

A Business Plan for
Enduring Social Impact
EXECUTIVE SUMMARY & NEED

**Northeast STEM Starter
Academy at Mt. Vernon**



NSSA
at Mt. Vernon

Engagement
Development
Achievement

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SECTION 1. EXECUTIVE SUMMARY

Too often Mount Vernon, New York, is defined by crime, low public school graduation rates between 47% and 66% in recent years, a high poverty rate and high unemployment rate. As the eighth most populated city in New York and the only major city in the state where a minority represents the majority, Mount Vernon has too many good things that go uncelebrated. Those “good things” include the 9,000 at-risk and underserved public school students, 90% of whom are brown and black. Despite whatever the suggested odds, these children are as eager, vibrant, willing and able to learn and ready to succeed as children from any of the affluent surrounding communities. What will actually influence and change the outcomes for many of these youths is access and exposure to the quality education that is a significant part of the American Promise.

It's Time to Take a Stand

The Northeast STEM Starter Academy (NSSA) is prepared to take action in the city of Mt. Vernon. Our mission: To deliver a comprehensive solution and face this massive problem of low graduation rates coupled with persistently high crime, poverty and unemployment rates within Mt. Vernon relative to neighboring communities. This proposal is not about blaming or pointing fingers at school leadership or elected officials; it is about taking well-thought-out, measurable actions to drive meaningful, sustainable change. It is about providing the resources that fill the gap and enable an enriched supplemental educational solution in proportion to the size of the problem.

Take Action!

Good people with good intentions must take action and turn the tide for these young people. We must help them achieve their greatest potential. Yes, the problem is massive. However, **NSSA's solution is notable as well.**

NSSA proposes to build and operate a comprehensive science and technical informal learning facility that will engage and develop the children in Mt. Vernon. This facility will become a **cornerstone of success** for this community.

NSSA will be an **advanced center** for learning with a primary goal to develop at-risk youth in Mt. Vernon for the **industries and careers of the future**. Youth will be educated, challenged and encouraged to assimilate the knowledge they need to **ENGINEER LIFE SUCCESS**.

NSSA is about creating the ideal environment with state-of-art technologies, displays and fully equipped science and technology labs to develop the next generation of scientists, tech moguls, business innovators, medical researchers and other lucrative, rewarding careers that will influence the future of our nation. Essentially, NSSA will help young people develop the skills and knowledge they need to compete in this demanding worldwide economy. This is the only way we can face this problem effectively.

The supplemental educational enrichment programs of NSSA will help these children face the world with confidence and develop the belief that they, too, can **succeed**. Once they go on to college or land impressive jobs in big companies, they will become examples for future generations. The generations that follow will believe that with hard work their success is achievable. Within a few years, we can develop the prototype with verifiable intelligence on how to change a community for the better and how to reverse this unfortunate plight for communities similar to Mt. Vernon. We are doing this for children in this community today. However, the opportunity for this movement to expand nationwide is also within our grasp. **WELCOME ABOARD!**

WHY SHOULD YOU GIVE TO NSSA?

Born of a solemn yearning to make a meaningful difference for a population of children who are too often discarded or dismissed, NSSA is uniquely positioned to fill the educational void contributing to many of the existing dreadful life outcomes. Using a math- and science-based course catalog (available under separate cover upon request) strongly aligned with the goals of the public school curriculum, NSSA will enrich the discovery and learning process with extensive hands-on scientific experiments, robotics, rocketry, coding and other STEM-based learning activities. (STEM stands for science, technology, engineering and mathematics.) In addition to providing the target population with intellectually challenging and fun STEM-related access and exposure, NSSA will consistently help our children understand how digital disciplines provide a strong foundational path to engineering, computer science, medicine and other STEM-related careers. Our educational programs will be amplified by technology and science exhibits similar to those of the NY Science Center. Together these programs and exhibits will create an informal learning facility that invigorates education and incites change.

Based on our rigorous commitment to the exceptional delivery of added-value programs, we anticipate evidence of our success to include:

- Students actively embrace the center and exploit its resources to expand their level of understanding and interest in STEM-related study.
- Measurable improvements in student participation and performance in the classroom and their test results.
- Advances in graduation rates and entry into four-year colleges.
- A cultural shift driven by a significant volume of our children's enthusiastic participation in programs and activities that prepare them to pursue careers within STEM fields.
- From a communal perspective and based on similar efforts in locations akin to Mt. Vernon, such as Shreveport, Louisiana, we also anticipate our mission's impact to include the reduction of crime rates and income disparity within our community.

From an ROI perspective, NSSA at Mt. Vernon when in full operation as reflected in Phase II and Phase III will actually touch and change the lives of young people. Leveraging our partnership with public school leadership, NSSA will ensure that every one of the 9,000 children will visit the center at least once per year in Phase II and twice a year in Phase III for a guided instructional three-hour tour. In addition, all children may participate in free after-school, weekend, summer, tutoring, mentoring and internship programs and science fairs. These programs are consistent with what we have actually delivered in Phase I over the last three years. Based on an array of meaningful touch points created by our programmatic efforts, it is reasonable to expect that we will have a sustainable impact on at least 1,500 to 2,500 or more Mt. Vernon Public School students each year during Phase II and at least three times as many students a year in Phase III and beyond. Few if any existing programs in Westchester County or even in New York state have the capacity to drive change on a comparative basis. Consistent with our new name and logo, NSSA at Mt. Vernon, resulting from an extended pro-bono consultation with IBM, we will also have the capacity to engage students and educators from around the county, state and region.

Through collaboration with the school system, corporate partners and colleges, NSSA will empower Mt. Vernon public school children regardless of race, zip code, gender or economic status. The exposure to state-of-the-art science and technology will enable them to live productive lives with a choice of careers as teachers, scientists, computer scientists, doctors and engineers.

In Phase I of this endeavor, dozens of students attended summer camps focused on coding, robotics, science, and more. The enthusiasm of the students and feedback from their teachers, industry professionals, and parents was overwhelmingly positive. The outcomes of our initial offerings are testament to the need for such programs as well as the potential to influence our youth.

NSSA has the plan, people and systems to bring Phase II and Phase III into reality. We will build on the support and knowledge established over the last three years in Phase I with our concentration on development. Phase II is now within reach. This proposal provides insight on NSSA's mission in order to secure the financial support of those who share our vision and will **help us make Phase II the urgent reality our children deserve.**

IMPLEMENTATION STRATEGY SUMMARY

NSSA developed a three-tiered approach to create a life-changing establishment in Mt. Vernon:

- Phase I (in progress)
 - NSSA's current stage focuses on programmatic delivery, building credibility, community engagement and critical partnerships.
- **Phase II (next phase)**
 - **This phase of NSSA's development includes securing a temporary site for 24 to 36 months and continuing to expand on our programmatic agenda. The temporary site will also house a number of interactive displays and exhibits.**
- Phase III
 - NSSA will build and occupy the targeted location providing a catalog of robust, intellectually challenging programs and other activities, including revenue-generating actions scaled consistently with the significant size of the student population problem NSSA seeks to resolve.

Financial Summary

(Detailed financial information is provided starting on page #24 and within the appendix)

| | PHASE I | PHASE II | PHASE III |
|-----------------------|------------------|--|--|
| TOTAL EXPENSES | \$266,400 | \$6,000,000 Building Renovations \$1,700,000 Annual Rental \$240,000 Annual Staffing Cost \$539,625 Equipment & Furniture \$1,650,000 Technology \$1,800,000 | \$30,000,000 Please refer to Appendix |
| CONTRIBUTIONS | \$282,050 | TBD | TBD |

KEYS TO SUCCESS

- Establish meaningful extended partnerships with leading-edge technology and science providers.
- Create an environment that incorporates a broad range of technology and science exhibits, displays and media presentations that engage the imagination and intellect of schoolchildren of all ages.
- Extend and maintain a strong collaborative relationship with school district leadership that allows the student population to fully utilize the center's resources to enhance and stimulate the educational process.
- Achieve meaningful improvement specific to state science and math testing results for the Mt. Vernon public school population.
- Create secondary but essential programs that will produce meaningful revenue streams, including business center services, social outings, community theatrical events, ongoing membership programs, general fundraising and admission fees for non-Mt. Vernon public school children and all adult visitors.
- Work with local governance to eliminate safety related concerns for tourists and visitors in the area surrounding the center and throughout the city.

DELIVERABLES

- Engage, train and develop **35,000 students by 2030**
- Increase graduation rates **from 55% to 90%**
- Achieve **90% college participation rate** for NSSA cohorts
- Provide many long-term career opportunities within the STEM field
- Create a community educational resource that will transform the current culture into one committed to life-long learning and to helping our public school system **produce students who are prepared to pursue middle-class enabling careers** within the science and technology sectors.

SECTION 2. THE NEED

OVERVIEW

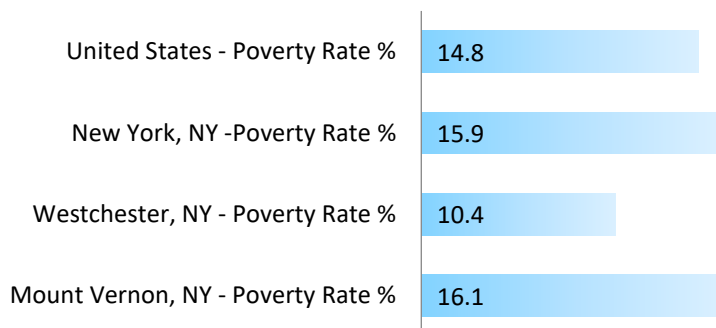
The city of Mt. Vernon, New York, is the eighth most populous city in New York and the third largest in Westchester County, following Yonkers and New Rochelle. With a population of approximately 70,000 with a median age of 35.5, Mt. Vernon is the only major city in New York where a minority group accounts for the majority of its population: 63.6% African-American, 22.2% White, 12.1% Hispanic, 2.1% Asian and 4.44% from other races. Over 98 different nationalities are represented within the city of Mt. Vernon.

CURRENT TRENDS

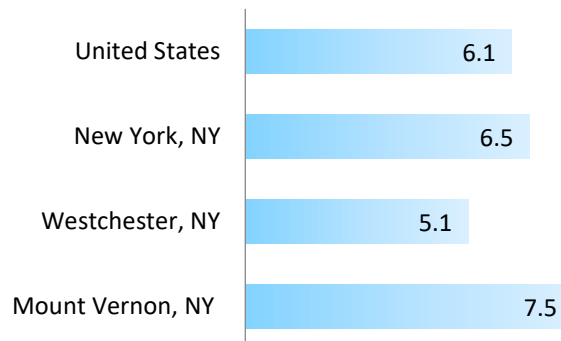
A city and its youth in dire need of help

From an economic perspective, the **poverty rate** in Mt. Vernon is estimated to be **16.1%** versus a Westchester County rate of 10.4%, a New York state rate of 15.9% and a national rate of 12%. Mt. Vernon has a median household income per capita of \$49,765, compared to \$67,635 in New York state and \$54,595 nationally. With a current unemployment rate of 7.5%, Mt. Vernon has a higher rate of unemployment than the state and the nation.

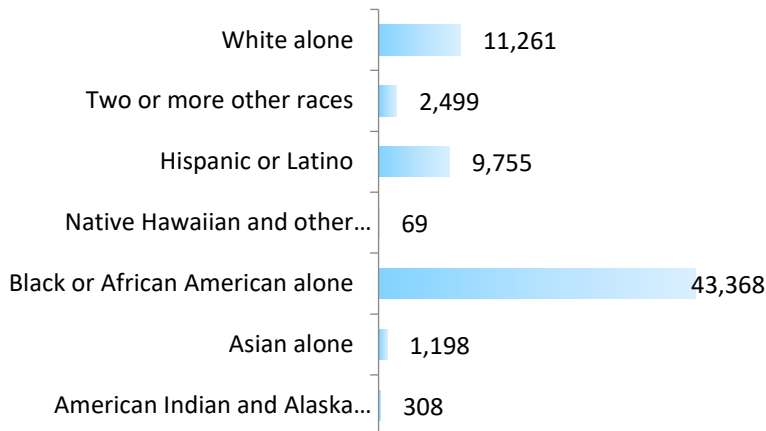
Poverty Rate-2014



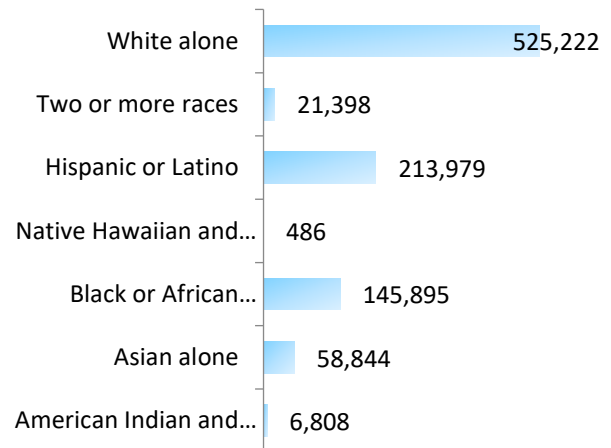
Unemployment Rate-2014



Mount Vernon, NY - Population 2014
Total = 68,458



Westchester, NY - Population 2014
Total = 972,634



ROOTCAUSES

During the 1960s, Mt. Vernon was a divided city resembling “northern style” segregation. Many blacks relocated from the south for better employment and educational opportunities. During this same period, many whites from the Bronx and Manhattan considered Mt. Vernon a new bedroom community due to rising crime in New York City. The height of this segregation occurred during the 1970s under Mayor August Petrillo. In the mid to late 1980s, a limited degree of change began with the election of the city’s first Afro-Caribbean mayor, Ronald Blackwood. Because of those earlier years, and still evident today in many of the same and other ways, Mt. Vernon is divided by the railroad tracks of Metro-North.

ENVIRONMENTAL LANDSCAPE

Mt. Vernon is geographically divided into four major sections within its four-mile radius: the North Side, the South Side, Mt. Vernon Heights and Downtown. Mt. Vernon’s North Side includes its more affluent homes in contrast to the South Side with a strong urban influence that resembles the Bronx and other parts of New York City. Downtown includes one contiguous street, Gramatan Avenue, that becomes Fourth Avenue on crossing over the Metro-North railroad bridge and was historically considered the shopping district. With a 40-year history, the current southern portion of the Downtown area best reflects the economic divide that exists between the two sides of the tracks. Mt. Vernon’s Downtown shopping district has struggled to maintain pace with most of the surrounding communities, including Yonkers and New Rochelle’s more rapid development.

More specifically regarding the southern portion of the shopping district, the majority of properties on one of the two primary blocks that comprise the city’s Fourth Avenue shopping district are unoccupied, closed or boarded. The first of the two blocks on Fourth Avenue, between First and Second streets, is dominated by small store-front businesses that allow for a limited number of employees. There is a strong visual contrast between the contiguous Fourth Avenue segment and the Gramatan Avenue segment of the shopping district, which hosts a similar number of businesses but appears to be operating successfully and is more visually appealing. McDonald’s, Dunkin Donuts

and Golden Krust Foods along with one national bank branch office represent the only major brand name companies outside of the two non-national food establishments. They are all located on the northern end of the shopping district.



BARRIERS

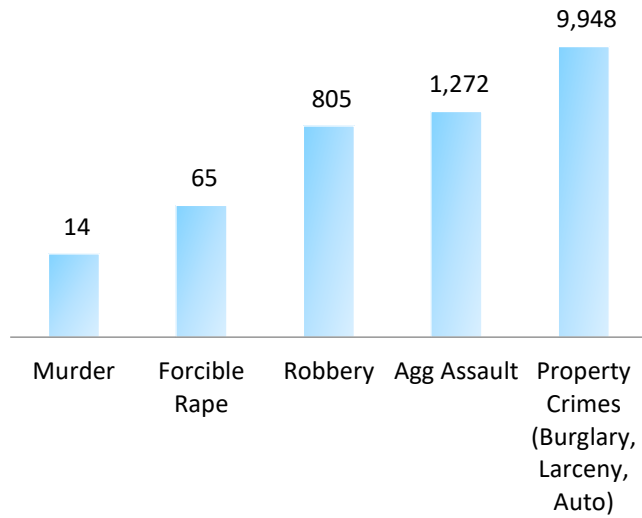
Consistent with the long-term but slightly lessened divide that remains evident throughout Mt. Vernon as well as the closely linked poor overall economic state of the city, the public school system is challenged. As measured by all existing indicators, the school district struggles to provide its students with the critical education necessary for them to positively improve on the status quo for themselves or the city. Over the last 10 to 15 years the city has evolved into a minority dominated community. So has the public school district but more radically. Of the approximately 9,000 students attending the city's public schools, black and brown children comprise 93.7%, with black students at 79% versus 64% of the general population, Hispanic at 14% versus 14% of the greater population and Asian at 1%. Most alarming specific to the available data, of all children attending Mt. Vernon public schools, 46% are classified as living at or below the poverty line.

From a public-school performance perspective, based on statewide testing reflected in the following chart, the Mt. Vernon public education system is challenged to address the declining performance of its students:

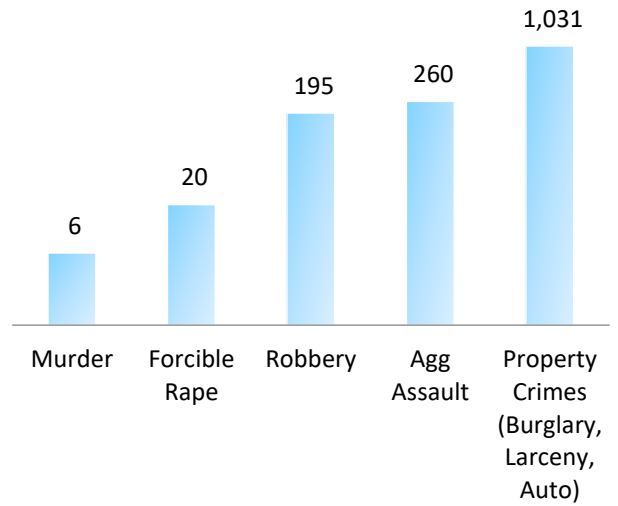
| MOUNT VERNON SCHOOL DISTRICT | PERFORMANCE INDEX | PASS RATE | ADVANCED | BELOW STANDARD |
|---|----------------------|--------------|----------|-------------------|
| 4 th Grade Science | 101 | 95% | 70% | 1% |
| 8 th Grade Science | 38 | 32% | 1% | 16% |
| 4 th Grade Math | 103 | 69% | 28% | 4% |
| 8 th Grade Math | 51 | 30% | 4% | 15% |
| Statistics reflect NY State Regions exams as reflected in a New York Times article, Saturday, July 21, 2012, Tyson Evans, Robert Gebeloff, Andrei Scheinkman | | | | |
| PERFORMANCE INDEX: How Mt. Vernon City School District compares with other districts (100 = state median). PASS RATE: Percentage of students who pass each year (Levels 3 and 4). ADVANCED: Percentage of students who are advanced proficient (Level 4). BELOW STANDARD: Percentage below basic standards (Level 1). | | | | |
| MT. VERNON City School District Students: 9,014 Students, 46% Poor / Poverty, 6% White, 79% Black, 14% Hispanic, 1% Asian. | | | | |

The considerable decline in test performance that occurs between 4th and 8th grades, reflected above, is one clear indicator that this population will not be prepared to compete for the majority of new, meaningful and middle-class enabling career opportunities that require a strong math and science foundation. These statistics also support assertions that the educational system plays a substantial role or is one of the root causes of the poor economic conditions that have dominated the city for an extended period

Westchester, NY - Violent Crimes 2014



Mt. Vernon, NY - Violent Crimes 2014



At approximately 70,000 residents, Mt. Vernon represents less than 8% of Westchester County's 900,000 + population.

| Graduation Rates – General Education Students | | | | | |
|---|------------------------|-----------------------------|----------------------------|---------------------------|-----------------------------------|
| | Pelham School District | Eastchester School District | Bronxville School District | Scarsdale School District | <u>Mt. Vernon School District</u> |
| Year | Percentage | Percentage | Percentage | Percentage | Percentage |
| 2014-2015 | 96% | 98% | 99% | 97% | 55% |
| 2013-2014 | 100% | 99% | 100% | 100% | 76% |
| 2012-2013 | 99% | 99.5% | 100% | 100% | 72% |
| 2011-2012 | 99.5% | 99% | 100% | 99.7% | 81% |
| 2010-2011 | 99% | 99% | 100% | 99.7% | 78% |
| 2009-2010 | 98% | 99% | 99% | 99.7% | 82% |

THE OPPORTUNITY

WE ELECT TO DREAM BIG!



In response to the many challenges and social problems that currently affect the future of the city's children, **our solution is to provide supplemental but significant educational resources.** While no single solution will remedy all concerns or eliminate all issues, a technology and science informal learning center will provide considerable incremental value. As consistently demonstrated and strongly supported by a number of recognized studies, **STEM centers have a significant, positive impact from an educational perspective for the children of the immediate community.** Such nonprofit science and technology centers also have the potential to drive transformation of several other aspects of the city, including economics and culture.

A comprehensive approach

The center will be a multilevel, multipurpose facility with various instructive, interactive displays and exhibits of highly sophisticated, advanced science and technology to support consistent early exposure and learning. The center will provide a resourceful, hands-on learning environment that allows students and visitors to participate in the learning process and enhance their understanding and appreciation of the impact that science and technology, including all areas of STEM, have on their lives, society and the future.

We **Enrich** their lives. They **Succeed** in life.
It's that simple!

We will work with various corporate partner-sponsors within and outside of the STEM sector to accomplish the primary objectives of the center. Wherever possible, the physical design of the center and the naming opportunities associated with the facility may also reflect the influence of primary corporate and individual sponsors willing to work extensively and collectively with other partners and the center to enrich the lives of the city's children. The displays and exhibits will be updated semiannually to reflect ongoing advances and new or different trends within the STEM field. The center will enrich the lives of the youth through essential learning in the socio-economically limited, deprived school-age residents of Mt. Vernon. It will also be positioned as a unique and valuable nonprofit resource complementary to the public school system of Mt. Vernon and a valuable educational resource available to all communities within Westchester County, New York state and the Northeast region.

The recipe for success



To achieve or exceed NSSA's mission, the center will manage an extensive engagement program with the city's local public school leadership that results in at least two annual tours for every class in every school. Using the proven approach associated with the success of informal learning environments, the center will work directly with the Mt. Vernon Board of Education and those responsible for STEM-related studies to promote NSSA's robust programmatic agenda. This approach will be supported by a NSSA Course Catalog aligned with district curriculum and consistent with various programs delivered by NSSA since securing 501(c)(3) status.

Student engagement beyond the tours will be promoted by NSSA with the assistance and support of Board of Education leadership. Optional programs available at no cost to students attending any of the city's public schools, including its charter school, will be provided after school, during school hours, on weekends and throughout summers. The majority of activities and other events held at the center will also be free of cost to all of our target audience, the Mt. Vernon public school attendees. The center will also be an invaluable resource for all children and adults from the city, county, state and region from an educational and tourism perspective.



A COMPLETE BUSINESS PLAN FOR THE NORTHEAST STEM STARTER ACADEMY AT MT. VERNON IS AVAILABLE ON REQUEST. PLEASE DIRECT EMAILS TO GDENNIS@MVTSC.ORG. THANK YOU FOR YOUR INTEREST.