

MAKING TECH WORK



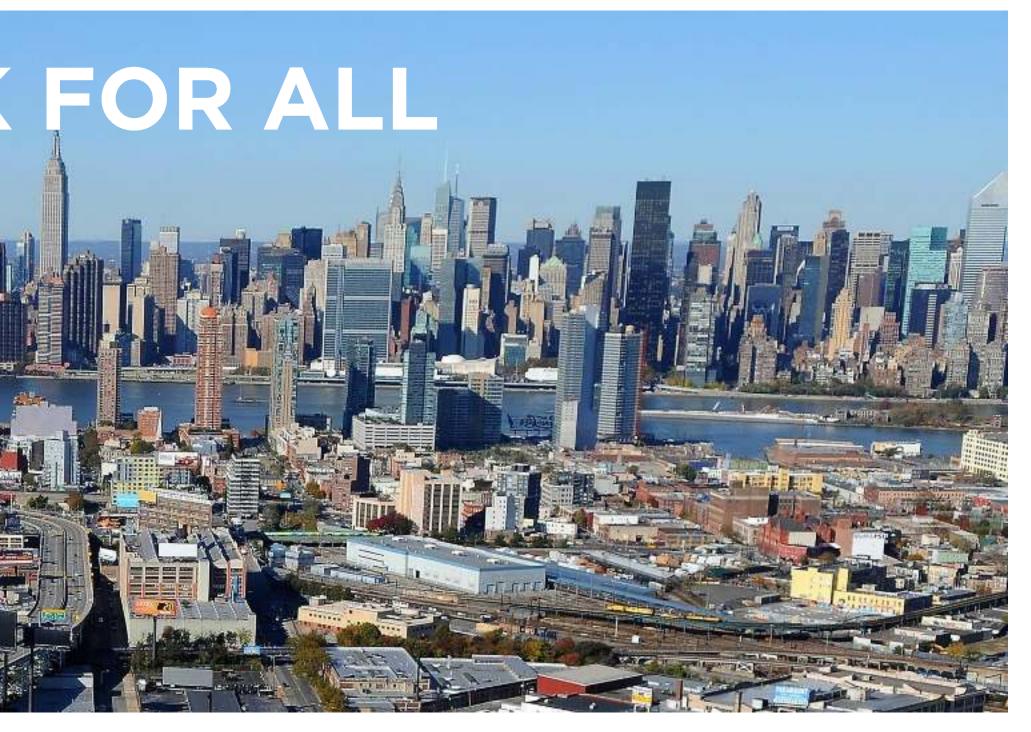


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EXECUTIVE SUMMARY



Innovation is Western Queens' lifeblood, and central to its story. Generations of iconic businesses like American Steel Wool Company. Steinway Piano, Packard Motor Company, and Sunshine Biscuits have called Western Queens home, and made it synonymous with "making things." Western Queens built the pianos that birthed some of America's greatest hits, and the cars that introduced New Yorkers to the automotive age. Today. Western Queens innovators furnish our lives with 3D-printed consumer goods and jewelry, entertain the world with television shows like "Girls" and "Orange is the New Black," and enable millions of New Yorkers to connect with one another using the thousands of LinkNYC terminals produced in Long Island City and found throughout the city. In Western Queens, computer programmers and web developers in established companies-JetBlue, Citibank, and Macy's—and emerging businesses—KeyMe and Vengo-are building the infrastructure that forms the backbone of New York's transportation, finance, and fashion industries.

Western Queens is well positioned to become a highly-recognized tech district. Its history of innovation, wealth of established and emerging businesses, and concentration of tech-friendly buildings make Western Queens a strong

candidate to be New York City's next great tech district. Western Queens enjoys the presence of strong institutional anchors, a large pool of local talent, and easily accessible and robust transportation options. Across the United States, firms are following talent, who increasingly desire live-work environments. Western Queens offers a mixed-use dynamic community in which businesses can flourish and workers can innovate. With the City's recent commitment to investing in advanced manufacturing, creative and cultural sectors, and cybersecurity, Western Queens is well positioned to support New York City's future job growth.

The local tech ecosystem in Western Queens provide opportunities to tackle longstanding inequities. 20 percent of Western Queens residents live below the poverty line and many suffer from unemployment and underemployment. Growing the local tech ecosystem can meaningfully spur greater upward mobility among residents, particularly those who have been traditionally underrepresented in the broader economy. Tech ecosystem jobs pay more than jobs with similar educational attainment requirements. including many that do not require a four-year dearee.

The Western Queens tech roadmap, the product of a multi-month stakeholder-led process, positions Western Queens to grow its tech ecosystem, encouraging equitable access and distributed benefits for all community members. Building upon efforts being advanced by the City and other entities, these strategic initiatives aim to: close gaps in existing tech training programs; create stronger partnerships with tech ecosystem employers to better connect to Western Queens residents; build a greater density of tech activity; integrate technology into communities across Western Queens; develop a brand for Western Queens that leverages existing assets; and support new incentives designed to improve the area's competitive advantage as a tech district. There are three focal points to the tech roadmap:

PEOPLE-FOCUSED INITIATIVES

Prepare disadvantaged residents to succeed in existing tech training programs.

Leverage and expand pre-training programs that can help close gaps between existing tech training programs and Western Queens residents, with an emphasis on supporting people underrepresented in the area's tech ecosystem.

Strengthen the tech workforce pipeline to better align with job placement opportunities.

Build stronger partnerships with tech employers to develop a shared understanding of their needs and expand opportunities for on-the-job practical training.

PLACE-BASED INITIATIVES

Define geographic nodes to focus investment.

Create a density of activity to attract and link residents, students, and tech firms, boosting the Western Queens tech ecosystem and encouraging informal connections.

Develop a physical hub for tech and innovation open to the entire community.

Build a central tech hub to expand access to tools, training, and affordable office space, and increase connections between the tech ecosystem and broader community.

PROGRAMMATIC INITIATIVES

Expand marketing of Western Queens tech opportunities.

Create a recognizable brand for Western Queens that leverages its growing tech ecosystem, as well as the many opportunities that the area offers to grow tech businesses.

Customize regulatory tools and incentives to address tech needs and preferences.

Create new economic development tools to incentivize private sector investments and job creation by building upon the competitive advantage of Western Queens.





A ROADMAP FOR GROWTH

The Western Queens Tech
Roadmap, commissioned by the
Queens Borough President's
Office, is an implementable action
plan to equitably grow the tech
ecosystem of Western Queens by
supporting talent locally, creating
a place where tech employees
want to live, work, and play, and
cultivating an environment of
innovation through tech-focused
tools and policies.

This strategic plan builds upon the 2014 work of Coalition for Queens (C4Q) and represents the culmination of a multi-month interactive process with community stakeholders.

The roadmap proposes six key initiatives and builds upon current citywide and local efforts. Combined, these efforts can equitably grow the tech ecosystem in Western Queens:

People-focused initiatives focus on enhancing workforce development offerings for residents and students while strengthening the training process. New "pre-training" programs should be established to better

prepare Western Queens residents for success in existing tech training academies. Stronger partnerships with local tech employers should be created to generate an enhanced understanding of the skills employers are seeking. Armed with in-demand skills, residents can face fewer challenges finding tech jobs in their communities. As part of this effort, Western Queens tech companies should be encouraged to participate in citywide initiatives working in the training and workforce development space.

Place-based initiatives work to create a denser web of activity in the area that better connects the tech ecosystem, encourages informal connections, and generates new economic opportunity for Western Queens residents. Existing nodes of activity throughout the community should be targeted for tech-supportive investments. Place-based initiatives can catalyze further growth in these nodes and encourage new physical connections. This hub-and-spokes strategy should be anchored by a new physical space dedicated to tech and open to all members of the community. The space can over time become a center for learning, prototyping, and networking that encourages

more robust innovation exchange.

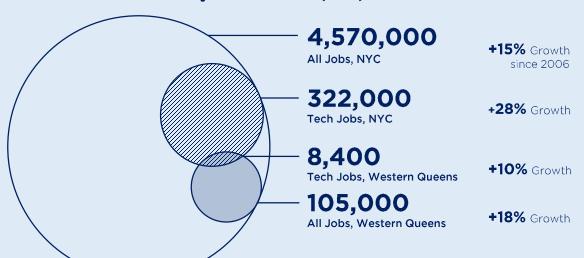
Programmatic initiatives can incentivize techsupportive investments and job creation by
building upon the competitive advantage of
Western Queens. A strong and unique brand,
focused on Western Queens' maker identity
and diversity of closely-knit industries, should
be developed for the community. An enhanced
suite of customized financial incentives and
regulatory tools should be made available to
developers, investors, and employers in the
area who contribute to local tech job growth.





WESTERN QUEENS BY THE NUMBERS

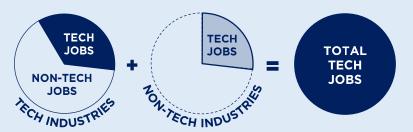
Western Queens Tech Ecosystem in Context (2016)



How this study defines "tech jobs"

In 2014, New York City developed a highly inclusive definition of "tech" to measure the scale and geographic distribution of the city's technology economy. What the City today calls its "tech ecosystem" is defined by three categories of jobs that directly enable, produce, or facilitate technology: 1) tech jobs in tech industries, 2) non-tech jobs in tech industries and 3) tech jobs in non-tech industries. The last of these categories, "tech jobs in non-tech industries" accounts for jobs that are not typically considered tech-related but which very much enable, produce, and facilitate technology in non-tech industry companies.

Components of the Tech Ecosystem



TECH JOBS IN TECH INDUSTRIES Example: Programmer at Vengo

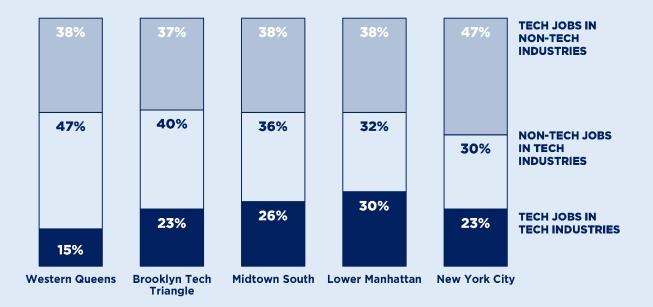
NON-TECH JOBS IN TECH INDUSTRIES Example: Sales Representative at Lyft

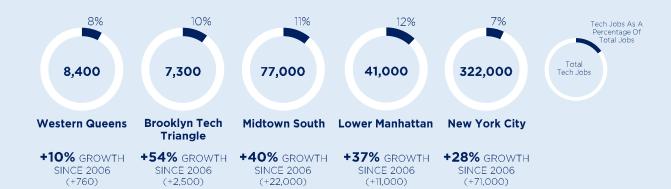
TECH JOBS IN NON-TECH INDUSTRIES Example: Web Developer at Citi

Composition of the Tech Ecosystem Citywide and in Western Queens (2016)

TOP TECH OCCUPATIONS	City	W. Qns	TOP TECH INDUSTRIES	City	W. Qns
Software Developers, Applications	29,700	500	Computer Systems Design and Related Services	65,800	300
Computer User Support Specialists	21,300	400	Other Information Services	37,400	1,900
Computer Systems Analysts	21,100	300	Scientific Research and Development Services	17,500	_
Advertising Sales Agents	20,000	200	Wired Telecommunications Carriers	14,500	100
Computer and Information Systems Managers	15,700	300	Electronic Shopping and Mail- Order Houses	12,700	1,900

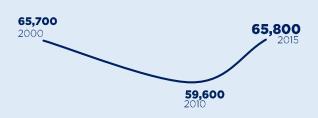
New York City Tech Districts Compared (2016)

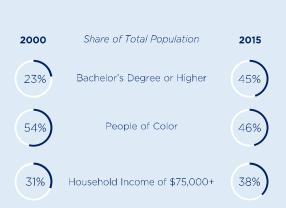




Western Queens Demographic Trends

Residential Population





THE OPPORTUNITY

Tech districts take root in urban places with large employment bases, strong institutional anchors, and a diverse mix of uses. Today, **Western Queens contains many of** the essential ingredients necessary for a tech district to exist. In order for the area to thrive and become a true innovation district, it needs a focused roadmap to better coordinate tech-supportive resources. The Western Queens Tech Roadmap can generate a greater density of activity and catalyze economic opportunities for all community members.

Tech districts share a few basic characteristics, many of which are already in Western Queens:

Tech districts catalyze collaboration and expedite the commercialization of new concepts. Western Queens is home to a variety of tech companies which cut across industries and disciplines. Creating stronger physical and programmatic links between these companies can increase the area's visibility as a hub of innovation.

Successful districts provide a mixed-use live-work environment and prioritize quality of life. The wealth of cultural and educational institutions, strength and distribution of transportation nodes, and vibrancy of residential activity indicate that a growing live/work/learn/play culture exists in Western Queens. Prioritizing interventions that foster true 24/7 activity in the area and welcome an even greater diversity of users can help attract even stronger tech-focused energy.

cycle. Western Queens' cluster of industrial buildings—many of which house some of the area's most innovative local enterprises—is well positioned to support an expansion of the tech ecosystem, which increasingly benefits from a close proximity between office and production space.

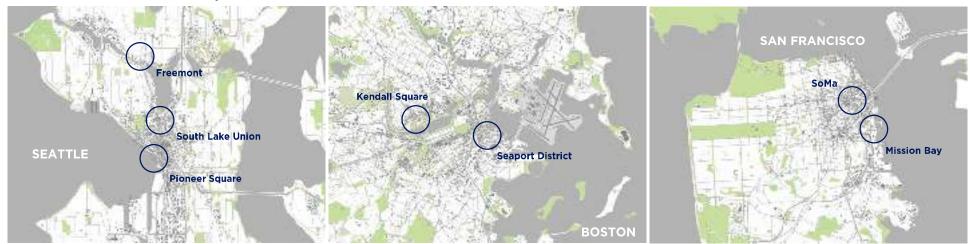
Tech districts reflect the strengths of their individual regional economies. Cultivated over generations, New York City's predominant economic generators include the advertising, film, media, finance, fashion, and retail industries. Western Queens' tech ecosystem already employs thousands of New Yorkers in several of these industries—in companies that include Glassful and Shapeways—and has the potential to make the city a tech leader in other growing sectors.

Cities can support multiple tech districts. Boston, San Francisco, and Seattle are home to several independently successful urban tech districts. In New York City, Manhattan alone is home to several clusters of tech activity, including Midtown South—centered around the Flatiron district—and Lower Manhattan, where tech activity has grown at a steady pace in recent years. Together with Brooklyn's largest tech cluster, the Brooklyn Tech Triangle, these districts represent a significant portion of the city's tech ecosystem. All of them, distinct in their focus, and tied to one another by the city's robust transportation system, drive New York City's position as a global leader in the development of new technologies.

From Boston's Kendall Square to San Francisco's SoMa neighborhood, successful tech districts tend to share a set of common qualities that, when paired together, help to strengthen their visibility as a cohesive hub of tech activity. These qualities can generally be categorized into three buckets:

- People includes workforce development programs, academic anchors, job diversity, and access to digital tools.
- Place includes tech office space for companies at all stages, physical and digital connectivity, and a healthy mix of development uses.
- Program includes tech-supportive regulations, a strong identity, and a robust mix of year-round tech events.

Cities With Multinodal Tech Ecosystems



WESTERN QUEENS ASSETS MAPPED



PEOPLE-FOCUSED ASSETS

PLACE-BASED ASSETS

PROGRAMMATIC ASSETS NYCHA DEVELOPMENTS

LONG ISLAND CITY CORE STUDY AREA

LONG ISLAND CITY IBZ

O FERRY LANDINGS

• SUBWAY STATIONS

• CITIBIKE STATIONS

6 Tech-Focused High Schools 2 Tech-Focused Postsecondary Institutions **5 Major Workforce Development Organizations**

57 Acres of Park 13 Subway Stations 3 Ferry Landings 50 Citibike Stations 20,000 Residential Units Under Development **3 Million Square Feet of Office Space Under Development**

1 Tech Incubator **10 Major Cultural Institutions**

11,000 Residents Living in Ravenswood and Queensbridge Houses

#1 Most Productive IBZ in New York City





FRAMEWORK

In order to promote the equitable growth of the tech ecosystem within Western Queens, strategic interventions must target gaps in existing people-focused, place-based, and programmatic assets. While Western Queens has strong academic anchors and a wealth of local talent, there is room for a more robust and coordinated effort that meets the specific training and job placement needs of the local tech ecosystem. Western Queens has a tech-supportive mix of building types and uses linked to the rest of the city by strong multimodal transportation links, but it lacks affordable work spaces and suffers from poor internal connectivity necessary to generate a greater density of activity. Finally, while the area hosts a healthy mix of tech-focused events year-round, it lacks the coordination necessary to create a strong unified tech district and brand.

People-focused initiatives support the growth of talent and the development of a robust and stable workforce pipeline.

Place-based initiatives foster the creation of new tech-supportive physical spaces, guided by a huband-spoke development model.

Programmatic initiatives incentivize tech growth in the area and clearly articulate the value of innovating in Western Queens.

PEOPLE-FOCUSED INITIATIVES





GOALS

Close the gap between tech training programs and Western Queens residents who lack the baseline hard and soft skills necessary to succeed in these programs.

Increase rates of employment for local residents through robust partnerships with tech employers. creating better matches between employee skills and employer needs.

Western Queens benefits from the presence of various educational institutions that provide tech training services to residents and support the live/work/learn/play environment that makes Western Queens an attractive place for tech companies to locate. A slate of K-12 and postsecondary academic institutions call Western Queens home, including various schools that train students in tech-related skills. The Frank Sinatra School of the Arts, Information Technology High School, Energy Tech High School, Queens Vocational and Technical High School, and Aviation High School are all home to programs designed to prepare students for the tech ecosystem. These programs are available to a combined student population of approximately 6,000. In addition, LaGuardia Community College (LAGCC) trains approximately 45,000 students each year in a variety of tech-related majors and programs, including Computer Science, Computer Technology, and New Media Technology.

LAGCC also actively provides training and mentorship opportunities to local residents and is in the process of establishing a comprehensive entrepreneurship training center for teaching, research, and business advising open to residents across Western Queens.

LAGCC's TechIMPACT program, funded through a grant from the US Department of Labor, announced in July 2017, will train 325 young adults between the ages of 17 to 29 to enter into tech careers by June of 2020. Students will receive training in web development and network support along with career development and placement. Partners in the program will include the NYC Workforce Development Board, LICP, and private sector partners including General Assembly, Udacity, Software Guild, Uncubed.com, IBM and Walmart.

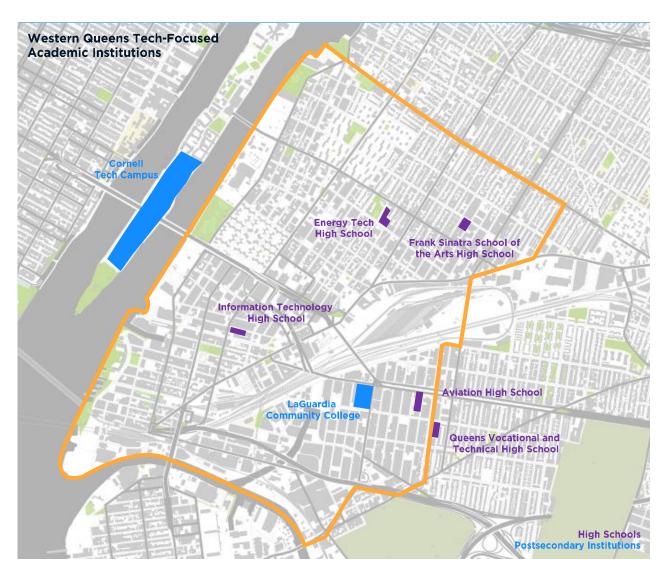
Cornell Tech's Roosevelt Island campus, located one subway stop away from Western Queens and opened in September 2017, is home to various tech-focused postsecondary degree programs in science, law, and business. When completed, the highly-anticipated campus will be home to over 2.000 students and faculty members, bringing a wave of new energy to the area that has the potential to spill over into Western Queens and spur growth in the local tech ecosystem.

In addition to the area's strong academic institutions, various local private and non-profit organizations provide job placement support and training to Western Queens residents. C4Q,

for instance. provides educational programming and employment services, along with a suite of resources designed to support local residents entering or reentering the workforce. Citywide initiatives, including those being advanced by the NYC Tech Talent Pipeline (TTP), also provide vital services across Western Queens. However, even with these strong City and local efforts, gaps in tech training and pre-training opportunities remain. Conversations with local stakeholders also reveal a need for stronger coordination amongst entities working within local training and worker support spaces.







Initiative 1: Prepare disadvantaged residents to succeed in existing tech training programs.

Leverage and expand pre-training programs that can help close gaps between existing tech training programs and Western Queens residents, with an emphasis on supporting people underrepresented in the area's tech ecosystem.

Western Queens has a sizable NYCHA population and high incidence of poverty. The area's 11.000 NYCHA residents represent up to 17 percent of all people who call Western Queens home. Large segments of the local population have been underrepresented in local tech employment, including the 20 percent of Western Queens residents living below the poverty line. While various workforce development organizations are active in the area, and some of these successfully provide training opportunities to tech-focused jobseeking residents, there is a need for greater emphasis on pre-training. With proper training, most working-age Western Queens residents could participate in the area's growing tech ecosystem.

Many existing training programs suffer from limited awareness and high trainee attrition rates. TTP is the City's tech industry partnership, launched by Mayor Bill de Blasio in May 2014. Its purpose is to work together with employers to define tech talent needs, develop solutions, and drive access at scale throughout the city. Over the past three years, TTP has worked with industry partners and tech training providers such as Per Scholas, Flatiron School, CUNY, Microsoft, General Assembly, and the NY Code and Design Academy to equip New

Yorkers who have little to no experience in the tech sphere with the skills needed to secure and succeed in entry level jobs in New York City. TTP has previously partnered with LAGCC and other local organizations to gain insights about local tech company needs and inform the design of trainings deployed in Western Queens. However, local resident and tech company participation in these programs has remained relatively low due to limited awareness, and high student attrition rates.

In the winter of 2016, TTP launched a fiveborough mobilization campaign featuring ads in subway cars, stations, and bus shelters that were designed to communicate information about tech jobs and potential training opportunities in plain language. Nearly one in five New Yorkers who responded to this campaign indicated that they either wanted a career in tech and did not know where to begin. or that they did not have sufficient information on tech careers to proceed, challenges that well-publicized pre-training efforts could address.

1.1: Pursue customized funding to provide pre-training to disadvantaged residents in the area. Western Queens is in a position to build a strong, centralized, and specialized program that can bridge existing gaps between tech training programs—such as those offered by the City through TTP-and local residents.

Local institutions with experience in training residents and other community-based organizations familiar with the diverse populations of Western Queens should be leveraged to maximize this initiative's reach and ensure its long-term success. Federal and state funding sources, such as New York State's Tech Training Fund and workforce development funds disseminated through the State's Regional Economic Development Councils should be sought in support of this effort.

1.2: Ensure that trainings are flexible and interactive, combining "hard" and "soft" skills development. Adequately preparing applicants to succeed in tech training programs will require a multi-pronged includes approach that mentorship opportunities as well as lab- and classroombased practical training. Mentorship services should be provided to applicants throughout

the pre-training process, with extended mentorship opportunities offered to trainees who successfully enter their corresponding training programs. This will ensure that applicants, particularly those who have never had exposure to tech, feel supported throughout the process—especially as they deploy and market their newly developed skills in search of tech ecosystem jobs. Stronger connections between existing workforce development organizations and tech training providers should also be developed to better link participants of these programs to potential tech training opportunities.

1.3: Deliver pre-training programs within neighborhoods to maximize access. Partnerships with community-based organizations and other neighborhood institutions, such as the Queens Library, should be leveraged so that trainings can—to the extent possible—be provided in existing spaces that community members are already familiar with and can easily access. In certain cases, temporary pop-up classrooms and labs should be installed in convenient areas to raise awareness about training opportunities and work to minimize attrition rates.

1.4: Incentivize local tech firms to participate in these programs, by donating valuable time, resources, and expertise. Tech-supportive incentives and regulatory tools should be customized to provide incentives to tech companies that commit to participating in new pre-training programs. Tech companies should also be encouraged to participate in existing initiatives. such as TTP's efforts to develop strong industry insights, to ensure that their talent needs are directly shaping workforce development offerings in Western Queens. Existing partnerships, such as that between the Long Island City Partnership (LICP) and Cornell Tech. should be strengthened to secure greater participation of local tech-related institutions in area training efforts. In the case of Cornell Tech. this may include the creation of a streamlined process for students and recent alumni to support local training efforts through mentorship and curriculum development support.

Timeline

Immediate Next Steps

- Convene representatives from citywide and local training providers to identify skills gaps and devise a pre-training curriculum that adequately prepares applicants with varying levels of experience for existing training programs.
- Explore partnerships with community-based organizations to maximize awareness about pretraining programs.
- Explore potential sources of federal, state, and city funding for a first phase pre-training program.

Intermediate Term

- Launch a pilot training program that is flexible, accessible, and inclusive of tech firms.
- Market pre-training programs through existing community channels.

Long Term

 Reconvene stakeholders to evaluate the success of pre-training pilot programs and devise a strategy for modifying the program as needed and scaling it up to reach residents in other Western Queens neighborhoods.

Potential Partners

LaGuardia Community College, Queens College, local tech high schools, local CBOs (e.g., Urban Upbound and C4Q), and NYC Tech Talent Pipeline.

Case Study: Per Scholas

New York City, Atlanta, Columbus, Cincinnati, Dallas, and Washington DC.

Per Scholas is a tech training program with a national footprint. In addition to partnerships with the NYC Tech Talent Pipeline—which provide Series A trainings for prospective IT **Engineers and Quality Assurance Testers—Per** Scholas also offers programs targeted to recent graduates with a high school diploma or GED, offering participants the opportunity to receive certifications in a variety of technical disciplines, including IT support, network engineering, and cybersecurity. These programs, which run for 15-20 weeks, allow working New Yorkers to earn their certifications regardless of whether or not they have previous tech experience, and teach students the most up-to-date technologies and platforms. Programs incorporate career counseling, workplace exposure, and connections to employers. Through its partnerships with tech firms and other corporations, Per Scholas has connected thousands to job opportunities citywide. The organization has previously partnered with NYCHA/REES to deliver trainings to residents of subsidized housing developments, and there is an opportunity to better connect to vulnerable populations through more targeted pre-training efforts.

Case Study Key Takeaways • Tech training programs can provide job-seekers who lack formal credentials valuable skills paired with certifications necessary for participation in today's job market. • Training programs can provide limited foundational training, so trainees are typically expected to have a baseline amount of knowledge and skill in order to succeed in such programs. • Programs must be continuously updated to ensure that their curriculum aligns with most current industry needs and trends.

Initiative 2: Strengthen the tech workforce pipeline to better align with job placement opportunities.

Build stronger partnerships with tech employers to develop a shared understanding of their needs and expand opportunities for on-the-job practical training. Western Queens residents benefit from having access to several workforce development programs, but their effectiveness is limited by minimal coordination between programs and tech employers. Strong alignment between training providers and employers is an essential component of any workforce development pipeline. All job training providers, including primary and secondary schools, institutions of higher learning, workforce development partners, and community-based organizations, need a vehicle to understand the needs of target employers and tailor their teaching to meet these immediate needs. In Western Queens, there is currently a misalignment between training providers and employers, which has resulted in a general lack of awareness among local residents, students, and other would-be employees. Partnerships organizations between individual increasingly addressing this challenge, but there is room for a more centrally-coordinated process to ensure greater alignment.

There are currently five tech-focused high schools and several tech-related post-secondary programs available to students in Western Queens, but there is no school-to-tech-job pipeline to adequately link these students to local tech jobs. Conversations with

local stakeholders reveal a lack of cultural fluency among students caused by the absence of strong touch points between students. industry leaders, and tech employers. Coupled with limited training in marketable tech skills offered to students, this minimal visibility has contributed to a general lack of understanding among students of how to identify employment opportunities, market their skills, and ultimately secure a job commensurate with their training. The result is a promising young population of potential tech workers who do not feel prepared to fill local tech jobs, let alone seek them out. A coordinated strategy is needed to provide these students with the skills they need to succeed, and connect them potential job opportunities through a robust, seamless, and stable pipeline.

Employers typically make decisions based on applicants' credentials as opposed to their skills, limiting access to jobs for countless residents who might have the talent and experience to excel in a particular tech job but who lack a formal tech-focused degree. Tech ecosystem jobs often require specialized technical skills and an ability to demonstrate proficiency through submission of prior work portfolios.

Nationally-recognized training providers, such as General Assembly and Per Scholas, build credentials by partnering with employers to align their curricula to the latest industry skills needs and to articulate the benefits of employers hiring their graduates. The City has partnered with higher learning institutions and companies like LinkedIn to build industry insights and to help tech companies more uniformly communicate their skills needs to jobseekers. There is an opportunity to create stronger links between Western Queens tech ecosystem employers and training providers by encouraging greater local participation in these citywide efforts.

2.1: Engage Western Queens tech employers to expand participation in City-led efforts to develop a shared understanding of the skills required of new employees. Western Queens tech companies should be encouraged to join the TTP initiative to develop a common language around the hard and soft skills that employers expect applicants to bring with them. By bringing tech ecosystem employers to the table, and meaningfully engaging them on a permanent basis, training providers operating in the area can be empowered to tailor curricula to address skills gaps faced by local residents and students. Stronger connections to TTP, led by a new Western Queens Tech Council (see initiative 6), can also allow training providers to better articulate their services and create a more robust feedback loop between employers and training providers.

2.2: Adopt an employer-driven model to training residents for local tech jobs.

A separate outcome of building stronger partnerships between employers, workforce development organizations, and training providers, should be the expansion of programs that allow local tech job-seekers to receive practical training directly from would-be employers. By ensuring that programs such as

the ApprenticeNYC initiative, launched in March 2018, have a strong presence in Western Queens, local tech companies stand to benefit significantly from an improved pipeline of strong local talent. These companies should be incentivized to devote resources to train residents. Potential contributions include advising training program administrators on their curriculum and providing mentorship opportunities to trainees.

2.3: Implement a "train-and-place" model of workforce development in Western Queens. Building upon existing TTP training programs and the ApprenticeNYC initiative, an employer-driven training model should be deployed to better connect area tech companies with local talent. A non-profit organization—to be identified by the proposed Western Queens Tech Council, and potentially housed within it-can track local talent needs and match Western Queens job-seekers to suitable training programs. In cases where no training program can adequately prepare candidates for the needs of a specific vacant role, this organization can work with training providers and the tech company to develop a new targeted training. Trainees would participate in a new or existing program and be issued a certification upon their successful

completion of the course. Employers who participate in this effort would agree to offer some in-house on-the-job training in tandem with the course and also agree to interview all certified candidates.

2.4: Promote apprenticeships as a model for connecting young talent to jobs. Today, the New York State Department of Labor frames apprenticeships as "the process of learning a skilled trade through onthe job training plus related classroom education." This definition fuels a widely-held perception among potential beneficiaries that training funds can only be applied to traditional "trades," such as construction, maintenance. and heavy manufacturing. A tech job, particularly one that requires technical skills is the modern-day version of the traditional "trade" job. The Tech Council should work with City agencies to help local tech companies better frame their employees' occupations so that they match the 1,300 occupations applicable for State-funded apprenticeships such as computer programmers and ecommerce specialists.

In support of this, Federal and State funding should be made available to Western Queens postsecondary students to support paid

internships at local tech companies. In return for subsidized employment, local tech firms should commit to providing a certain number of full-time jobs to applicable students. Local postsecondary institutions, in partnership with local tech leaders, can pre-train workers for their placements and serve as trusted talent conveners for participating employers. Interested tech companies should be guided through the process of joining the State's Apprenticeship program and applying for relevant funds. Apprentices who participate can be offered the opportunity to expand their course load, in certain cases, to attain an Associate degree in their chosen field.

2.5: Promote efforts to make Federal Work Study funding available to students looking to receive practical training in tech-related fields. Institutions of higher learning are bounded by strict quidelines concerning the use of Federal Work Study Program funds. Among stipulations, colleges and universities can only maximize their work study funding by submitting proof that participating students are employed by a non-profit organization and performing work that serves a demonstrable public purpose. This burden is onerous for most students and institutions, and limits the types of jobs applicable students can undertake to subsidize their education. Mechanisms should be explored to allow work study beneficiaries students to apply these funds to internships that offer practical experience in tech. The Western Queens Tech Council can partner with local tech companies and relevant City agencies to identify pathways for students to work in tech roles in some capacity while meeting Federal Work Study Program requirements.





Timeline

Immediate Next Steps

- Convene local tech companies, workforce development organizations, and training providers to participate in TTP's efforts to develop a shared understanding of employers' needs.
- Develop a system for matching employer needs to existing training programs to identify potential gaps.
- Recruit tech firms as active participants in training efforts.
- Seek funding from government, non-profit, and private entities.

Intermediate Term

- Conduct broad outreach to local residents and students who are potential candidates for participation in training programs
- Recruit trainees and begin to establish a rapport with employers who can satisfy their needs by hiring program graduates.

Long Term

• Evaluate progress and revise approaches as needed.

Potential Partners

NYC Tech Talent Pipeline, LaGuardia Community College, Queens College, local CBOs (e.g., Urban Upbound and C4Q), local tech firms and startups

Case Study: West Philadelphia Skills Initiative

Philadelphia

Since 2010, the West Philadelphia Skills Initiative has partnered with local employers to help them fill vacancies with local unemployed and underemployed residents. West Philadelphia is home to the University of Pennsylvania, Drexel University and numerous other medical and research organizations. The area is also home to some of the city's most underprivileged neighborhoods, where unemployment rates can exceed 25 percent and up to 40 percent of residents live in poverty. The Skills Initiative—managed by the University City District and funded entirely through philanthropic contributions—is designed to connect these residents to quality jobs in or near their own communities. The program's recruitment, selection, and training activities are flexible and tailored to specific employer needs. Employers who partner with the Skills Initiative identify vacant positions, agree to interview program graduates, and give them priority when considering candidates to hire. Trainings run between 4 and 26 weeks and are designed to train participants in the skills necessary for the position in question. Each course incorporates on-the-job training and modules that build technical and soft skills. On average, 90 percent of graduates achieve a job placement and enjoy hourly wages that average \$13.37. In its first five years, the Skills Initiative had 610 participants who benefited from a combined \$12M in new wages resulting from job placements.

Case Study Key Takeaways

- A BID/non-profit partnership structure can be leveraged to create a talent development program, so long as it is able to become a trusted convener of talent.
- Cultivating strong partnerships with employers is essential for ensuring that programs remain current and successful.
- Beyond providing resources and other means of organizational support, local educational anchors can also prove to be strong employer partners.



PLACE-BASED INITIATIVES





GOALS

Create a density of activity and opportunities for informal collaboration through direct physical investments to predetermined target nodes connected by clearly identifiable and easily navigable corridors.

Expand existing touch points between the tech ecosystem and tech-supportive communities that call Western Queens home, such as the area's vibrant arts community.

Foster interactions between talent and tech employers, increase exposure to prototyping, and provide brand-building tech events.

A diversity of office and production spaces is essential to a healthy tech ecosystem. While the local housing market has grown significantly over the past decade, economic forces have made speculative office space construction difficult. Recent projects, such as the renovation of the Brewster building-home to JetBlue—and the construction of Two Gotham Center, have required significant contributions from the City. Today, Western Queens is home to over 13 million square feet of office space, with 3 million square feet of ground-up construction and 1 million square feet of office space renovations in the pipeline. Major projects include the proposed Silvercup Studios space, and the Class-A One and Three Gotham Center buildings. Office rents average \$20-35 per square foot, priced below Manhattan tech districts such as Midtown South (\$58-\$65) and Lower Manhattan (\$50-\$57), and in line with rents within the Brooklyn Tech Triangle (\$32-\$37). Tech companies, particularly those looking to get an early foothold within the local tech ecosystem, seek affordable office rents. While rents in the area continue to be comparatively affordable versus other districts, an increase of over 40 percent since 2010 is making it harder for emerging and early-stage tech companies to locate in Western Queens. There is a clear need for dedicated affordable

office space to attract and retain emerging and early-stage tech companies.

Central to the Western Queens economy is its strong industrial activity, anchored by the Long Island City Industrial Business Zone (the LIC IBZ), New York City's most productive IBZ. In total, the area's industrial stock is comprised of over 24 million square feet of factory, storage. and processing space. Much of this space was built in the late 19th and early 20th century. when Western Queens' industrial production was at its peak. As a result, these spaces benefit from large floorplates and high ceilings. physical qualities that are seen now desired by many tech ecosystem businesses in search of production and office space. This trend has led to conversions of industrial stock into creative office space in portions of Western Queens. Due to this and other factors, industrial stock in the area has fallen by over 2 million square feet since 2010.

Western Queens enjoys rapid and convenient multimodal transportation links to the city's employment and residential centers. Served by eight subway lines, 13 subway stations, dozens of bus routes, two citywide ferry stations, two Long Island Railroad stations, and multiple vehicular connections, Western Queens benefits

from strong connections to other city tech districts and to two of the metropolitan area's three major international airports. The proposed Brooklyn-Queens Connector, a streetcar slated to connect the two boroughs via Western Queens, will provide additional linkages between the area and its surroundings while also strengthening internal district-level connections.

The latter is particularly significant because Western Queens currently suffers from a lack of internal connectivity. The 200-acre Sunnyside Yard and proliferation of rail and roadway viaducts fragment the area, breaking up the urban grid and generating an unwelcoming pedestrian experience. Wide streets. confusingly large intersections, and deferred street maintenance throughout pose dangers for pedestrians and cyclists and hamper retail activity. The lack of a clear and consistent wayfinding program means that Western Queens is generally difficult to navigate even for frequent users. This poses practical challenges for jobseekers traveling or clients moving between interviews, meetings. In the face of these challenges, the New York City Department of Transportation (DOT), Department of City Planning (DCP), LICP, and Department of Design and

Construction (DDC), are currently working to address transportation and wayfinding issues through individual and collaborative efforts.

Digital connectivity is another key infrastructure element necessary for tech district success. Tech companies need a premium and reliable high-speed internet connection in order to achieve efficiency and competitiveness, and students need speedy internet connections to learn and apply their practical training. Western Queens lags the city's more established tech districts in broadband access. Separately, local residents-particularly those who are part of disadvantaged communities—continue to have limited to no access to digital resources, and are becoming increasingly disconnected. Ongoing efforts at the local and citywide scale are working to bridge these gaps. Universal wifi, for instance, is being delivered to Queensbridge Houses via a program called Queensbridge Connected. This initiative, the largest affordable housing wifi effort underway in the United States, also includes digital skills training for Queensbridge residents, to ensure that all beneficiaries are able to maximize this valuable new resource. Another effort, the New York City Economic Development Corporation's (EDC) Connect IBZ program, is working to expand high-speed commercial broadband to

the LIC IBZ. LinkNYC kiosks, the multipurpose digital access points being deployed throughout the city, are currently being expanded throughout Western Queens to provide superfast wifi and greater access to City services to Long Island City, Sunnyside, Astoria, and Woodside.



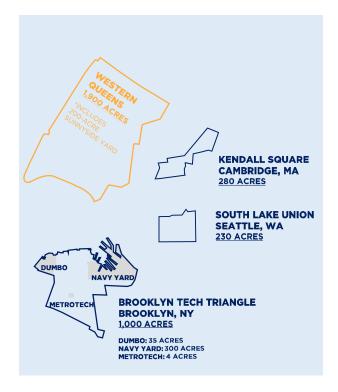
Initiative 3: Define geographic nodes to focus investment.

Create a density of activity to attract and link residents, students, and tech firms, boosting the Western Queens tech ecosystem and encouraging informal connections.

At 1.900 acres, the Western Queens as a whole is significantly larger than other successful urban tech districts, such as Cambridge's Kendall Square (at 280 acres), San Francisco's SoMa (at 410 acres), and Seattle's South Lake Union (at 230 acres). While people-focused and programmatic initiatives should aim to benefit all constituencies within the community, placebased interventions should be geographically targeted to maximize catalytic activity in key areas. The Brooklyn Tech Triangle—1,000 acres in total but anchored by smaller, dense nodes of concentrated activity—demonstrates that a focused strategy paired with coordinated investment can result in the development of a recognizable tech district with significant employment growth.

Multiple nodes of activity and strong assets already exist in the area, but Western Queens must cultivate a greater density to truly be recognized as a leading New York City tech district. Density of activity is necessary to generate interest and awareness of a tech hub among companies, as it encourages informal connections that are the linchpin of collaboration and innovation. Western Queens is made up of disparate residential, cultural, commercial, and industrial zones that are not adequately linked to one another. Sunnyside

Yard forms a major physical barrier to convenient movement, and roadway designs throughout the area hinder safe pedestrian access. Western Queens also lacks public gathering places and walkable retail corridors that are characteristic of a vibrant urban realm that encourages the exchange of ideas across people and industries.



3.1: Identify strategic nodes that, when added together, comprise roughly 300 acres to focus place-based interventions that promote a techsupportive density of activity. A hub and spokes model should inform place-based investments in the district, prioritizing increased density within nodes (hubs) and built form improvements along corridors connecting them (spokes). The activity generated through this strategy can ensure that Western Queens develops the physical feel of a true tech district with well-linked hotspots of diverse activities that support innovation. The selection of nodes should leverage existing concentrations of tech ecosystem assets-including educational anchors, production zones, and tech-desirable buildings. Nodes should also incorporate one or more community hubs and be accessible to dense residential areas, particularly those with a high concentration of populations who are underrepresented in the tech ecosystem. Financial and regulatory incentives that promote the creation of office and industrial space should be deployed within geographic focus nodes when possible, in order to rapidly pilot efforts and maximize catalytic effects.

Based on the geographic distribution of tech ecosystem assets, potential nodes are shown in the map below. A description of potential activities within each node can be found on the following page.



- Education and Industry Cluster: With over 45,000 students, LaGuardia Community College is a local leader in tech education and is located within a short distance from nearby tech-heavy office buildings, including both the Falchi and Factory buildings, with tenants such as Uber, Lyft, and Spaces. This potential node straddle Sunnyside Yard at one of its narrowest points to connect to the Queens Plaza area of the Long Island City core.
- Visual and Performing Arts Cluster: Capitalizing on the gravitational pull of the Kaufmann Astoria Studios campus, which has already attracted adjacent mixed-use development, this proposed node also includes the Museum of the Moving Image, Frank Sinatra School of the Arts, and the Standard Motors Building. The node is also well-connected to communities in Astoria to the north, and Jackson Heights and Woodside to the east.
- Waterfront Industrial Cluster: This proposed node contains the waterfront segments of the Long Island City IBZ to the north of the Ed Koch Queensboro Bridge. It also contains Queensbridge Houses, and a site where focused investment can more robustly integrate the tech ecosystem into the local

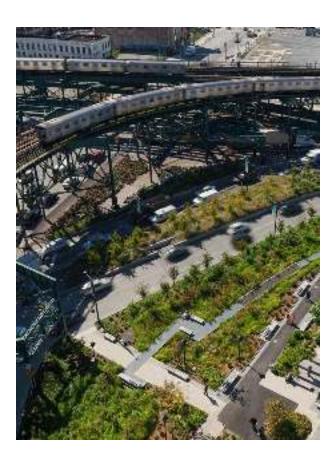
community. Piloting place-based efforts here can help test ways in which opportunities can be generated for Western Queens residents who are currently most disconnected from the tech industry.

As the City looks to expand its Neighborhood Innovation Lab concept in other communities, it should look to the potential Waterfront Industrial Cluster as a prime candidate site that is positioned to generate significant benefits for residents while promoting the growth of New York City's tech ecosystem. Neighborhood Innovation Labs are an effort being led by the Mayor's Office of Technology and Innovation to pilot smart city technologies to help communities address challenges. Should Western Queens be selected as the next site, an extensive community outreach program should inform demonstration projects competitions. bringing together tech companies—including local innovators—to generate solutions to local challenges and needs.

3.2: Support ongoing initiatives to activate retail, create more desirable open space, improve wayfinding, and increase mobility options. Retail and open space not only contribute to a vital urban community, but also act as critical venues for informal interaction and collaboration between tech workers, academics, students, and residents. Numerous ongoing initiatives are working to address transportation and circulation issues in Western Queens. These efforts include the implementation of the 2014 Western Queens Transportation Study, DOT and DDC's joint \$80 million Hunters Point Area-Wide Reconstruction Project, DCP's LIC Links. DOT and LICP's WalkNYC program partnership, and the June 2017 \$100,000 grant to the LICP through SBS's Neighborhood Challenge. These initiatives should be leveraged to deploy digital tools and smart city infrastructure in strategic locations throughout Western Queens to creatively enhance connectivity and improve wavfinding.

Potential Partners

City agencies (MOTI, DCP, DOT), community organizations, Queensbridge community members, LICP, large tech anchors, developers, and academic institutions



Timeline

Immediate Next Steps

- Confirm geographic boundaries of focus nodes, and identify optimal streets as connector corridors.
- Promote partnerships between the Mayor's Office of Technology and Innovation and local organizations and institutions with the aim of establishing a Neighborhood Innovation Lab in Western Queens.
- Collaborate with City agencies, community organizations, and the LICP to develop a strategy to physically connect identified clusters.
- Advocate for the deployment of smart city technologies as a critical component of ongoing and future public transportation and wayfinding investments, adapting existing funding streams.
- Create outdoor programming for the nodes and connectors, including pop-up public spaces, outdoor games and furniture, and food trucks.

Intermediate Term

- Deploy pilot incentives programs within geographic nodes to catalyze new tech activity.
- Plan for additional retail and open space along connecting corridors while continuing to deploy pop-up spaces and plazas in near-term.
- Roll out smart city technologies and wayfinding interventions along corridors.

Long Term

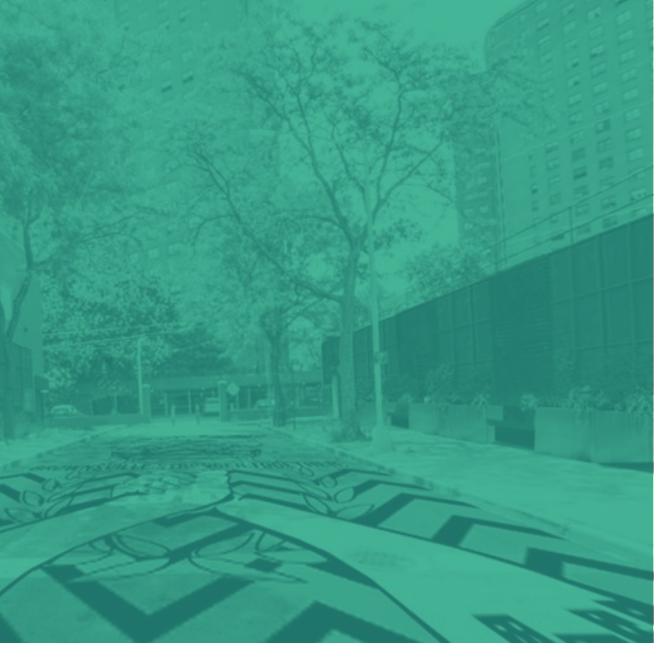
• Ensure high-quality maintenance of streetscaping, wayfinding, and open space within the focus nodes and along corridors.

Case Study: Neighborhood Innovation Lab

Brownsville, New York

The Brownsville neighborhood of Brooklyn is a vibrant community facing significant challenges in the area of public health, safety and economic opportunity. In March 2017, the City development of a announced the Neighborhood Innovation Lab in Brownsville to identify and evaluate possible tech solutions to improve quality of life and promote local economic development. Supported through an initial \$250,000 in funding from the City, the Lab is a partnership between the Mayor's Office of Technology and Innovation, NYU's Center for Urban Science and Progress, NYCEDC, and community organizations led by the **Brownsville Community Justice Center.**

Through months of community engagement. community advisors are working with the City to identity key local needs to be tackled. Once fully rolled out, the Lab will provide academic institutions and tech firms with the opportunity to pilot new technologies to address these needs and collect community feedback, with public programming and demonstrations centered around the outdoor Osborn plaza. As a part of the Lab, the City has launched Calls for Innovation specifically focused on Brownsville. Beginning in the summer of 2017, the City rolled out the first round of new smart city solutions, including trash cans that can detect when they are full, smart benches for phone charging, and interactive digital kiosks.



Case Study: North Avenue Smart Corridor Atlanta

The City of Atlanta is piloting a \$3 million, 4-mile "smart corridor" project along its North Avenue, bookended by nodes at the Georgia Tech campus and Ponce City Market. The City is deploying innovative new technologies within the corridor to optimize traffic flow, improve safety, and generate economic development opportunities. A connected Internet of Things that includes smart traffic lights, cameras, sensors, and parking meters, all of which interact with and respond to vehicles on the street is currently being installed. In addition, a fiber-optic network is being installed to provide highspeed internet access to surrounding communities, and to ensure efficient communications with the City's traffic operations staff.

As part of the City's efforts \$250 million bond for smart city initiatives, all designed to elevate Atlanta as a place for tech and innovation, the City released an RFP in October 2016 to allow for the demonstration of autonomous vehicles along North Avenue. In April 2017, Together For Safer Roads—a global coalition of private sector companies investing in road safety—selected Atlanta as one of its three target cities. As part of the initiative, Atlanta, the only city in North America to have been selected, will leverage the resources of participating companies, including AIG, AT&T, IBM, and Facebook, to generate data-driven traffic solutions along the corridor.

In 2014, crash rates on North Avenue were twice as numerous as those statewide. Through the North Avenue Smart Corridor, the City will build upon these two initiatives to lay the groundwork for innovative transportation infrastructure, reduce collision rates, and test new technologies. In its efforts to identifying technological interventions that address specific community needs along the corridor. Atlanta has successfully attracted private-sector support, capitalized on the existing tech ecosystem around Georgia Tech, and begun marketing itself as a hub of tech and innovation.

Case Study Key Takeaways

- Connections between tech nodes are most successful when they are made up of strong corridors that prioritize safety, promote active use, and visibly incorporate technology.
- Demonstrated public support can attract private-sector involvement in tech-based solutions to address community needs.
- Community engagement is vital to understand local challenges and implement impactful solutions.

Initiative 4: Develop a physical hub for tech and innovation open to the entire community.

Build a central tech hub to expand access to tools, training, and affordable office space, and increase connections between the tech ecosystem and broader community.

Unlike other tech districts. Western Queens lacks a centralized hub to support the incubation of ideas and broaden the local community's exposure to the tech ecosystem. Successful tech districts are anchored by physical spaces where start-ups are supported by incubators and accelerators, workers in the tech ecosystem can intermingle, and community members can participate in public programming and learning.

Central hubs can become magnets for attracting a density of tech firms and promoting interdisciplinary innovation. Physical hubs also serve as community centers, providing space for public events, skills training, and workforce development that meets the needs of the community. For instance, many residents continue to lack access to the digital tools necessary to test and work with new technologies, and spaces to experiment, play, and interact with tech companies. While existing community centers like the Jacob A. Riis Neighborhood Settlement at Queensbridge Houses and Queens Library offer crucial services for residents, the community would benefit significantly from expanded spaces. access to digital resources, and, importantly, stronger connections to the local tech ecosystem.

Brooklyn Tech Triangle

NEWLAB

84,000 SF

Co-working **Prototyping Lab Event Space**

Midtown South



80,000 SF

Incubator **Conference Center Community Space**

Lower Manhattan



13,000 SF

Co-working Classrooms **Event Space** 4.1: Create an accessible, holistic innovation and learning hub of approximately 40,000-60,000 square feet to serve as a community nerve **center for tech.** This community innovation hub should support affordable incubator space for local tech start-ups and an open-door, experiential learning space for local students, residents, and community members. The hub should be located in one of the designated geographic focus areas, built either as a newly created space or as an expansion of an existing resource—such as LAGCC's NYDesigns facility or the Queens Library. Regardless of its siting, the hub should bring together local academic. community, workforce development, and industry partners to jointly manage and program the space.

4.2: Ensure that the hub includes event space, co-working space, academic classrooms, and maker space, as well as programmatic components, such as training and mentorship programs. The center can serve as a centralized venue for local tech competitions, demo days, and events, all of which would elevate the profile of Western Queens as a tech district, and provide muchneeded space for programming for the broader New York City ecosystem. The hub should offer

training and mentorship opportunities to local students, hosting field trips and after-school programs for primary and secondary students and more advanced offerings for local postsecondary students in coordination with the area's academic partners. Classrooms and state-of-the-art technical equipment can foster connections between emerging tech companies and spaces for students of all ages to learn about the tech ecosystem. Affordable spaces should also be made available for early-stage companies looking to grow in Western Queens, and a portion of this space may be specifically designated for companies founded by local alumni from LAGCC or Cornell Tech, in exchange for participation in training programs and mentorship for students and residents.

4.3: Provide public programming, such as meetups, workshops, conferences, and other series on a regular basis. Events—which can include biweekly small events and larger monthly and quarterly gatherings—should be well-publicized and open to the public. A signature annual or bi-annual event convening tech ecosystem firms, investors, and researchers, such as a large competition, hackathon, or demo days can be held at the hub to expand citywide exposure to the Western Queens tech ecosystem. Day-today programming can include designated community drop-in hours, allowing access to computers, software, and tools. With 3-D printers, a suite of software and computers, and specialized courses, the hub can become an around-the-clock center for the tech community, residents, and students. In the near term, while the hub is designed and built, modular pop-up spaces should be deployed in targeted neighborhoods to provide these community resources and promote the space.



Potential Partners

NYDesigns, Queens Library, Cornell Tech, local non-profit organizations, private developers, relevant City agencies

Timeline

Immediate Next Steps

- Identify a partnership of organizations and institutions to act as champions, who can select the operator of the community hub and define a management structure.
- Finalize parameters for the hub, including exact size and location, desired format (e.g., new or expanded facility), programming and governance strategy, marketing plan, and budget.
- Identify requests for proposals, issued by the City and others, that can potentially be leveraged to develop the facility.
- Pursue funding for construction, potentially including City and State grants and funding from private developers or companies.

Intermediate Term

- Deploy pop-up spaces across Western Queens—particularly in neighborhoods with the greatest need for additional physical tools—while a formal space
 is built.
- Determine a long-term business approach for the center, including potential revenue-generation and sponsorship opportunities.
- Hold a well-publicized launch event or competition to introduce the space to the New York City tech ecosystem, partnering with well-known organizations and companies.
- Engage in stakeholder outreach to market public events and spaces to community members.

Long Term

- Increase programming at the hub to include more frequent, larger-scale events and expanded mentorship and educational opportunities.
- Develop a self-sustaining operating model to ensure long-term financial sustainability.
- Evaluate success of program based on a variety of metrics, including but not limited to: 1) the number of start-up companies housed within the coworking and incubator space, 2) the number of community members who actively visit the space on an annual basis, 3) attendance at public events, and 4) the number of students successfully completing training or mentorship programs each year.

Case Studies: Urban Technology Growth Hubs and UI LABS

New York City. Chicago

In partnership with New Lab and Grand Central Tech, The New York City Economic Development Corporation (EDC) has invested \$7.2 million to create Urban Technology Growth Hubs in Brooklyn and Manhattan. The hubs offer space, equipment, pilot opportunities, and shared resources to early-stage companies in urban and hardware tech, with the aim to diversify New York's economy and elevate the city as a leader in technology and innovation.

- The Hub@GCT is a 50,000-square foot, purpose-built space that supports companies working to address urban issues in energy, waste, transportation, water, and other sectors. Selected companies benefit from below-market rate office space. The Hub was funded with a \$2.5 million grant from EDC and \$5 million in contributions from real estate developer Milstein Properties. The Hub now provides affordable space and resources to 35 urban tech member firms committed to solving complex contemporary urban challenges.
- At 84,000 square feet, Brooklyn Navy Yard's New Lab provides 24/7 ground- and mezzaninelevel fabrication shops, a 4,500-square-foot event space, and studios. New Lab is a first-in-itskind center for hardware technology, and was funded with a \$6.5 million contribution from the City Council and private support from the NYC Regional Center, the Fund for the City of New York, and the Goldman Sachs Urban Investment Group. New Lab now hosts 80 companies and has raised over \$250 million in venture funding.

UI LABS is a 94,000-square foot manufacturing tech hub located on Goose Island, the physical epicenter of Chicago's innovation economy. Championed by the University of Illinois, the City and State, and World Business Chicago, the center opened in 2015 and has over 300 members across industry. academia. government. community organizations, as well as over 1,000 visitors per month.

The hub provides a 24,000-square foot manufacturing floor with cutting-edge equipment, an innovation center featuring coworking space, and a variety of classrooms and event spaces that host programming and activities for its members and the public. The \$16.5 million project was partially funded by the City and State, an agreement with the U.S. Department of Defense, and through in-kind equipment donations from corporate partners.

Within its first three months. UI LABS had over 60 projects underway, \$18 million in operational revenue, and over 300 users working in the digital manufacturing space.

Case Study Key Takeaways

- Successful hubs are typically between 50,000 and 100,000 square feet, and provide access to event space, co-working space, classrooms, and digital/production tools.
- Hubs require between \$5 to \$15 million in capital investment, plus annual funding for ongoing operations. Private sector developers and corporations are a potential source of funding, though public funding is likely required.
- Successful implementation requires close coordination between public, private, and institutional partners.

PROGRAMMATIC INITIATIVES





GOALS

Develop a brand for Western Queens that leverages existing assets to support the growth of the local tech ecosystem.

Incentivize investments that support quality tech job creation in Western Queens.

Over the past decade, various key stakeholders in Western Queens have collaboratively developed tech-supportive resources that are growing the local tech ecosystem. These resources include relocation and expansion incentives for tech companies and real estate developers. While they have set an important precedent for other local programmatic support systems, they have on their own had a limited impact on attracting new tech activity to the area.

Tech companies and entrepreneurs in Western Queens take part in a variety of tech-focused events which take place throughout the year. organized by groups that include the Queens Tech Meetup, LAGCC, Spaces, LICP, and C4Q. While events are numerous and distributed throughout the year, there has been limited coordination between event organizers, limiting the reach of these events and the degree to which they've contributed to a cohesive techfocused brand for Western Queens, Indeed. despite the community's history of innovation and production, which lives on today, Western Queens currently has no unifying brand that leverages tech and innovation as a key selling point.

Similarly, while the City offers incentives to developers looking to bring certain types of space to the market, there is no coordinated means by which potential beneficiaries can apply for multiple incentives in a coordinated way. There is also a strong untapped potential to leverage and expand such incentives to more directly promote equity in Western Queens by—for instance—encourage the creation of high quality jobs accessible to underrepresented populations within the local community.





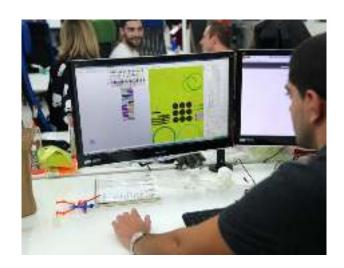
Initiative 5: Expand marketing of Western Queens tech opportunities.

Create a recognizable brand for Western Queens that leverages its growing tech ecosystem, as well as the many opportunities that the area offers to grow tech businesses.

Despite ongoing efforts to develop a coherent brand for Long Island City and Western Queens, there is little to no widespread recognition of the area as a hub of tech activity. Unlike the Brooklyn Tech Triangle, Lower Manhattan, and others, Western Queens has managed to grow its tech ecosystem without a tech-focused brand. However, the last decade has seen growth in other New York City tech districts far outpace that of Western Queens. As a result, brokers today have limited knowledge, and thus limited interest, in leasing tech-suitable space in Western Queens. Similarly, while there are tech meetups and other tech-supportive events that take place in Western Queens, limited reach means that Manhattanand Brooklyn-based tech programming receives significantly more attention.

Despite being home to large non-tech companies with significant tech components. such as JetBlue and Citibank, there are no major traditionally-defined tech companies headquartered in Western Queens. Tech growth typically occurs around tech anchors, the most attractive of which are large tech company headquarters. Emerging tech companies looking to cross-pollinate with potential industry partners—and, ultimately,

funders—seek out these anchors when looking for spaces to locate. A variety of tech ecosystem companies have a footprint in the area, including a number of companies that enjoy wide recognition—including Shapeways and Lyft. Nonetheless, the absence of a large tech company with a sizable headquarter-like presence in Western Queens has led smaller companies in the area to cluster around other types of anchors, including academic and arts institutions. The result is that, while Queens has a strong tech economy, its tech ecosystem has no identifiable center of gravity. Tech firms that might otherwise be interested in moving to Western Queens see no peers or collaborators to cluster around.



5.1: Convene a Western Queens Tech Council to craft a strong, focused techdriven brand, and promote a coordinated strategy for the tech district. The Council should be made up of members of the local tech ecosystem from the public, private, and non-profit sectors, and include representatives who have successfully launched businesses or products in Queensindividuals who best embody Queens' unique "make it here" ethos.

5.2: Build a brand for Western Queens that highlights Western Queens vibrant live, work, play culture, its rich diversity. and strong transit accessibility. Firms looking to locate, or relocate, within the city can be drawn by a local identity that emphasizes Western Queens' enduring diversity and culture of "making." Long Island City's long history of innovation, which lives on today in the area's robust prototyping and advanced manufacturing activity, should be a fundamental element of the area's brand and its use in attracting the next Vengo or Shapeways.

5.3: Develop targeted engagement and outreach campaigns for residents, real estate brokers and developers, and tech ecosystem influencers. The new Tech Council could be responsible for generating insights into the daily workings of the Western Queens tech ecosystem, strengthen connections between local and citywide partners to advance the aims of this strategy, and ensure that all in Western Queens are able to participate in the local tech ecosystem. The Council can engage residents to gauge the community's perspectives of the opportunities and challenges associated with calling the area home, while residents of other city neighborhoods can be convened to understand their assessment of the potential benefits and drawbacks of relocating to Western Queens. The Council can also engage real estate brokers and developers to understand their views on the local market and to promote the area's growing tech ecosystem and its related opportunities. The Tech Council can engage tech firms, both within Western Queens and citywide, to develop profiles of tech companies' physical and programmatic needs, and to discuss how those needs could be met by locating in Western Queens.





Potential Partners

LICP, C4Q, LAGCC, NYDesigns, local tech firms and startups.

Timeline

Immediate Next Steps

- Reconvene local tech stakeholders who participated in the Tech Roadmap Task Force to gauge interest in forming part of the Western Queens Tech Council.
- Formalize the mission, structure, responsibilities, and rules of the Council, whether as a new entity or as a subcommittee within an existing entity.
- Include successful, local tech stakeholders who have "made it" in Queens on the Council.

Intermediate Term

- Hire, at minimum, one full-time employee to serve as coordinator of engagement and outreach efforts.
- Identify target audiences and devise a marketing strategy to appeal to influential stakeholders.
- Launch a marketing campaign to increase exposure of Western Queens to real estate brokers, developers, influential tech firms, investors, and to the local community.

Long Term

- Expand the capacity of the Western Queens Council to scale outreach and marketing efforts.
- Continue to recruit participants to join the Tech Council to ensure a diversity of voices and champions for growth of the tech ecosystem.

Case Studies: Brooklyn Tech Triangle, Providence Design and Innovation District Brooklyn Tech Triangle, Providence, Rhode Island

The <u>Brooklyn Tech Triangle</u>, a tech district approximately 1,000 acres in size, is made up of three separate tech nodes: Downtown Brooklyn, DUMBO, and the Brooklyn Navy Yard. The Tech Triangle has developed a strong brand to position itself as an innovation hub, billing itself as "the largest cluster of tech activity outside of Manhattan." The governing partnership—a marriage between the Brooklyn Navy Yard Development Corporation, the DUMBO BID, and the Downtown Brooklyn Partnership—has for years promoted tech-supportive people-focused and placed-base efforts, such as the annual Tech Triangle U and Brooklyn Strand revitalization. The ongoing Brooklyn Tech Triangle Internship Program, another such effort, matches qualified local college students to paid internships within area tech firms and is sponsored by the Mayor's Office of Media and Entertainment.

In 2016, the Rhode Island Commerce Commission created a strategic framework to guide the redevelopment of a 20-acre tract of publicly-owned land in <u>Downtown Providence</u> formerly occupied by an interstate highway viaduct. The framework, designed with the aim of creating an innovation district on parcels formerly occupied by the roadway, recommended that the Governor of Rhode Island and the I-195 Commission advance a multi-faceted implementation structure that fosters collaboration and maximizes partner capacity, supports functional development economics, incentivizes an appropriate mix of uses, empowers a governance structure with impactful tools and expert staff, and mandates urban design excellence from all proposed development projects. The area was branded as the Providence Innovation and Design District, building on the underlying strengths of the State's economy and growing sectors of life sciences, computational sciences, and design.

Case Study Key Takeaways

- Induced tech district developments require a targeted strategy that incorporates people-focused, place-based, and programmatic interventions.
- Collaboration and partnership is essential to for a governance structure to carry large tech district projects through implementation.
- Events are an essential component to a tech-focused brand-building strategy, particularly for an innovation cluster in a market that already has other well-known tech districts.

Initiative 6: Customize regulatory tools and incentives to address tech needs and preferences.

Create new economic development tools to incentivize private sector investments and job creation by building upon the competitive advantage of Western Queens.

Western Queens will need add approximately 2,500 to 4,500 jobs to achieve the same concentration of tech jobs as districts like the Brooklyn Tech Triangle, Midtown South, and Lower Manhattan. This growth would need to be housed within 375,000 to 675,000 square feet of space. Western Queens has 750,000 square feet of existing vacant commercial space and 3 million square feet of new and 1 million square feet of renovated space in the development pipeline that could absorb a portion of these jobs. However, much of this stock is perceived to be undesirable or unaffordable to many tech tenants. Market-rate office rents and land values do not support the creation of ground-up projects, and a gap in funding exists without some public-sector support. Furthermore, early-stage companies often require step-up space with flexible terms and below-market rents, further contributing to the funding gap.

In addition to office space, tech companies are attracted to areas with supportive networks and resources, including access to venture capital funding and accelerator/incubator programs that provide mentorship and networking opportunities. Investment funds like Union Square Ventures and Brooklyn Bridge Ventures have invested in dozens of local early-

stage companies, but no investment fund is currently headquartered in Queens. The area's sole incubator is LaGuardia Community College's NYDesigns, leaving local tech companies and entrepreneurs with few highly-accessible sources of funding.



6.1: Deploy customized incentives to attract tech firms, provide the required space and resources, and ensure the equitable distribution of this growth through employment of local residents in quality jobs. Numerous incentives are



currently available to developers and tech firms, including the Industrial and Commercial Abatement Program (ICAP), the Commercial Expansion Program (CEP), the Excelsior Jobs Program (EJP), and the Relocation and Employment Assistance Program (REAP). The Tech Council should support ongoing efforts, such as those being championed by LICP, to:

- Expand available subsidies:
- Streamline application processes; and,
- Promote deeper and customized benefits for tech ecosystem firms and occupations, especially those which commit to support local workforce development efforts.

6.2: Advocate for these incentives to be tied to performance metrics to ensure that they ultimately fund high-quality local jobs, particularly within the tech **ecosystem.** Modifications to existina incentive programs—such as REAP and the Excelsior Jobs Program—should include providing deeper incentives for well-paying and high-mobility jobs within sectors such as tech, as well as expanded financial incentives to developers in exchange for their commitment to provide a proportion of office space at below-market rates for emerging tech firms.

6.3: Investigate the expansion of funding incentives and dedicated to local investments in tech firms. Currently the State's Qualified Emerging Technology Companies Capital Fund allows a 10 to 20 percent tax credit for investment into a qualified firm-up to a cap of \$150,000 to \$300,000-for companies located within the State with less than \$10 million in product sales. The Tech Council should advocate for an increase of this limit for investments in startups that hire a certain proportion or number of local employees. The Western Queens Tech Council should also ensure that Queens companies tap into the NYC Entrepreneurial Investment Fund. This \$22 million fund provides early-stage capital to locally based start-ups, and was started with a \$3 million commitment from EDC and a \$19 million investment from FirstMark Capital. In addition to the citywide fund, the Tech Council should work with private investors, the City, and the State to obtain funding sources or other commitments (such as subsidized space) to match and encourage investor funding specifically in Queens-based companies.

6.4: Develop new regulatory tools to encourage development of ground up construction and resources for tech growth. Density bonuses and other zoning levers should be deployed to promote the development of tech-supportive spaces such as incubators containing demonstration space, convening space, dedicated flexible co-working space, and prototyping space in private developments. Developers should encouraged to incorporate these types of spaces into their own projects in exchange for relief on financially-accretive uses and waivers for restrictions on height, or parking. Western Queens can be promoted as a place to explore zoning modifications and prototype new mixed-use building typologies that spur additional commercial tech space. To this end. the Tech Council should leverage DCP's ongoing LIC Core Neighborhood Planning Study rezoning efforts to encourage new mixed-use building typologies that incorporate commercial space at the base of residential towers—an approach designed to improve the financial feasibility of developing office space while preventing the development of monocultural blocks devoid of 24/7 activity.

Potential Partners

City agencies (DCP, EDC, and SBS), New York State, private developers, fund managers

Timeline

Immediate Next Steps

- Engage organizations currently advocating for and deploying regulations and incentives in Western Queens—including LICP, DCP, and EDC—to participate in the Tech Council to determine a unified approach to the customization and effective deployment of new incentives.
- Engage DCP in conversations on prototyping new mixed-use building typologies and techsupportive density bonuses within Western Queens.
- Support ongoing conversations between LICP's Incentives Working Group and EDC.
- Conduct outreach to existing investors to gauge interest in relocation to, or expansion in, Western Queens.

Intermediate Term

- Engage developers in pilots for zoning modifications.
- Identify public and private sources of funding, totaling approximately \$10-\$20 million, to seed an
 initial Queens-based venture fund and delineate parameters for investments by partnering with
 private companies.

Long Term

- Advocate for modifying regulations to State-wide incentives programs to make them more tech-supportive.
- Promote investment in 10 or more early-stage Queens-based firms.
- Monitor the development of incubator spaces to ensure adequate programming.

Case Studies: NJ Emerging Technology and Life Sciences Initiatives, FRESH Program

New Jersey, New York City

To incentivize the development of the tech and innovation economy within New Jersey, the state's Economic Development Agency (EDA) provides a series of financing, real estate, and technical assistance programs for companies in targeted industries such as technology, clean energy, life sciences, and information and communications.

The GrowNJ Assistance Program, one of its components, provides job-based tax credits on a sliding scale of \$500 to \$5,000 per job, with bonuses tied to geographic area, development of incubator space (\$500 bonus per job), and income levels—\$1,500 per job that pays above the median income for an area. Angel investors can also participate in a \$25 million Angel Investor Tax Credit program, which provides a tax benefit of up to \$500,000 to investors who fund emerging tech businesses that employ fewer than 225 employees, 75 percent or more of who must work in New Jersey. The EDA also maintains active partnerships with venture fund managers and matching programs to invest 1:2 of public funding to private capital in New Jersey-based start-up tech companies.

Over \$736 million in tax credits have been approved for technology companies under the GrowNJ program. The \$25 million Angel Investor Tax Credit program has leveraged more than \$220 million from 670 angel investments. The EDA has also committed over \$40 million to venture funds since 1999, which have invested \$200 million into more than 60 technology and life science companies.

New York City's <u>Food Retail Expansion to Support Health (FRESH)</u> program provides zoning and financial incentives to promote the establishment and retention of grocery stores in underserved communities. Within designated areas, the FRESH program is open to grocery operators and developers who are constructing or renovating existing retail space.

FRESH offers zoning incentives in the form of floor-area-ratio (FAR) bonuses for residential development, reduction in required parking spaces, and as-of-right permitting in certain districts. In addition, the NYC Industrial Development Agency offers discretionary financial incentives, including 25-year land tax abatement dependent on number of employees, building tax stabilization, sales tax exemption on construction, and mortgage recording fee deferrals. Grocery store operators may also be eligible to apply for pre-development grants and loans through a separate fund.

Twenty-four FRESH projects have been approved since the launch of the initiative in 2009. Seven of these have been approved for zoning benefits and eighteen for financial benefits. Thirteen stores have completed their construction and are open to the public, including a Food Bazaar Supermarket in Long Island City. In total, these supermarkets are expected to provide approximately 660,000 square feet of new or renovated space, retain more than 600 jobs and create over 1600 new jobs, and represent an investment of approximately \$100 million across the City.

Case Study Key Takeaways

- Zoning bonuses—such as additional FAR and parking ratio reductions—can encourage development of industry-specific uses within underserved neighborhoods.
- Public investment into venture funding has significant multiplier effects in generating private support for emerging tech firms.



Western Queens is at a pivotal moment in its history. The community's visibility is increasingly becoming more elevated, a result of the area's growing population and cultural energy. Signs of progress abound, and the community's tech ecosystem stakeholders, many of whom have been instrumental in the development of this roadmap, have an opportunity to create a true hub of innovation in Western Queens. Indeed, many of the ingredients necessary for this transformation already exist. As the area's leaders come together to implement this strategic document and take strides to grow the local tech ecosystem, they must do so with an eye towards ensuring that the 20 percent of area residents who live below the poverty line are given every possible opportunity to participate in and benefit from this growth. Implemented holistically, these strategic initiatives can meaningfully shape Western Queens' growth and secure its future as one of New York City's most desirable tech districts.

INITIATIVES SUMMARY

PEOPLE-FOCUSED INITIATIVES

Initiative	Immediate Next Steps	Intermediate Term	Long Term
1. Prepare disadvantaged residents to succeed in existing tech training programs. (pg. 23)	 Convene representatives from citywide and local training providers to identify skills gaps and devise a pre-training curriculum that adequately prepares applicants with varying levels of experience for existing training programs. Explore partnerships with community-based organizations to maximize awareness about pre-training programs. Explore potential sources of federal, state, and city funding for a first phase pre-training program. 	 Launch a pilot training program that is flexible, accessible, and inclusive of tech firms. Market pre-training programs through existing community channels. 	Reconvene stakeholders to evaluate the success of pre-training pilot programs and devise a strategy for modifying the program as needed and scaling it up to reach residents in other Western Queens neighborhoods.
2. Strengthen the Tech Workforce Pipeline to Better Align with Job Placement Opportunities. (pg. 27)	 Convene local tech companies, workforce development organizations, and training providers to participate in TTP's efforts to develop a shared understanding of employers' needs. Develop a system for matching employer needs to existing training programs to identify potential gaps. Recruit tech firms as active participants in training efforts. Seek funding from government, non-profit, and private entities. 	 Conduct broad outreach to local residents and students who are potential candidates for participation in training programs. Recruit trainees and begin to establish a rapport with employers who can satisfy their needs by hiring program graduates. 	Evaluate progress and revise approaches as needed.

PLACE-BASED INITIATIVES

Initiative	Immediate Next Steps	Intermediate Term	Long Term
3. Define Geographic Nodes to Focus Investment. (pg. 37)	 Confirm geographic boundaries of focus nodes, and identify optimal streets as connector corridors. Promote partnerships between the Mayor's Office of Technology and Innovation and local organizations and institutions with the aim of establishing a Neighborhood Innovation Lab in Western Queens. Collaborate with City agencies, community organizations, and the LICP to develop a strategy to physically connect identified clusters. Advocate for the deployment of smart city technologies as a critical component of ongoing and future public transportation and wayfinding investments, adapting existing funding streams. Create outdoor programming for the nodes and connectors, including popup public spaces, outdoor games and furniture, and food trucks. 	 Deploy pilot incentives programs within geographic nodes to catalyze new tech activity. Plan for additional retail and open space along connecting corridors while continuing to deploy pop-up spaces and plazas in near-term. Roll out smart city technologies and wayfinding interventions along corridors. 	Ensure high-quality maintenance of streetscaping, wayfinding, and open space within the focus nodes and along corridors.
4. Develop a Physical Hub for Tech and Innovation Open to the Entire Community. (pg. 43)	 Identify a partnership of organizations and institutions to act as champions, who can select the operator of the community hub and define a management structure. Finalize parameters for the hub, including exact size and location, desired format (e.g., new or expanded facility), programming and governance strategy, marketing plan, and budget. Identify requests for proposals, issued by the City and others, that can potentially be leveraged to develop the facility. Pursue funding for construction, potentially including City and State grants and funding from private developers or companies. 	 Determine a long-term business approach for the center, including potential revenue-generation and sponsorship opportunities. Hold a well-publicized launch event or competition to introduce the space to the New York City tech ecosystem, partnering with well-known organizations and companies. Engage in stakeholder outreach to market public events and spaces to community members. 	 Increase programming at the hub to include more frequent, larger-scale events and expanded mentorship and educational opportunities. Develop a self-sustaining operating model to ensure long-term financial sustainability. Evaluate success of program based on a variety of metrics, including but not limited to: 1) the number of start-up companies housed within the coworking and incubator space, 2) the number of community members who actively visit the space on an annual basis, 3) attendance at public events, and 4) the number of students successfully completing training or mentorship programs each year.

PROGRAMMATIC INITIATIVES

Initiative	Immediate Next Steps	Intermediate Term	Long Term
5. Expand Marketing of Western Queens Tech Opportunities. (pg. 51)	 Reconvene local tech stakeholders who participated in the Tech Roadmap Task Force to gauge interest in forming part of the Western Queens Tech Council. Formalize the mission, structure, responsibilities, and rules of the Council, whether as a new entity or as a subcommittee within an existing entity. Include successful, local tech stakeholders who have "made it" in Queens on the Council. 	 Hire, at minimum, one full-time employee to serve as coordinator of engagement and outreach efforts. Identify target audiences and devise a marketing strategy to appeal to influential stakeholders. Launch a marketing campaign to increase exposure of Western Queens to real estate brokers, developers, influential tech firms, investors, and to the local community. 	 Expand the capacity of the Western Queens Council to scale outreach and marketing efforts. Continue to recruit participants to join the Tech Council to ensure a diversity of voices and champions for growth of the tech ecosystem.
6. Customize Regulatory Tools and Incentives to Address Tech Needs and Preferences. (pg. 55)	 Engage organizations currently advocating for and deploying regulations and incentives in Western Queens—including LICP, DCP, and EDC—to participate in the Tech Council to determine a unified approach to the customization and effective deployment of new incentives. Engage DCP in conversations on prototyping new mixed-use building typologies and tech-supportive density bonuses within Western Queens. Support ongoing conversations between LICP's Incentives Working Group and EDC. Conduct outreach to existing investors to gauge interest in relocation to, or expansion in, Western Queens. 	 Engage developers in pilots for zoning modifications. Identify public and private sources of funding, totaling approximately \$10-\$20 million, to seed an initial Queens-based venture fund and delineate parameters for investments by partnering with private companies. 	 Launch a marketing campaign to increase exposure of Western Queens to real estate brokers, developers, influential tech firms, investors, and to the local community. Engage developers in pilots for zoning modifications. Identify public and private sources of funding, totaling approximately \$10-\$20 million, to seed an initial Queens-based venture fund and delineate parameters for investments by partnering with private companies.

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ROADMAP TASK FORCE

Members

500 Startups

Association for a Better New York (ABNY)

Center for an Urban Future

Citigroup

Coalition for Queens

Con Edison

Cornell Tech

Flux Factory

Google

IBM

Inclusion

JetBlue

Kaufmann Astoria Studios

LaGuardia Community College

Local Data

Long Island City Partnership

Mayor's Office of Tech and Innovation

Noauchi Museum

NYC Department of Buildings

NYC Department of City Planning

NYC Department of Education

NYC Department of Transportation

NYC Digital

NYC Economic Development Corporation

NYCHA

NYDesians

NY Tech Meetup

Office of Councilman Jimmy Van Bramer

Ontodia

Open Tech Institute

Partnership for New York City

Plaxall

Queens Chamber of Commerce

Members (contd.)

Queens College

Queens Community Board 1

Queens Community Board 2

Queens Economic Development Corporation

Queens Public Library System

Queens Vocational & Technical High School

Queensbridge Residents Association REES Neighborhood Zone (NYCHA)

Roosevelt Island

Shapeways

Tech:NYC

TF Cornerstone

Uber

Uncubed

Urban Upbound (ERDA)

Verizon

