CENTRAL NEW YORK

DAY 1

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DON'T FOLLOW, LEAD.

Amazon has the potential to disrupt the real-estate focused, mega-city chokehold on corporate headquarters locations the same way they have disrupted bookselling, retail, distribution, film production, unmanned systems, and the grocery business. Central New York is the exact region to site and grow.

Central New York boasts Creativity.

Innovation.

Higher Education.

A remarkable quality of life.

A potential for $23B in operational savings. And an almost limitless supply of quality, affordable housing that its employees can enjoy within a 20 minute commute so that they can spend more time enjoying their families or disrupting Amazon's next target market and less time polluting the planet during tediously long commutes that serve no social or corporate end.

YOU DON'T NEED GRANTS
YOU NEED EFFICIENCIES!

A heavy focus on available incentives can create a short view approach to decision making. Incentives, no matter how robust or enticing, run out and what you are left with is the market realities of the location selected.

Given trending markets Amazon would be well served to follow their "Day 1" philosophy of not doing what's always been done, and site HQ2 in a second-tier metro. Amazon has the opportunity to demonstrate that second-tier metro areas have the capacity to attract talent and nurture large companies like Amazon – that choosing such locations can be very productive for the company while relieving the nation of the burden of trying to accommodate growth in metros that have reached their saturation point. This response will convey the strong market case for siting Amazon HQ2 in the Central New York market.

OH, AND THERE WILL STILL BE SIGNIFICANT INCENTIVES.

COMPARISON OF LABOR AND REAL ESTATE COSTS YEAR 1 ESTIMATE

Labor	# Employees	Syracuse, NY	Seattle	Boston	Pittsburgh	Denver
Management	500	$55,525,600	$68,078,400	$74,058,400	$62,223,200	$71,188,000
Admin Support	400	$21,939,840	$24,693,760	$25,866,880	$21,648,640	$22,289,280
Customer Service	1300	$48,266,400	$52,079,040	$58,136,000	$46,022,080	$48,158,240
Accountants	125	$8,764,60	$9,388,600	$10,657,40	$8,977,800	$ 10,043,800
Legal	125	$11,411,400	$17,277,000	$21,335,600	$17,167,800	$18,127,200
Programmers	2550	$226,427,760	$336,804,00	$275,118,480	$222,290,640	$269,814,480
Total Labor	**5000**	**$372,335,600**	**$508,320,800**	**$465,172,760**	**$378,330,160**	**$439,621,000**
Relative Annual Savings if Located in Syracuse, NY	-	-	$135,985,200	$92,837,160	$5,994,560	$67,285,400
Class A Office Real Estate	500,000	$9,245,000.00	$21,960,000.0	$30,160,000.00	$12,785,000.00	$17,500,000.00
Relative Annual Savings if Located in Syracuse, NY	-	-	$12,715,000.00	$20,915,000.00	$3,540,000.00	$8,255,000.00
Total Annual Savings if Located in Syracuse, NY			**$148,700,200.00**	**$113,752,160.00**	**$9,534,560.00**	**$75,540,400.00**

$23B!

It is projected that as employment ramps to full operation over the course of the first 10 years Amazon will experience an $8B comparative operational savings over the current Seattle HQ. At full operations, Amazon will realize a $1.4B year over year savings[1]. Compared to metros like Denver and Boston, over 20 years the potential to add $11.7 - $23B to Amazon's bottom line exists with the location of Amazon HQ2 here. Compared to the closest competitive second tier metro, Pittsburgh, Central New York's compared operational savings over 20 years is still $1.4B. These operational savings result from a comparative lower cost of labor and real estate in the Central New York market. The Cost of Living Index is 50% less than that of Seattle or Boston and 5% less than Pittsburgh. Paired with an exceptional quality of life (more on that later), and the magnetic draw of Amazon, this is an ideal environment for talent attraction and retention for HQ2.

As it relates to the labor pool, the Region[2] has a population of 1,076,244 people and a civilian workforce of 540,316. In a 100 mile radius there are 43 universities and colleges offering 4 year degrees with over 325,553 students enrolled. These include world renowned institutions such as Cornell University, Rochester Institute of Technology, Rensselaer Polytechnic Institute and Syracuse University, as well as one of the highest rated State University Systems in the country. On a percentage basis there is a significantly higher ratio of population to enrolled students than can be found in many major metros. In 2016 there were over 3,000 degrees issued for computer science, information studies, or computer engineering from just the top 10 of the 43 institutions in the region. Looking out 300 miles Amazon would have access to drawing talent from Harvard, Yale, Princeton, Penn State, University of Toronto, and Carnegie-Mellon. A rich and robust talent pool exists within close proximity.

[1] Comparison of median wages for industry categories between metros (see chart in workforce section pg. 31)
[2] Syracuse MSA, Utica/Rome MSA, Cortland and Cayuga County

HOW ABOUT FREE?
FREE IS GOOD...

Alright, in truth a net zero energy campus isn't really free but it can provide a 75% reduction in costs, not to mention having a sustainable world-class show case of how new development should be done. As part of this proposal, the regions' expertise in energy efficiency and planning will enable Amazon to create a world-class, net zero energy and smart urban campus. The proposed sites are ready for development, with many vacant parcels to facilitate planning from the outset to create a vibrant, walkable, and connected district within which Amazon's new headquarters will be seamlessly integrated.

By working with National Grid, a recognized leader in Energy Efficiency, national experts in engineering like O'Brien & Gere, and the regions outstanding academic institutions the HQ2 campus can be built from the ground up with ideal building efficiencies and appropriately sized renewables. Similar projects such as the IBM Data Center located on Syracuse University's campus (one of the most efficient data centers in the world) demonstrate that a net zero campus of this magnitude is achievable here. The cooler climate, access to 25% of the world's fresh water, and the expertise in the region make this a realistic feat.

Amazon's HQ2 will serve as a living laboratory in which highly integrated systems addressing energy, mobility, water, waste, and quality of life issues will be deployed to provide a sustainable, efficient and livable environment in which Amazon and its employees, customers, and stakeholders can thrive for decades to come[3].

[3] See Site Info Document for more detail

UAS CENTRAL

Amazon's development, testing, and use of Unmanned Aerial Systems (UAS) for product deliveries are revolutionizing e-commerce. Amazon can fully develop this technology and ensure the safe integration of Prime Air delivery drones into the national air space by utilizing the operational, fully funded, and scheduled for completion in 2018, UTM Corridor. The 50-mile UTM corridor between Syracuse Hancock International Airport and Griffiss International Airport will enable the first, large-scale "Beyond Visual Line of Site" Prime Air package delivery in the U.S. By siting HQ2 here, Amazon would be granted a private airspace within the UTM test corridor for Amazon-only testing and operations. Additionally, Amazon would gain access to shared data from the implementation of UAS Traffic Management and UAS Standardized Testing and Rating Systems[4]. Coupled with the construction of Prime Air delivery facilities within this corridor, and in alignment with NASA and the FAA—partners in this effort, Amazon could operationalize its first full delivery test bed ecosystem in the United States.

Just as UAS delivery will revolutionize e-commerce, innovative advances in freight and personal transit will also allow for the continued disruption of traditional market delivery and commute/travel times. The advent of the Hyperloop, while still in a nascent stage, is one such innovation. In order for this technology to be deployed there is significant testing that needs to be conducted. Amazon has demonstrated an intelligence for deploying new technologies that is unparalleled. If selected for HQ2, Central New York proposes constructing a Hyperloop connecting Syracuse and Utica, a distance of roughly 50 miles. This Hyperloop will provide Amazon with a fertile test bed for freight movement and commuter traffic between locations.

No other location in North America exists with a fully instrumented UTM corridor. It will also be challenging if not impossible to develop a Hyperloop that connects into the urban centers in other locations due to lack of accessible development sites imbedded in urban centers. The UTM corridor and the Hyperloop would create a technology exploration corridor to catalyze Amazon's innovative solutions.

4 See Appendix A – Project U-Safe Narrative

Photo Credit: NASA

THE MARKET REVIEW

The bottom line is there are many positive market forces and competitive advantages for Amazon to site HQ2 in Central New York: a $23B operational savings, the potential for additional savings and prospect of being a corporate world leader in sustainability with a first class net zero energy campus, and the advantage of having an innovation corridor unlike anything else in the world to continue to advance Amazon's dominance in the consumer marketplace and beyond. All of these reasons make a compelling case for the selection of the Central New York market for the location of Amazon HQ2. There is one more distinguishing factor that creates a truly unique and remarkable opportunity for Amazon in siting its headquarters here.

"THE INTERSECTION OF URGENT NEED AND LASTING IMPACT..."

– JEFF BEZOS

As previously stated Amazon is one of the great market disruptors in all of history. By locating Amazon HQ2 in Central New York, Amazon would have the opportunity for a different kind of disruption. One that would meet the urgent needs of the region while creating a template for solving one of the most persistent challenges facing our increasingly divided nation, and the growing inequality in the world.

Syracuse has the highest rate of concentrated poverty within Black and Latino communities in the United States[5]. Historically, communities have too often tried to tackle these challenges with social programs and policies alone – failing to recognize that poverty is fundamentally an economic problem that requires economic solutions. Today's civic and government leaders in the region, however, recognize that shared prosperity starts with economic growth. For individuals to rise out of poverty they need opportunity as well as services.

This was true nearly 200 years ago, when Syracuse's ascent to prosperity and national prominence occurred at breakneck speed, spurred by once in a lifetime investments and projects like the Erie Canal. Conversely, the region's current challenges of poverty and slow economic growth have come via the gradual erosion of key industry sectors, coupled with the persistent and compounding challenges related to racial segregation and uneven opportunity. Siting HQ2 in the region

would have that once in a lifetime effect, spurring growth and investment in Syracuse not seen since the construction of the Erie Canal in the 1820s. This is the first, and most fundamental, strategy for fostering shared prosperity. However, economic growth does not necessarily translate into economic opportunity. Creating truly inclusive economic prosperity requires the intentional design of programs, policies and systems at the outset of economic growth.

[5] Jargowsky, Paul A. The Architecture of Poverty. Camden: The Century Foundation, 2015

Central New York has already laid the foundation for economic inclusion by recognizing that economic opportunity is fundamentally connected to educational attainment. Two system innovations have helped ensure that students in the region have access to higher education. The "Say Yes to Education" fund provides a full scholarship to college for any Syracuse City School District graduate. Additionally Governor Cuomo and New York State created the Excelsior Scholarship Program providing full scholarships at SUNY Institutions for NYS residents. These unprecedented programs will bolster Amazon's talent recruitment and will provide pathways for individuals traditionally unable to access the necessary on ramps for jobs in the innovation economy. Central New York education and business leaders will work with Amazon to develop customized training and education programs in local high schools and colleges that align with current and emerging workforce needs. For more immediate workforce needs, Central New York leaders will fund the expansion of the employer-driven workforce programs that have been highly effective in bridging the gap between industry talent needs and un-and-underemployed workers. "Apprenticeship"-like programs will enable incumbent workers in the tech field to advance their skills and respond to the new demands of industry created by HQ2.

Beyond the direct job opportunities that come with HQ2, Amazon's mere presence will create profound growth in secondary markets. Regional leaders will enhance and expand programs designed to spur minority-women-and-locally-owned businesses – specifically inclusive equity and loan funds. Central New York will also will directly harness HQ2's presence by locating an international food hall adjacent to the headquarters. There local immigrants, refugees and other populations will have the opportunity to launch their food businesses while also receiving supports. Finally, Central New York leaders will work to ensure that the housing market surrounding HQ2 continues to revitalize – but in ways that are inclusive. Mixed-income rental housing projects and guaranteed mortgage programs for first time home buyers will ensure that the housing market becomes a national model for inclusive growth.

There are no silver bullets when it comes to addressing poverty. However, there can be no prosperity without economic growth. With a sound and intentional strategy, regional leadership, in partnership with Amazon's disruptive and innovative culture, will ensure residents from vulnerable communities have access to job opportunities and facilitated entrepreneurship. Local leaders will leverage existing resources like the Alliance for Economic Inclusion - a committee of community leaders charged with allocating $30M to strategic solutions/programs - and create new funding through social impact bonds and other instruments to drive innovative solutions to achieve inclusive prosperity.

A decade from now, Central New York leaders envision a community that has been transformed by the impact of HQ2, coupled with a large-scale, holistic approach to creating opportunity and equity within the region. No community in modern history will have ever been so bold and strategic about aligning economic development with economic inclusion. The result will be a dramatic shift in Central New York's rates of poverty and increased wealth among vulnerable populations. Central New York leaders are already being recognized for their innovation in this field, as evidenced by their partnership with the Brookings Institution Metro team to develop a new economic development framework that achieves "inclusive prosperity". Syracuse will partner with Brookings and other national entities to both advise and evaluate this work. This effort will provide a framework for communities around the globe to disrupt poverty and create true community prosperity by leveraging corporate investments and growth.

SYRACUSE IS THE SAFEST CITY
FROM NATURAL DISASTERS

3. Akron, OH

2. Cleveland, OH

1. Syracuse, NY

9. Denver, CO

8. Chicago, IL

10. Warren-Troy-Farmington Hills, MI

4. Buffalo, NY

7. Allentown, MD

5. Bethesda, MD

6. Dayton, OH

20 MINUTES TO WORK...
AND LESS THAN 5 HOURS FROM ALL NORTHEAST MAJOR METROS

The Central New York region is consistently ranked as one of the top 20 metros to live in for quality of life[6] despite its urban poverty challenges. With the 5th shortest average commute time of the top 100 metros, (21 minutes), and ranking 34th in cost of living, (residents spend less than 31% of income on housing expenses), it's no wonder that the region is growing rapidly among tech companies. CuseTechScene.com is a collaboration of some of these companies that are seeing success in attracting talent and keeping them once they are here.

It is less than a 5 hour drive to all of the Northeast Major Metros, less than 2 hours to the Adirondacks (the largest protected park area in the contiguous US at 6M acres), and located at the eastern gateway to the Finger Lakes (11 breathtaking lakes and one of the fastest growing wine regions). The proximity to some of the best outdoor recreation and outstanding urban centers make it a great place to call home. Additionally just 7 miles (or 10 minutes) north the Syracuse Hancock International Airport (SYR), currently undergoing a $50M facelift, provides reliable access to the world. Ranking 87 out of the 559 commercial airports in the US for passenger enplanements, SYR is known as the airport that never closes.

Boasting outstanding healthcare, education, and low crime rates, the quality of life, when taken with the low cost of living, makes Central New York one of the best places to live, and one of the most affordable.

[6] US World News Lists 2016 & 2017

ADDITIONAL INFO REQUESTED

INCENTIVES

If Amazon chooses to select a NY based site for HQ2 there will be a significant incentive package available in the form of grants, fully refundable tax credits, and significant infrastructure investments. There are multiple sites being proposed and it is anticipated that the State based incentives will be transferable to whichever location Amazon chooses. In addition to traditional state incentives, the Syracuse region demonstrated its ability to create big picture strategies with its Upstate Revitalization Initiative Plan (URI) and was successful in securing $500M to spur economic growth in the region. From the outset the region will put $100M of URI funds in play for this project. This would be an out of the gate offering (call it an ante if you will) and would be in addition to any other state programs and incentives that would be offered.

At the local level are many forms of tax abatement and investments offered by the municipalities. A payment in lieu of taxes (PILOT) program will provide an aggressive property tax abatement schedule. The standard schedule is a 10-15 year abatement that gradually ramps from 100% abatement down to 0%. Given the size and scale of the Amazon opportunity it is anticipated that the local Industrial Development Agencies would be open to a 25-30 year schedule. Additionally sales and use tax (8% savings on much of the project costs) and mortgage recording tax (1% savings on any permanent financing) associated with the project will be abated. IDA benefits are approved through an application to the local board. There are fees associated with applying for the benefits, but the region would work with Amazon to determine how to reinvest them into the community to bring people out of poverty and create inclusive growth.

NY State has a track record of significant investments in large scale projects. The siting of Global Foundries in Albany ($500M State investment) and the development of Solar City in Buffalo ($750M State investment) are two examples of NY partnering with companies to create jobs. Leveraging the State and Local opportunities a creative and innovative incentive package competitive with other states' sites that compliments the market reasons for a Central New York location of HQ2 will be readily available.

HOUSING

There are 426,705 housing units in Central New York with roughly 60% being owner occupied. The median home value is $120,380. In Syracuse alone there are almost ten thousand units that are vacant. This creates a tremendous opportunity for outside investment to revitalize the housing stock and continue the trend of downtown living that has been occurring in Syracuse over the past 10 years. There are over 3,500 residents living in the downtown area of Syracuse, and there is still opportunity, both in downtown and adjacent neighborhoods that would also be adjacent to the HQ2 site. Currently there are several hundred units under construction and several large scale redevelopment projects that would be undertaken immediately.   In addition to urban living, there is an abundance of quality suburban and rural communities all within a very short commute. The variety of affordable housing options in the region creates an ideal scenario for Amazon to attract any type of worker at any stage in their career or family life. Everyone can find something that feels like home.

TRANSIT

The region is served by a robust transportation and infrastructure network that is based on Interstates 81 and 90, which form the crossroads of New York.   These primary facilities, along with Interstates 481 and 690 and NYS Routes 5/31/11/20 are essential links to the local, regional and national transportation network.

At peak congestion, according to the TomTom Traffic Index, the Syracuse metropolitan area has a congestion level reading of 9% - an increase in highway travel time of 2%, and an increase in non-highway travel times of 18% when compared to free flow uncongested situations.

These figures confirm that the Central New York has one of the least congested transportation system in the nation.

Airport

The Syracuse Hancock International Airport (SYR) provides service to several passenger and air cargo destinations across the northeast with carriers including American Airlines, Delta Air Lines, JetBlue Airways, United Airlines, Air Canada, Allegiant, UPS, FedEx and Wiggins Airways.   SYR is located approximately 7 miles north of downtown Syracuse. SYR's main entryway, Colonel Eileen Collins Boulevard, connects directly to Interstate 81 approximately three miles north of the I-81 interchange with the New York State Thruway (I-90). If Amazon locates HQ2 in

Central New York, it could expect to enjoy highly convenient, access to competitive air service to major hubs across the United States, and the potential for new non-stop flights to European hubs, as well. Of particular note, network planners for Alaska Airlines and Delta Air Lines have indicated a likelihood in initiating new non-stop flights between Syracuse and Seattle.

With nearly one million passenger enplanements in 2013, the Federal Aviation Administration classifies SYR as a hub. The top three single airport destinations from Syracuse, by total passengers (including those reaching their final destination and those making a connection), are Chicago O'Hare, Atlanta, and JFK airport in New York. However, New York City is the most common destination when the other two airports in the region (Newark and LaGuardia) are considered; nearly 230,000 passengers flew from Syracuse to one of the three New York City airports in 2013. In 2013, SYR ranked 87 out of the 559 commercial service airports in the U.S. for passenger enplanements.

A total of 162,500 tons of air cargo landed at SYR in 2013, which was a 2.76 percent increase from 2012. Of the 129 cargo service airports in the U.S., SYR ranked 68 based on weight of air cargo landings.

A little known fact about SYR is its reputation as being the airport that never closes. With an average snowfall of 130" annually, and a record of 192" during the 1991/92 winter season,

SYR has a highly skilled airfield maintenance department and state of the art snow removal equipment that ensures aircraft can safely take off and land, in all types of weather. Designated as a diversion airport in the northeast, SYR routinely accommodates aircraft that are unable to land at other airports as a result of inclement weather

In January of 2017, the airport was selected as one of four winners in the NYS Upstate Airport Revitalization Competition. The $35.8 million award, when combined with another $10 million dollars of funding from the FAA and the Airport Authority, will enable the airport to undergo a transformation unlike any other project to date. Construction is currently underway, and will be completed October of 2018.

Rail

There are 305 miles of active rail lines within the metropolitan area with 251 miles categorized as Class I, 31 miles classified as Class II, 23 miles as Class III, and about a mile of terminal lines. Rail passenger service is provided by Amtrak at the William F. Walsh Regional Transportation Center (RTC). Amtrak provides intercity service on three routes: Lake Shore Limited, Empire Service, and Maple Leaf. OnTrack operated passenger shuttles from 1994 to 2007 to and from Downtown, Destiny USA, and Syracuse University. The opportunity exists for light rail, with 6 stations available to recommission.

For freight, there is one major (Class I) carrier, CSX Transportation; one regional (Class II) carrier, New York, Susquehanna & Western Railway (NYS&W); and one shortline (Class III) railroad, Finger Lakes Railway. CSX operates the Chicago Main line that links Central New York with New York City, New England, and the Midwest. CSX operates the intermodal terminal at the DeWitt Rail Yard, which is a major intermodal facility that handles international containers to/from Chicago, domestic containers, and "trailer on flat car;" it is the only terminal of its type between New York City and Buffalo. The DeWitt Yard is also one of three major classification yards operated by CSX in New York State.

Bus/Transit

The Central New York Regional Transportation Authority (Centro) provides public transit service in Central New York. Centro also has multiple bus routes that serve the Syracuse University area, including a free bus route developed in partnership with the university known as the "Connective Corridor." Buses on the Connective Corridor run between Syracuse University and Downtown Syracuse every 30 minutes during weekdays and every 40 minutes on weekends. Total annual ridership is nearly 10 million passengers, including service for the New York State Fair, the Syracuse City School District, Syracuse University and hospital shuttles, and other special services.

SMTC SMART 1 Study – Bus Rapid Transit / Light Rail

The Syracuse Metropolitan Transportation Council is finalizing a multi-year transit study on behalf of Centro with participation from a variety of governmental and economic development groups. The SMART 1 study (Syracuse Metropolitan Area Regional Transit study) is an examination into the feasibility of enhanced transit services along two corridors principally within the City of Syracuse that when combined cover over 15 miles (i.e., Regional Transportation Center to Syracuse University; Eastwood to Onondaga Community College). Several transit modes such as Bus Rapid Transit, Light Rail Transit and modern streetcars were analyzed in the study. The purpose of an enhanced transit system is to provide faster, more direct, more frequent, and more reliable transit service between major residential areas and activity centers in the Syracuse metropolitan area, at a reasonable capital and operating cost. The two corridors are the most heavily traveled transit routes in the Syracuse region. The provision of improved transit service will enhance mobility for all, encourage economic development, alleviate environmental impacts of transportation, and improve the quality of life along the corridors.

Lastly, redevelopment and revitalization that is supported by public transit is encouraged. In some parts of the corridors, properties and parcels are underutilized. High quality transit service will improve the regional accessibility of these sites, making them more economically viable and encourage development. It will provide improved access to jobs, education, shopping, and service for local residents leading to increased investment in residential areas. Access to high quality transit will support redevelopment in a more sustainable, compact, and pedestrian-oriented way. Based on extensive analysis and current conditions, Bus Rapid Transit is the recommended mode of operation. Light Rail Transit and modern streetcar could be a viable alternative to further support the transformative nature of an enhanced transit system and anticipated economic development opportunities that are shown to follow these types of systems should a significant change take place in the metropolitan area coupled with an influx of financial subsidies.

Trails

The Syracuse community is served by three existing prominent bicycle and pedestrian trails. The Onondaga Lake Trail, or "Loop the Lake Trail," was recently expanded with the opening of the West Shore Extension in May 2014; the next phase of this trail will connect to the Onondaga Creekwalk. The Creekwalk trail currently connects the proposed HQ2 site from Onondaga Lake to Armory Square. Additional extensions are envisioned to Kirk Park and eventually to the southern border of the city at Dorwin Avenue. The New York State Erie Canalway Trail connects Central New York to the Empire State Trail System, a 750 mile trail system that will be complete by 2020, connecting all of NY.

EDUCATION

K-12 Education - A+:

With over 155,023 students enrolled in K-12 programs in the Central New York region we have an abundance of talented students coming through our schools. There is an increasing focus on STEM related education in our region including computer related training. Many school districts in our area offer computer related education programs including:

- Cornell offers a summer program for rising high school seniors that allow students to take an engineering lab class in addition to electives from more than 50 course offerings (including some in computer science)
- Cayuga-Onondaga BOCES - computer systems and networking training
- Onondaga-Cortland-Madison BOCES- computer systems and networking training
- Oswego County BOCES- computer systems and networking training
- Tompkins-Seneca-Tioga BOCES- computer systems and networking training
- West Genesee CSD- computer systems and networking training
- Monroe #1 BOCES- computer systems and networking training
- Canastota Central School District has programs for computer and information sciences as well as computer programming.
- Madison-Oneida BOCES has computer programming coursework.
- Syracuse Academy of Science Charter Schools offers coursework in computer science.
- Syracuse City Schools offer programs of study in Cyber Security as well as UAS/Drone Technology at the Public Service Leadership Academy

It isn't just offering the programs that matter, it's also the results. For example here is historical information on Fayetteville Manlius School District's, the highest ranked K-12 district, participation in the Science Olympiad for the last 10 years:

FM SCIENCE OLYMPIAD HISTORY

YEAR	REGIONAL STANDING	NY STATE STANDING	NATIONAL STANDING
2016	1st	3rd	---
2015	1st	2nd	7th
2014	1st	1st	6th
2013	1st	2nd	8th
2012	1st	1st	7th
2011	1st	1st	11th
2010	1st	1st	10th
2009	1st	1st	5th
2008	1st	1st	7th
2007	1st	1st	4th

Post-Secondary Education - 4.0:

Easy Access to some of the best known universities in the world including Cornell University, Rochester Institute of Technology, Rensselaer Polytechnic Institute and Syracuse University, as well as one of the highest rated State University Systems in the country. We are developing the workforce of the future. Here are some facts:

1. There are 382,437 people with Bachelor's degrees in a 100 mile radius of the region

2. 12,646 of the people listed above have Graduate or professional degrees.

3. The region has 35 colleges and universities

Not only is our region highly educated, but we have strong computer science and engineering programs. In 2016, just 10 of our leading computer science and engineering universities graduated 1,780 students with an undergraduate degree in either Computer Science and Information Studies or Computer Engineering.
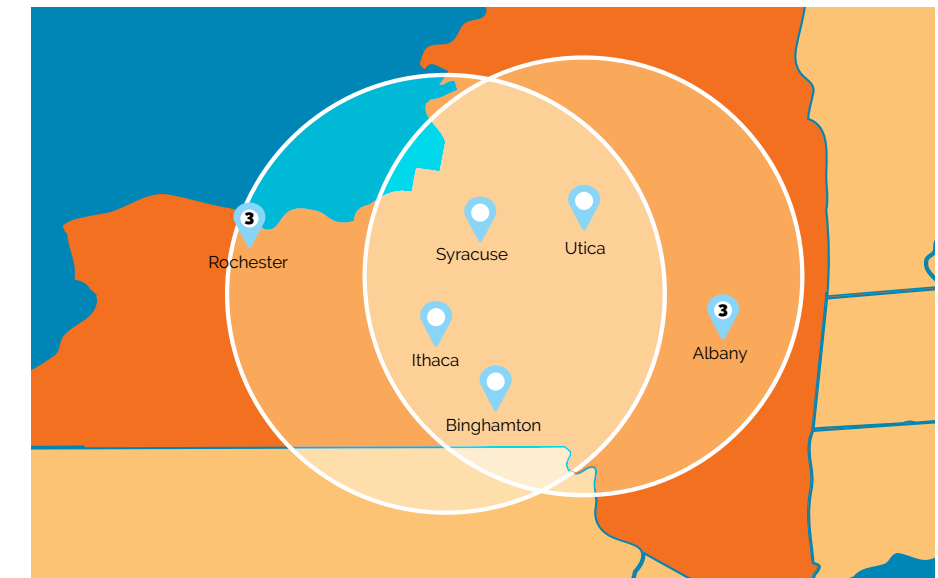
1,780 UNDERGRAD

1,365 GRAD

RELEVANT COMPUTER DEGREES (2016)

Institution	Bachelors Computer Science	Masters Computer Science	Bachelors Computer Engineering	Masters Computer Engineering
Rochester Institute of Technology	395	267	97	41
Cornell University	304	248	-	-
Syracuse University	218	311	19	118
Rensselaer Polytechnic Institute	151	66	-	-
SUNY at Albany	146	70	-	-
SUNY at Binghamton	120	142	59	-
SUNY Polytechnic Institute	104	83	-	-
University of Rochester	72	19	-	-
SUNY College at Brockport	56	-	-	-
Excelsior College	39	-	-	-
SUNY College at Oswego	26	-	6	-
Morrisville State College	26	-	-	-
Colgate University	25	-	-	-
SUNY College of Agriculture and Technology at Cobleskill	20	-	-	-
Siena College	18	-	-	-
Union College	16	-	-	-
SUNY College at Potsdam	15	-	-	-
Hartwick College	13	-	-	-
Ithaca College	13	-	-	-
SUNY Oneonta	13	-	-	-
Skidmore College	13	-	-	-
The College of Saint Rose	13	21	-	-

Institution	Bachelors Computer Science	Masters Computer Science	Bachelors Computer Engineering	Masters Computer Engineering
Clarkson University	10	15	28	-
Hamilton College	10	-	-	-
Hobart William Smith Colleges	8	-	-	-
St Lawrence University	8	-	-	-
SUNY College of Technology at Canton	8	-	-	-
Nazareth College	7	-	-	-
Le Moyne College	4			
Saint John Fisher College	4			
Utica College	4			
Wells College	2			
Total:	**1882**	**1242**	**209**	**159**

Total Undergraduate Computer Science and Engineering = **2091**

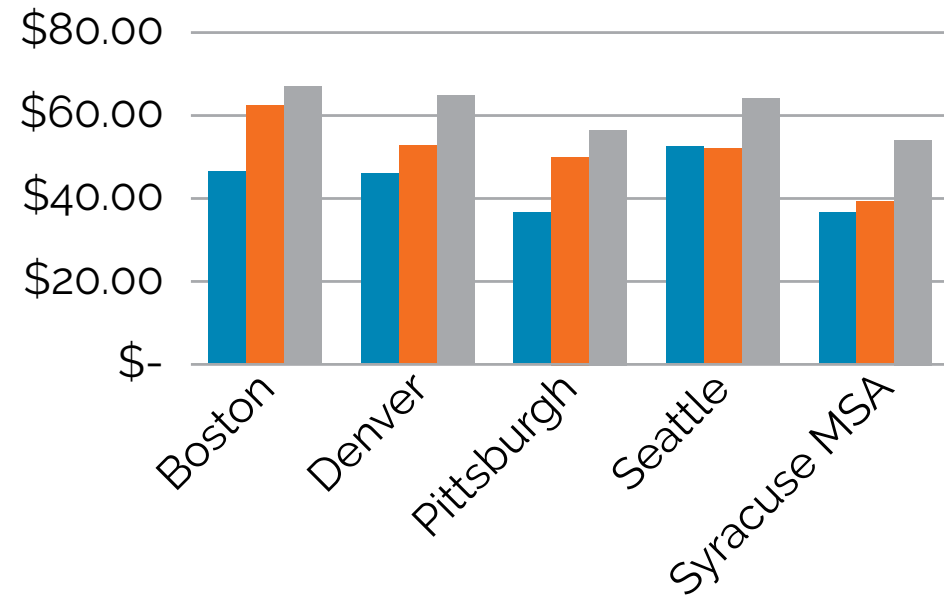**Total Masters Computer Science and Engineering** = **1401**

WORKFORCE

30%

Looking at the chart will help you understand the reason many companies locate operations here. The figure that is often mentioned is a 30% savings in wages over a comparable position in a bigger metropolitan area for some occupations. Large headquarter operations may overlook us because we don't have the prestige of an NYC, Atlanta or Boston, but that would change with a single decision by Amazon.

Currently there are more than 10,000 people employed in computer and mathematical occupations within the region at average annual wages of $77,500. While the workforce wage numbers show the tremendous potential for saving money by locating in the region, they don't tell the full story. The education numbers show the region currently graduates thousands of student in various computer related fields every year. However, many of these students currently leave the region in search of employment opportunities. We believe that having Amazon locate here would immediately and significantly increase the number of graduates staying in the area and thereby rapidly increase the number of people in the region employed in computer and mathematical occupations.

- ■ Computer and Mathematical Occupations
- ■ Legal Occupations

The other story that numbers can't tell is one of collaboration. There is a tremendous partnership in the region such that when insurance companies were looking to fill risk management positions in the region and the skills were not available, the colleges stepped up and created programs specifically to fill those needs. Both SUNY Oswego and Utica College began to offer courses specifically to fill this need.

This creative and collaborative approach will be brought to bear with Amazon's workforce needs. One small example of this is SUNY Cortland leadership has already begun exploring what investments would be necessary to bring online a new offering for Computer Science and Engineering in order to broaden the talent pipeline. It is that kind of willingness and enthusiasm that Amazon will find from the academic intuitions in the region.

COMPARISON OF ANNUAL LABOR AND REAL ESTATE COST ESTIMATES

Labor	# Employees	Syracuse, NY	Seattle	Boston	Pittsburgh	Denver
Management	500	$55,525,600	$68,078,400	$74,058,400	$62,223,200	$71,188,000
Admin Support	400	$21,939,840	$24,693,760	$25,866,880	$21,648,640	$22,289,280
Customer Service	1300	$48,266,400	$52,079,040	$58,136,000	$46,022,080	$48,158,240
Accountants	125	$8,764,60	$9,388,600	$10,657,40	$8,977,800	$ 10,043,800
Legal	125	$11,411,400	$17,277,000	$21,335,600	$17,167,800	$18,127,200
Programmers	2550	$226,427,760	$336,804,00	$275,118,480	$222,290,640	$269,814,480
Total Labor	**5000**	**$372,335,600**	**$508,320,800**	**$465,172,760**	**$378,330,160**	**$439,621,000**
Relative Annual Savings if Located in Syracuse, NY	-	-	$135,985,200	$92,837,160	$5,994,560	$67,285,400
Class A Office Real Estate	500,000	$9,245,000.00	$21,960,000.0	$30,160,000.00	$12,785,000.00	$17,500,000.00
Relative Annual Savings if Located in Syracuse, NY	-	-	$12,715,000.00	$20,915,000.00	$3,540,000.00	$8,255,000.00
Total Annual Savings if Located in Syracuse, NY			**$148,700,200.00**	**$113,752,160.00**	**$9,534,560.00**	**$75,540,400.00**

Year	Employees	Real Estate (SF)	Seattle	Boston	Pittsburgh	Denver
1	5000	500,000	$148,700,200.00	$113,752,160.00	$9,534,560.00	$75,540,400.00
2	10000	1,000,000	$297,400,400.00	$227,504,320.00	$19,069,120.00	$151,080,800.00
3	15000	1,500,000	$446,100,600.00	$341,256,480.00	$28,603,680.00	$ 226,621,200.00
4	20000	2,000,000	$594,800,800.00	$455,008,640.00	$38,138,240.00	$302,161,600.00
5	25000	2,500,000	$743,501,000.00	$568,760,800.00	$47,672,800.00	$377,702,000.00
6	30000	3,000,000	$892,201,200.00	$682,512,960.00	$57,207,360.00	$453,242,400.00
7	35000	3,500,000	$1,040,901,400.00	$796,265,120.00	$66,741,920.00	$528,782,800.00
8	40000	4,000,000	$1,189,601,600.00	$910,017,280.00	$76,276,480.00	$604,323,200.00
9	45000	4,500,000	$1,338,301,800.00	$1,023,769,440.00	$85,811,040.00	$679,863,600.00
10	50000	5,000,000	$1,487,002,000.00	$1,137,521,600.00	$95,345,600.00	$755,404,000.00
Total Savings Over 10 Years if Located in Syracuse			**$8,178,511,000.00**	**$6,256,368,800.00**	**$524,400,800.00**	**$4,154,722,000.00**

APPENDIX

APPENDIX A

PROJECT U-SAFE & UAS IN CENTRAL NEW YORK

The emergence of unmanned systems technologies is expected to be the next great evolution of civil aviation in the United States and around the world. A recent study from the Association for Unmanned Vehicle Systems International indicates that in the United States alone, the UAS industry will create more than 100,000 jobs and $82 billion in economic impact by 2025.

Central New York are well positioned to play a leading role in the global development of this industry. Major UAS and systems integrators, including Lockheed Martin and Saab, call the region home, with significant research and manufacturing functions. The Air National Guard's 174th Attack Wing is training civilians to operate and maintain complex unmanned vehicle airframes. The Syracuse-Utica region has been designated as one of only seven Federal Aviation Administration- certified UAS testing areas in the country. This designation also brings partnership and interest from the Federal Aviation Administration and NASA in developing a regional support infrastructure for growing UAS technologies in the regions.

Additionally, aerospace and sensing systems have a long industrial heritage in the regions. The long-time presence of major firms like Lockheed Martin, SRC, and Saab has built a significant advanced manufacturing supply chain and seeded some of the regions' fastest growing firms, such as SRCTec, Gryphon Sensors, and C-Speed. Many of the regions' historic connections to this industry have been driven by the presence of significant military and research assets. The 174th Attack Wing (one of the country's first dedicated UAS units), an Air Force Research Laboratory in Rome (specializing in cybersecurity), and Fort Drum (the largest single employer in Upstate New York) are all located within Central New York and its surrounding regions. In total, aerospace and other sensing-related firms employ 22,000 in these regions. One-third of all patents registered to companies, individuals, and institutions in the regions are in sensing.

Progress:

Central New York was awarded funding for Project U-SAFE to make the region a leading home of UAS-related technologies and innovation as part of the Upstate Revitalization Initiative. This award brought a significant down payment in supporting the growth of the UAS industry locally by underwriting the development of three core regional strategies:

> 1. **Construct a world leading unmanned aerial system traffic management (UTM) corridor**
>
> 2. **Establish a national unmanned aerial system standardized testing and rating (NUSTAR) facility**
>
> 3. **Support UAS business development, growth, and innovation**

The Central New York region established a UAS work group. The working group provides three core functions: 1. Act as an experienced advisor to the state and those responsible for executing the component parts of Project U-SAFE; 2. Seed, support, vet, and grow other elements of Project U-SAFE, or new concepts, which do not have an official sponsor; 3. Facilitate the exchange of open information to the extent possible. Work group members include: Assured Information Security, C&S Companies, CenterState CEO, Griffiss International Airport, Gryphon Sensors, Niteo Park, Onondaga County, Saab, SRC Inc., and Syracuse University.

Project U-SAFE was designed as a multi-phased initiative that would access state investment after completion of specific benchmarks. As of May 2017, regional partners are transitioning to phase two of the program. Gryphon Sensors administered phase one, which ran from September 2016 to May 2017.

The NUAIR Alliance administered phase two, which will run from May 2017 to September 2018, and it is expected that the NUAIR Alliance will administer any future phases.

NASA has been an unofficial partner of the efforts to develop and implement phase one. As the effort transitions to phase two, NASA will be engaged as a more formal partner through the execution of space act agreements codifying the relationship between NASA and the NUAIR Alliance.

UAS STRATEGY 1:

CONSTRUCT A WORLD LEADING UAS TRAFFIC MANAGEMENT (UTM) CORRIDOR

UTM is a nationwide initiative being researched and led by NASA. Working alongside NASA and supported by the FAA are more than 125 collaborators providing expertise in a variety of technologies and capabilities. The Central New York region is working closely with the FAA, NASA, and a local and national industry team to develop the critical safety cases and range architecture in a 50-mile radius between Rome and Syracuse. Ultimately the corridor will provide a safe and secure flight environment for companies to conduct beyond visual line of site (BVLOS) commercial testing. The corridor will allow companies to conduct and record data for these tests to prove to the FAA that they can safely conduct commercial operations.

Phase One

Buildout of the corridor is completed, with initial installations around Griffiss International Airport. This instrumentation buildout includes the development of a mobile, truck-based UTM unit for deployment in temporary situations (e.g., sporting events, concerts, and parades) in addition to ground based radar and sensing instillations to create a fully operation UTM corridor.

Phase Two

At the 2016 UTM Convention, a national convention hosted in Syracuse, Gov. Andrew Cuomo announced an investment of $30 million for phase two of the UTM corridor buildout, one of the largest commitments to safe use of commercial UAS that has been made to date in the United States, which will complete a 50-mile UTM corridor between Griffiss International Airport and Syracuse. The corridor should be operational by summer 2018. The NUAIR Alliance is preparing requests for proposals for vendors to develop the instrumentation, software, and protocols needed for the system.

UAS STRATEGY 2:

ESTABLISH A NATIONAL UAS STANDARDIZED TESTING AND RATING (NUSTAR) FACILITY

Another key component of Project U-SAFE is the capability to perform UAS airworthiness and cybersecurity certification testing. In such a young industry, standards are lacking for UAS airworthiness and certification. NASA will be engaged in the design and development of the NUSTAR facility. It's anticipated that any UAS provider that desires to fly its vehicle in the national air space will come to NUSTAR for certification testing, attracting entire industries to locate in close proximity to the facility. NUSTAR will also service customers' needs, such as testing model scale wind turbines, airplanes, industrial complexes, individual buildings, transmission lines, and cyber certifications.

Phase One

The initial phase of the NUSTAR program focused on three tasks:

1. Establishing a NUSTAR Advisory Committee to guide the development of standards and to establish protocols for testing against those standards

2. Creating a business model for sustainably operating a NUSTAR facility

3. Creating interim NUSTAR testing capabilities with existing regional partners. Many of these tasks are ongoing with an expected completion date in fall 2017.

UAS STRATEGY 3:

SUPPORT UAS BUSINESS DEVELOPMENT, GROWTH AND INNOVATION

As part of efforts to support private sector growth of the UAS industry in the region, a new umbrella brand and marketing strategy is being developed for this effort, which will be launched in the coming months. In addition, several initiatives are underway or are being developed:

- Drone Zones – Central New York will invest in and build one or more drone innovation zones to seed and accelerate the growth of unmanned systems-focused business startups. These innovation campuses will offer office, testing, and assembly space to UAS companies at below-market rate.

- GENIUS NY – The world's largest startup business accelerator for the UAS industry, GENIUS NY has awarded $2.75 million to companies in its annual in-residence competition at The Tech Garden in Syracuse. Modeled after 43 North in Western New York, but targeting the unmanned systems industry, GENIUS awards three grand prizes of $1 million, $600,000, and $400,000 to program finalists. Six companies were accepted into the program in early 2017 with investments announced in March 2017. A second round of the program is planned with applications open from May until October 1, 2017.

- Research – Project U-SAFE funded UAS research is underway through an interdisciplinary partnership at Syracuse University's College of Arts and Sciences, College of Engineering and Computer Science, Institute for National Security and Counterterrorism, School of Architecture, School of Information Studies, and Maxwell School of Citizenship and Public Affairs. The various topics under examination include:

  o Heat mapping drones: building envelope energy performance and privacy diagnostics

  o Using unmanned aerial systems

  o Toward full onboard autonomy for unmanned vehicle in GPS-denied environments

  o Environmental monitoring and geoscience surveying applications for UAS

  o Law and policy of unmanned aerial vehicles

  o Development of an integrated system for design, operation, and decision-making for UAVs

  o Development of educational and training materials for UAS

In addition to these efforts, many colleges and universities in Upstate New York are expanding research and curriculum in UAS-related fields. These institutions include Clarkson University, University of Rochester, Rochester Institute of Technology, Mohawk Valley Community College, SUNY College of Environmental Science and Forestry, Cornell University, Rensselaer Polytechnic Institute, and University of Buffalo.

Research and development activities are not restricted to just the region's colleges and universities. Many leading private employers have robust R&D offices. Just recently, the Defense Advanced Research Projects Agency announced a partnership with three U.S. companies to develop technologies to prevent incursions from non-cooperative UAS. Two of the three companies selected - Saab and SRC Inc. - are from Central New York, further validating the region's strength in UAS technology. SRC also recently announced plans to hire more than 80 new employees to meet the needs of the fourth U.S. military contract the company won in August 2017 to strengthen the nation's drone defenses.

APPENDIX B
ECONOMIC INCLUSION, DATA

HIGHEST BLACK CONCENTRATION OF POVERTY

RANK	METROPOLITAN AREA	BLACK		
		2000	2005-2009	2009-2013
1	Syracuse, NY	43.4	48.3	65.2
2	Detroit-Livonia-Dearborn, MI	17.3	41.4	57.6
3	Toledo, OH	18.7	43.4	54.5
4	Rochester, NY	34.2	43.5	51.5
5	Fresno, CA	42.8	28.1	51.4
6	Buffalo-Niagara Falls, NY	30.8	31.8	46.4
7	Cleveland-Elyria-Mentor, OH	26.7	36.7	45.5
8	Gary, IN	22.2	30.1	45.2
9	Milwaukee-Waukesha-West Allis, WI	38.7	41.0	44.8
10	Louisville/Jefferson County, KY-IN	38.6	41.9	42.6

Sources: 2000 Census, 2005-2009 and 2009-2013 ACS.
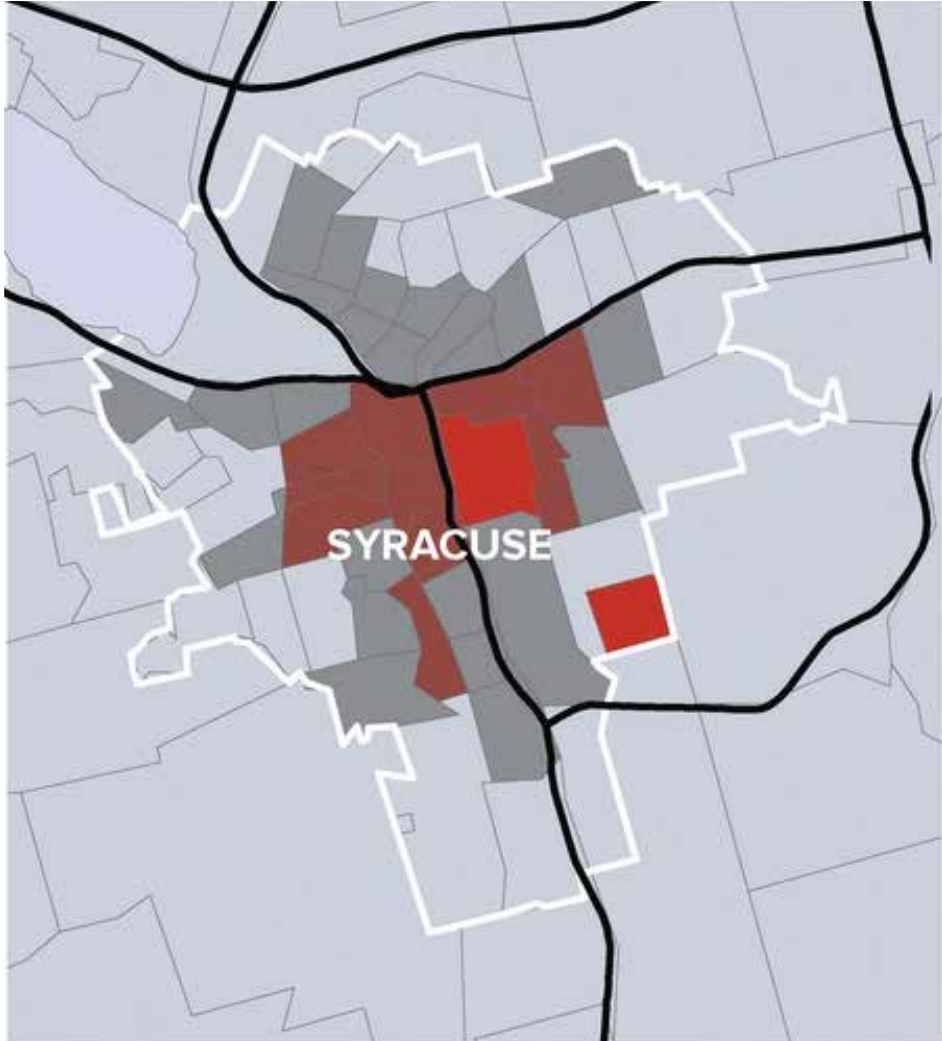Limited to the 100 largest metropolitan areas.

THE CENTURY FOUNDATION

HIGHEST HISPANIC CONCENTRATION OF POVERTY

RANK	METROPOLITAN AREA	HISPANIC		
		2000	2005-2009	2009-2013
1	Syracuse, NY	49.3	38.4	62.2
2	Philadelphia, PA	53.7	45.9	54.0
3	McAllen-Edinburg-Mission, TX	61.4	53.8	51.8
4	Detroit-Livonia-Dearborn, MI	8.8	34.9	51.1
5	Springfield, MA	42.9	39.5	49.3
6	Rochester, NY	32.3	34.6	45.7
7	Milwaukee-Waukesha-West Allis, WI	5.3	22.7	43.2
8	Fresno, CA	31.9	28.5	43.0
9	Buffalo-Niagara Falls, NY	39.4	31.6	41.6
10	Cleveland-Elyria-Mentor, OH	16.2	29.7	36.9

Sources: 2000 Census, 2005-2009 and 2009-2013 ACS.
Limited to the 100 largest metropolitan areas.
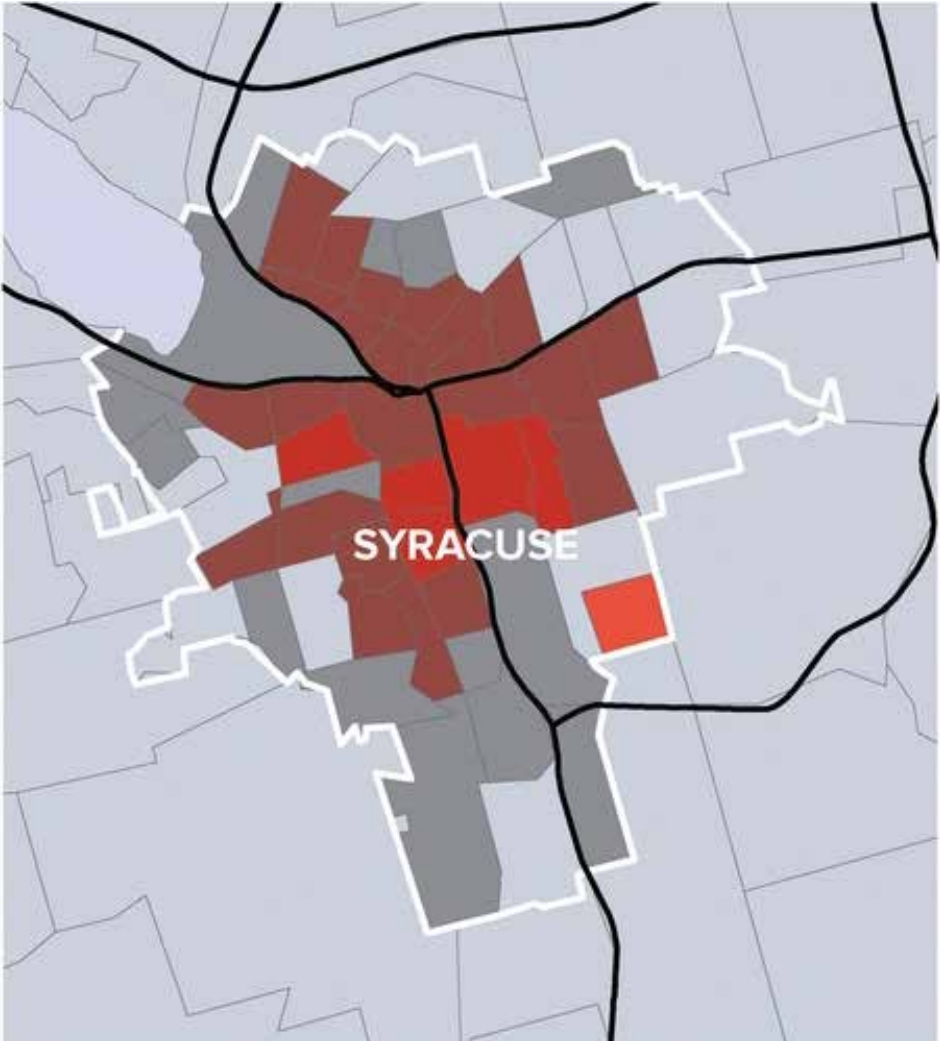
THE CENTURY FOUNDATION

HIGH-POVERTY CENSUS TRACTS IN SYRACUSE METROPOLITAN AREA

☐ No data ■ 0-20% ■ 20-40% ■ 40-60% ■ 60-80% ■ 80-100%

YEAR: 2000

YEARS: 2009-2013