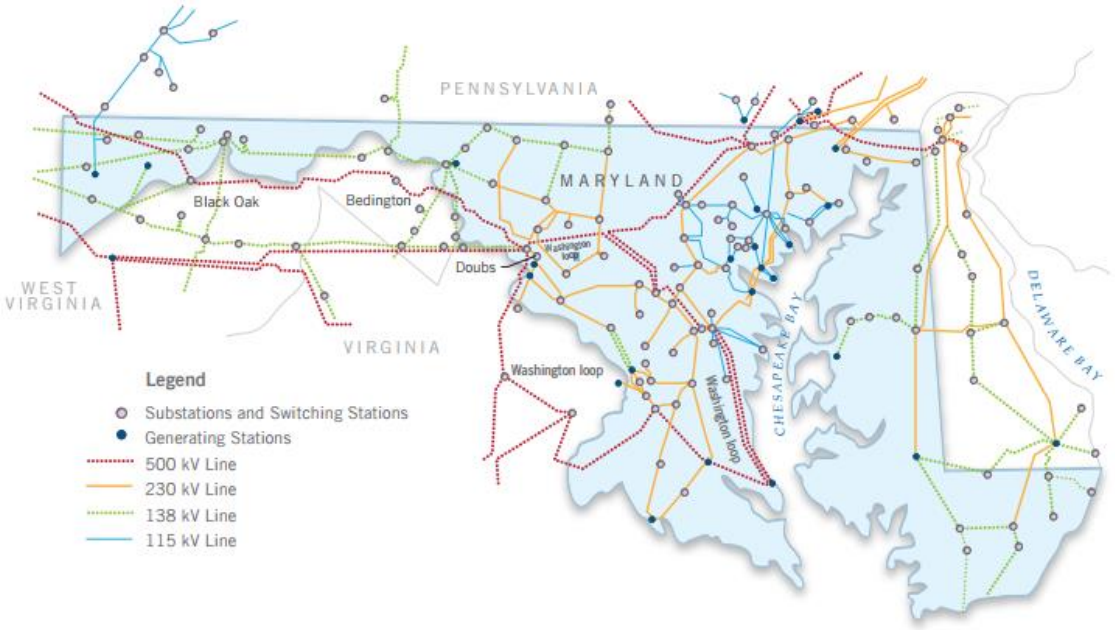


Figure 2. Transmission line map (Maryland DNR, 2014)

Can You Hear Me Now?

Each year since 1990, the demand for connectivity by businesses, large and small, has increased exponentially, due to electronic mail; point-of-sale (POS) systems; cloud-based security systems; Internet marketing; etc. However, while many companies only transmit a few megabytes (MB) of data each day, most STEM and IT companies routinely send and receive large amounts of data every minute, and the largest tech companies need a pipeline that can handle transmission rates of over one gigabit per second (Gbps). The capacity of these pipelines is known as bandwidth, and thanks to the Maryland Broadband Cooperative (MDBC), we can meet the connectivity demands of these companies. The MBDC offers data transmission rates of up to 100 Gbps (the best bandwidth commercially available), on lines that connect the I-95 corridor to Wallops Island, through Salisbury (MDBC, 2017):

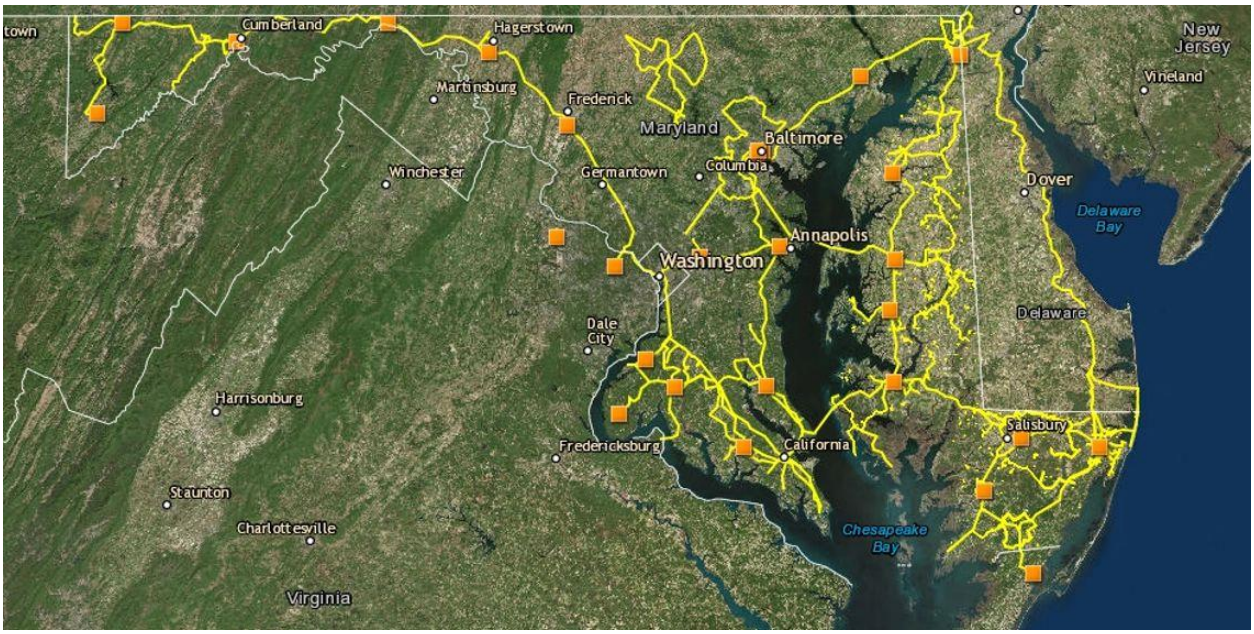


Figure 3. MDBC Coverage Map

Space Available

One reason Amazon started looking for places outside of Seattle was space. Tech areas, such as Seattle and Silicon Valley, are running out of room, and housing prices in these areas are increasing the cost of living beyond the ability of some companies to compensate their employees:

Table 4. Cost of Living. National Average = 100. (Sperling's, 2018; Data USA, 2018)

City	Overall Score	Housing Score	Food Score	Utilities Score
Salisbury	94.3	74	111.5	104.6
Dulles Town Center, VA	137.6	207.2	113.9	106.8
Rockville, MD	150.7	247.5	115.1	117.2
Washington, D.C.	158.5	274	110.4	105.8
Seattle, WA	176.5	314.5	110.2	94
San Jose, CA	222.2	454.6	120.4	127.5

While these companies are willing to pay top dollar for the best, they are also watching their bottom line. One way these companies can reduce costs is by outsourcing. However, IT and STEM development are not simple manufacturing jobs, and due to security and intellectual property laws, much of this work must remain in the United States. Luckily, not only is the cost of living in Salisbury and Wicomico County below the national average, but we have plenty of commercial space available. Besides the 166,000 square-foot former Labinal Power Systems building on Glen Avenue, there are over a dozen properties in the county with over 10,000 square-feet of space available, ready to reopen almost immediately:

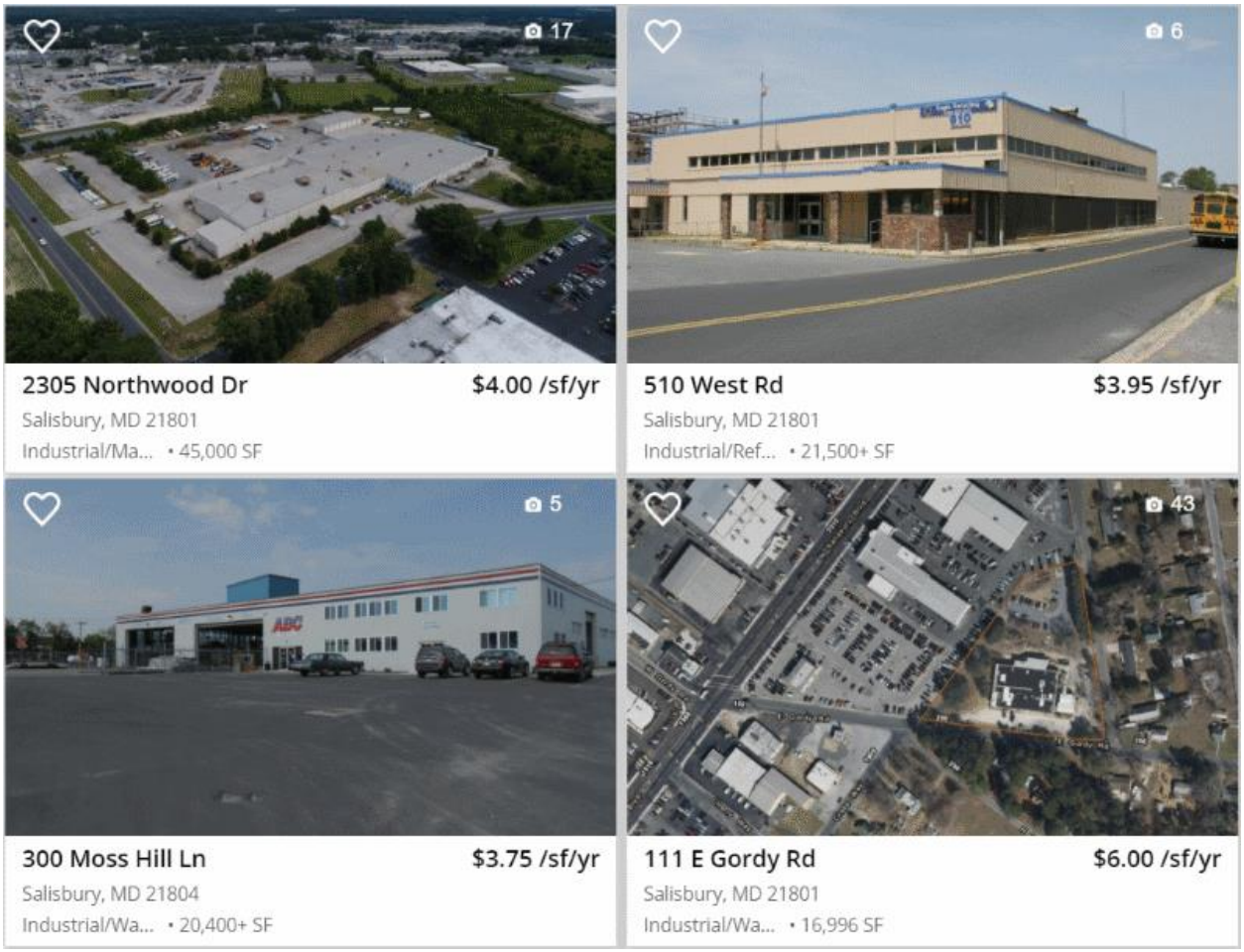


Figure 4. Examples of Available Office and Industrial Spaces in Salisbury over 10,000 sq. ft.

In addition, the commitment to economic development and "reducing barriers to further investment" (Day, 2012), by city and county leaders, means that new and relocating IT and STEM companies should be able to get started right away.
So, what is the problem?

Help Wanted

The main impediment to Salisbury-Wicomico 2.0 is people. When it comes to IT, we do not have the people; we do not grow the people; we do not attract the people; and we do not retain the people. These statements are not meant to be disparaging; our area has just never focused on IT or STEM. However, each of these claims deserve discussion:

- **We do not have the people:** Unlike Maryland's I-95 corridor, we do not have a large "tech class," comprised of professionals working in IT or STEM fields. Our major industries are government; health care; education; and manufacturing:

Table 5. Major Employers in Wicomico County (MD DLLR, 2017 & MD DOC, 2017)

Company	Employees	Product or Service	Industry
Local Government	4,944	Government services	Government
Peninsula Regional Medical Center (PRMC)	2,900	Medical services	Health care
State Government	2,710	Government services	Government
Salisbury University (SU)	1,790	Higher education	Education
Perdue Farms	1,500	HQ / poultry processing	Manufacturing
Walmart / Sam's Club	750	Consumer goods	Retail trade
Jubilant Cadista Pharmaceuticals	540	Generic pharmaceutical preparations	Manufacturing
Wor-Wic Community College	450	Higher education	Education
Genesis HealthCare / Salisbury Rehabilitation and Nursing Center	340	Nursing care	Health care
Delmarva Power & Light (DP&L)	300	Energy products & services	Utilities
Federal Government	280	Government services	Government
K&L Microwave	265	Electronics assembly	Manufacturing
Dove Pointe	250	Services for persons with disabilities	Other services

Company	Employees	Product or Service	Industry
SHORE UP!	250	Community development & social services	Other services
Three Lower Counties (TLC)	250	Social Services	Health care
Barrett Business Services Inc. (BBSI)	250	Staffing services	Administrative services

- **We do not grow the people:** While we have excellent programs at all levels of education (e.g., STEM Saturdays, etc.), the primary focus of our local colleges and universities has never been IT or STEM. Our schools only offer general degrees in computer science, as opposed to other schools in the University of Maryland system, which offer hundreds of IT courses, as well as dozens of degrees in disciplines ranging from bioinformatics to systems engineering. This does not mean the quality of instruction of our schools is better or worse than schools across the bridge; it just means that there is more demand for graduates in those fields along the I-95 corridor. However, it also means that local graduates may be hard-pressed to compete for specialized work within the IT and STEM industries, especially for jobs that require a post-graduate degree:

Table 6. Comparison of IT Offerings by Local and USM Schools

School	IT Offerings (2017)
Salisbury University (SU)	Mathematics with Concentration in Computer Science (BS)
University of Maryland Baltimore County (UMBC)	Bioinformatics and Computational Biology (BS), Biotechnology (MS), Business Technology Administration (BA), Computer Engineering (BS, MS, PhD), Computer Science (BS, MS, PhD), Cybersecurity (MS), Data Science (MS), Geographic Information Systems (MS), Health Information Technology (MS), Human-Centered Computing (MS, PhD), Information Systems (BS, MS, PhD), Instructional Systems Development (MA), Systems Engineering (MS)
University of Maryland Eastern Shore (UMES)	Computer Science (BS), Computer Science with Business Focus (BS), Applied Computer Science (MS)

School	IT Offerings (2017)
University of Maryland University College (UMUC)	Biotechnology: Bioinformatics (MS), Cloud Computing Architecture (MS), Computer Networks and Cybersecurity (BS), Computer Science (BS), Cybersecurity Management and Policy (BS, MS), Cybersecurity Technology (MS), Data Analytics (MS), Digital Media and Web Technology (BS), Information Systems Management (BS), IT: Database Systems Technology (MS), IT: Homeland Security Management (MS), IT: Informatics (MS), IT: Information Assurance (MS), IT: Project Management (MS), IT: Software Engineering (MS), IT: Systems Engineering (MS), IT: Telecommunications Management (MS), Management: Information Systems and Services (MS), Software Development and Security (BS)
Wor-Wic Community College	Computer & Network Support Technology Concentration (AAS), Web Development Concentration (AAS)

- **We do not attract or retain people:** As shown by Table 5, there is little demand for large numbers of IT professionals in our area. In addition, local STEM-intensive employers find it hard to keep the specialists they have. I recall a conversation with a former Wallops Island human-resources assistant, who stated that many IT recruits, unable to adapt to the "Slower-Lower" lifestyle, look for employment across the bridge once they gain a year of experience. Another Wallops Island employee discussed the "boom" of techs looking for work following the end of the Space Shuttle program, and the "bust," once Space X and other companies started hiring these specialists to work at other locations.

Solutions and Recommendations

While an obvious proposal would be for local colleges and universities to offer more IT courses and degrees, the development and approval process for those classes will take time, and adding courses is not enough. The lack of roots and lack of work means that we will not be able to retain graduates, regardless of the number of classes the schools provide, resulting in a "brain drain," which will benefit other towns.

However, there are steps that we can take to "grow" and "futureproof" our talent pipeline, which in turn can attract jobs, and create the demand for more courses:

- **Recognize K through 12 STEM Excellence** - Each month, we can ask the Wicomico County Public Schools to submit a list of students to be recognized by the city and county councils for STEM excellence. The councils can enter the names of those students into the minutes, and at the end of the year, we can award a Mayor's or Executive's Award for K through 12 achievements, as well as a STEM leadership award for educators. Along with the Wicomico County Board of Education's (WCBOE) STEM Challenges and STEM Saturdays (https://www.wcboe.org/instruction/programs/stem_program) (Boggs, 2018; WCPS, 2016 & 2017), this will further encourage participation in STEM activities at an early age, and the winners can state that they were recognized for STEM excellence by their local officials on resumes and college applications.
- **Recognize STEM Supporters** - We can recognize local businesses that contribute money or materials to STEM activities, such as those that contributed to the WCBOE STEM Lego League tournament (WCPS, 2017). By encouraging donations, we can increase the frequency of the WCBOE STEM Saturdays, and incorporate more activities, such as Microsoft's STEM lessons (https://www.microsoft.com/en-us/education/education-workshop/default.aspx). Participating businesses can advertise their support by displaying stickers or logos, such as "I Support SBY STEM", which will also act as a brand and a marketing statement for the city and county.
- **Expedite Scholarships and Internships** - There are hundreds of STEM scholarships and internships available to high school and college students (Paul, 2018a). For example, the U.S. Department of Defense offers dozens of STEM-related programs, internships, and scholarships for all levels of education (http://www.dodstem.us/stem-programs/), and SU has a list at http://www.salisbury.edu/henson/stem/Internships_Scholarships_Fellowships.html. Many of these internships require endorsements and references; the city and county can assist in providing these to local applicants. In addition, the city and county can establish their own scholarships, similar to the Wicomico Economic Impact Scholarship (WEIS), but focused on

encouraging students to pursue IT and STEM associate degrees or certifications (Wor-Wic, 2016).

- **Incentivize Gale Courses** - Gale Courses (https://education.gale.com/l-sali50380/) are online, instructor-led courses that cover multiple subjects, including multimedia design; computer programming; and network and security. Through a contract with Cengage, these courses, which can cost thousands of dollars at schools across the bridge, are offered for free by the Wicomico County Public Library (Cengage, 2018). We can encourage participation in these courses by offering incentives. At the high school level, we can allow students to get credit for completing IT-related Gale Courses on their own time. For adults interested in IT, we can offer reduced rent, similar to the terms of tenancy at the Rivers Edge Apartments and Studio for the Arts (Salisbury Independent, 2015), provided they are actively pursuing an IT certification. We can also develop "buddy" support systems, similar to the environment provided by SU's Living Learning Communities (http://www.salisbury.edu/housing/LLC/), to encourage course completion (Paul, 2018b). By the way, completing all the courses and exams in the CompTIA track (A+, Network+, and Security+) may take up to two years. However, these certifications are in demand, and enough qualified technicians can attract tech companies.

Table 7. Top IT Entry-Level Certifications (Global Knowledge, 2018)

Certification	Average Salary (2017)
CompTIA A+ Technician (Gale Course available)	**$77,053**
CompTIA Network+ (Gale Course available)	**$79,435**
Cisco Certified Network Associate (CCNA)	$80,873
CompTIA Security+ (Gale Course available)	**$87,666**
Microsoft Certified Solutions Associate (MCSA) - Windows Server	$89,941
Information Technology Infrastructure Library (ITIL) v3 Foundation	$93,638
Citrix Certified Associate - Virtualization (CCA-V)	$96,231
Citrix Certified Associate - Networking (CCA-N)	$98,583
Systems Security Certified Practitioner (SSCP)	$103,910
Amazon Web Services (AWS) Certified Solutions Architect - Associate	$119,085

- **Attract Military Retirees** - Some of the world's top aerospace and engineering; cybersecurity; and medical systems are being used or developed at military bases throughout Maryland, as well as Dover Air

Force Base, Northern Virginia and Norfolk. Many service members departing those bases have intimate knowledge of these systems. In addition, many of these military retirees will leave the service with active security clearances, as well as pensions and benefits. Finally, the federal government and the state of Maryland offer tax incentives to employers hiring veterans (VA, 2018 & MD DOC, 2018). This combination of experience, clearances, and benefits make military retirees, especially those from Delaware; Maryland; and Virginia, very attractive to high-tech companies. However, certain regulations, such as the recently-reinstated Department of Defense's 180-day "revolving door" rule, may cause some of these veterans to depart the area (Salomon, 2017). We can attend the monthly transition briefs at nearby bases (https://www.dodtap.mil/), and ask these service members to consider relocating to Salisbury and Wicomico County instead, promoting our area's low cost of living; proximity to the above bases; and other charms. If we can get enough of them to stay, we can create a labor pool that attracts high-tech companies to our area.

The Author's Opinion of the Eastern Shore

I retired from the U.S. Marine Corps in 2009, and drove cross-country to relocate to the Eastern Shore. I had been visiting Salisbury since 1992, and the combination of friends; low cost of living; and beautiful beaches, made the decision to move here easy. What I had not counted on was being able to use so many of my benefits while living here, from flying to Europe from Dover AFB; to purchasing a home; to pursuing my Master's degree; and more. While I could go across the bridge and make over $100,000 a year as a software engineer, I prefer the "Slower-Lower" to the hectic Beltway. I know that many of my peers would find the Shore attractive as well, especially those with families.

- **Attract STEM Events** - Every year, hundreds of STEM and IT-related conferences, expos, and summits are held throughout the United States (e.g., USA Science and Engineering Festival at https://usasciencefestival.org/, etc.). We can reach out to organizers of these conventions, and ask them to consider using the Civic Center and other local facilities to host their events. Some, such as the Maryland STEM Festival (https://marylandstemfestival.org/host/), actively search for hosts within the state.
- **Request Funding** - While there is less money for government grants this year, the National Science Foundation's (NSF) 2018 budget is still over $6 billion, and they expect to hand out over 8000 new research grants (https://www.nsf.gov/about/budget/fy2018/index.jsp). SU has applied and received funding from the NSF before (Salisbury University, 2018), but the NSF grants money to all types of organizations, from individuals; to K-12 programs; to small businesses…as long as it is related to STEM (https://www.nsf.gov/funding/). While nothing that we have suggested so far requires a large amount of funds, we can look for opportunities to

expand local STEM work and research, and request funding from the NSF, and other sources, to support these endeavors.

Finally, the most important action Salisbury and Wicomico County can take is to establish an "advocacy group." The purpose of these advocates is to "sell" Salisbury:

"Hi, we're Salisbury! We've got power; we've got bandwidth; we've got space; we're cheap; and if you tell me what you need people-wise, I will find a local to fill that job."

To fulfill the last part of that pitch, the advocacy group can implement the suggestions listed above, such as soliciting small business STEM support; attending military transition briefs; attracting conferences and conventions; etc. The group can also track metrics as well, such as the number of students recognized by the council; status of Gale Course students, etc. In addition, the advocates can surveil tech companies, and be ready to approach them if an opportunity arises to bring their business to the Shore. The team, which should include representatives from utility companies; the MDBC; veteran service officers; as well as local officials, educators, and business leaders, should meet on a regular basis, to set goals and to ensure progress is being made.

2014's Eastern Shore Global Entrepreneurship Week Revisited

The suggestions above are not exhaustive. We expect the advocacy group will reach out to local STEM leaders, such as David Harner and Gretchen Boggs of the WCBOE, and SU STEM Coordinator Kristen Paul for more recommendations. In addition, other people have spoken in support of attracting technology companies and jobs to the Eastern Shore. One of these advocates is Dr. Memo Diriker, founding director of SU's Business Economic and Community Outreach Network (BEACON). Check out his speech, "Eastern Shore: Becoming a High Tech/High Impact Region," at the Salisbury Area Chamber of Commerce Hall on Nov 18, 2014, at https://soundcloud.com/hotdesksmd/eastern-shore-global-entrepreneurship-week-2014-a

Lastly, the city and county must identify what they are willing to offer companies interested in Salisbury and Wicomico County, such as tax breaks, etc. Offering too little or nothing at all may cause these companies to look elsewhere. Reasonable incentives, coupled with our IT infrastructure and cost of living, can make it easy for companies to say, "Yes," to the Shore.

Conclusion

Building Salisbury-Wicomico 2.0 will take time, as well as significant effort and cooperation. However, it can be done. The largest and most expensive pieces, such as the power grid; fiber lines; and buildings, are already in place. The only thing needed is a focused effort, similar to the one that has made Third Friday and other local endeavors so successful. If we come together to support this initiative in the same way, there is no doubt that within several years' time, the vision of a high-tech Eastern Shore will become a reality.

References

Amazon. (2018, January 18). Amazon announces candidate cities for HQ2. Retrieved from https://www.amazon.com/b?node=17044620011

Board of Trustees of the University of Illinois. (2013, March 28). Blue Waters supercomputer now open for 24/7 science! [Photograph]. Retrieved from http://www.ncsa.illinois.edu/News/BWopen/

Boggs, G. (2018). STEM Initiatives - Wicomico County Public Schools. Retrieved from https://www.wcboe.org/instruction/programs/stem_program

Cengage Learning. (2018). Eastern Shore Public Libraries: Gale courses. Retrieved from https://education.gale.com/l-sali50380/

CityFeet. (2018). Salisbury commercial real estate. Retrieved from http://www.cityfeet.com/cont/salisbury-md/commercial-real-estate-for-lease

Data USA. (2018). Search, map, compare, and download U.S. data. Retrieved from https://datausa.io/

Davenport, C., & Gregg, A. (2017, September 18). Northrop Grumman to buy aerospace manufacturer Orbital ATK. Washington Post. Retrieved from https://www.washingtonpost.com/news/the-switch/wp/2017/09/18/northrop-grumman-to-buy-rocket-maker-orbital-atk/?utm_term=.5cc71f767931

Day, J. (2012). Our vision for Salisbury: Capital of the Eastern Shore. Retrieved from https://jacobday.com/wp-content/uploads/2013/02/Our-Vision-for-Salisbury-Jake-Day.pdf

Department of Veterans Affairs. (2018). Veterans opportunity to work for employers. Retrieved from https://www.benefits.va.gov/VOW/for-employers.asp

Dunn, J. (2017, May 2). Here's where Amazon's profits are coming from (Hint: it's not from online shopping). Retrieved from http://www.businessinsider.com/amazon-web-services-cloud-online-shopping-profits-chart-2017-5

Global Knowledge. (2018). 2017 IT skills and salary survey report. Retrieved from https://www.globalknowledge.com/us-en/content/salary-report/it-skills-and-salary-report/

Greenwood, M. (2017, October 23). Breaking Down Toronto's 190-Page Amazon HQ2 Bid. Retrieved from https://techvibes.com/2017/10/23/breaking-down-torontos-190-page-amazon-hq2-bid

Leveque, P. (2017, March 6). Spaceports: A brief primer. Retrieved from https://www.dentons.com/en/insights/alerts/2017/march/6/spaceports-a-brief-primer

Liedtke, M. (2018, January 17). Apple banks on tax break to build 2nd campus, hire 20,000. Retrieved from http://www.chicagotribune.com/business/ct-biz-apple-second-campus-20180117-story.html

Maryland Broadband Cooperative. (2017). Services. Retrieved from https://mdbc.us/services-1

Maryland Department of Commerce. (2017, August 16). Brief economic facts: Wicomico County. Retrieved from http://commerce.maryland.gov/Documents/ResearchDocument/MajorEmployersInWicomicoCounty.pdf

Maryland Department of Commerce. (2018). Hire our veterans tax credit. Retrieved from http://commerce.maryland.gov/fund/programs-for-businesses/hire-our-veterans-tax-credit

Maryland Department of Labor, Licensing, and Regulation. (2017). Wicomico County major employer lists. Retrieved January 20, 2018, from https://www.dllr.state.md.us/lmi/emplists/wicomico.shtml

Maryland Department of Natural Resources. (2014). Electricity in Maryland Fact Book. Retrieved from http://dnr.maryland.gov/pprp/Documents/Electricity_in_MD_Fact_Book.pdf

Paul, K. (2018a). Salisbury University living learning communities. Retrieved from http://www.salisbury.edu/housing/LLC/

Paul, K. (2018b). Salisbury University STEM internships, scholarships, and fellowships. Retrieved from http://www.salisbury.edu/henson/stem/Internships_Scholarships_Fellowships.html

Salisbury Independent. (2015, October 6). New day for West Side with Rivers Edge opening. Retrieved from https://salisburyindependent.net/salisbury-news/new-day-for-west-side-with-rivers-edge-apartments-opening/

Salisbury University. (2018). PATHWAYS undergraduate research. Retrieved from http://www.salisbury.edu/pathways/

Salomon, R. (2017, March 7). 180-day civilian hiring restriction reinstated for military retirees. Retrieved from http://www.afpc.af.mil/News/Article-Display/Article/1105235/180-day-civilian-hiring-restriction-reinstated-for-military-retirees/

Sperling's. (2018). Cost of living comparison. Retrieved from https://www.bestplaces.net/cost-of-living/

Swartz, J. (2017, June 30). U.S. needs more STEM jobs to compete: Study. USA Today. Retrieved from https://www.usatoday.com/story/tech/talkingtech/2017/06/30/u-s-needs-more-stem-jobs-compete-study/442801001/

U.S. Bureau of Labor Statistics. (2018, February 22). Salisbury, MD economy at a glance. Retrieved from https://www.bls.gov/eag/eag.md_salisbury_msa.htm

U.S. Census Bureau. (2017). QuickFacts: Salisbury, Maryland. Retrieved from https://www.census.gov/quickfacts/fact/table/salisburycitymaryland/POP060210

U.S. Department of Defense. (2018). DoD Transition Assistance Program. Retrieved from https://www.dodtap.mil/

U.S. Energy Information Administration. (2016). Annual electric power industry report (EIA-861). Retrieved from https://www.eia.gov/electricity/data/eia861/index.html

Wicomico County Public Schools. (2016, June 16). June 7, 2016 awards & recognitions night. Retrieved from https://www.wcboe.org/cms/one.aspx?portalId=3063562&pageId=30251099

Wicomico County Public Schools. (2017, June 9). June 6, 2017 Board of Education awards & recognitions night. Retrieved from https://www.wcboe.org/news/what_s_new/june_6__2017_board_of_education_awards___recogniti

Wicomico County Public Schools. (2017, March 2). Honorees from the Feb. 28 board awards & recognitions night. Retrieved from https://www.wcboe.org/cms/one.aspx?portalId=3063562&pageId=31562880

Wicomico County Public Schools. (2017, November 21). Congratulations to honorees from November 2017 awards night. Retrieved from https://www.wcboe.org/cms/one.aspx?portalId=3063562&pageId=33050978

Williamson, K. (2017, May 10). NCSA'S Blue Waters project provides $1.08 billion direct return to Illinois' economy. Retrieved from http://www.ncsa.illinois.edu/news/story/ncsas_blue_waters_project_provides_1.08_billion_direct_return_to_illinois_e

Wingfield, N., & Cohen, P. (2017, September 7). Amazon plans second headquarters, opening a bidding war among cities. New York Times. Retrieved from https://www.nytimes.com/2017/09/07/technology/amazon-headquarters-north-america.html

Wor-Wic Community College. (2016, June). Wicomico economic impact scholarship. Retrieved from https://worwic.academicworks.com/opportunities/495

Copyright © 2017-2018 by Robert Garcia. All rights reserved.

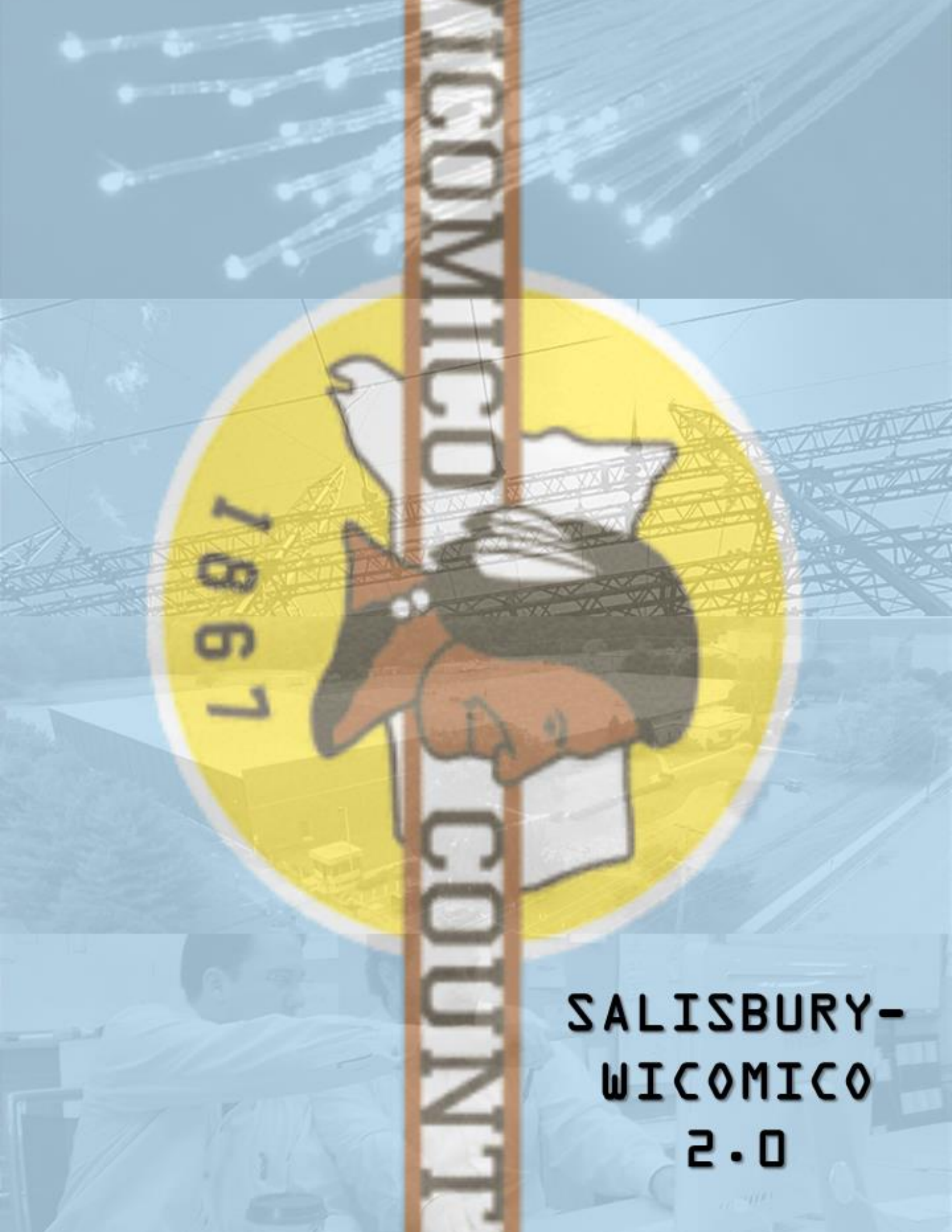
Front Cover Images:

- "Defense Secretary Ash Carter, center, tours Amazon's headquarters in Seattle," By Navy Petty Officer 1st Class Tim D. Godbee [Public domain], via Wikimedia Commons
- "Fairing installation for Orbital CRS-3," by NASA/Wallops Flight Facility/Patrick Black [Public domain], via Wikimedia Commons
- "Supercomputers" by Board of Trustees of the University of Illinois. [Digital Image] (2013, March 28). Blue Waters supercomputer now open for 24/7 science!. Retrieved from http://www.ncsa.illinois.edu/News/BWopen/

Rear Cover Images:

- "Fiber optic strands," by BigRiz (http://en.wikipedia.org/wiki/File:Fibreoptic.jpg) [CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons
- "Power Lines" by Butler, T. A. [Digital Image] (2017, January 30). Maryland's renewable energy portfolio standard: An insider's perspective. Retrieved from http://news.maryland.gov/mea/2017/01/30/marylands-renewable-energy-portfolio-standard-an-insiders-perspective-what-you-should-know/
- "600 Glen Ave," by Unknown [Digital Image]. (2016, March 18). Retrieved from https://svn.com/find-properties/?propertyId=188175-lease
- "Paired programming," by Lisamarie Babik (Ted & Ian Uploaded by Edward) [CC BY 2.0 (http://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons

This page intentionally left blank



SALISBURY-WICOMICO 2.0