

**FUTURE.  
FORGED.  
FOR ALL.**  
Pittsburgh, Pennsylvania

Proposal for

# **AMAZON HQ2 • PITTSBURGH**

October 2017

CONFIDENTIAL

A panoramic view of the Pittsburgh skyline at sunset. The sun is low on the horizon, casting a golden glow over the city and reflecting on the water in the foreground. The sky is filled with soft, golden clouds. The city's architecture is a mix of modern glass skyscrapers and older brick buildings. A bridge is visible on the right side of the frame. The text "FUTURE. FORGED. FOR ALL." is overlaid in the center in a bold, white, sans-serif font.

**FUTURE. FORGED. FOR ALL.**

# WELCOME TO PITTSBURGH

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**L**ike Amazon, Pittsburgh thinks big. As the birthplace of steel and computer science, we have always expected and required innovation. As we look to the future, we believe it is built on the type of innovation that only Pittsburgh and Amazon can build together.

What Amazon is looking for in cities across North America is already here. We have been preparing for this for thirty years. In so many ways, this bid holds up a mirror to who we are. Building on our strength in computer science, we have become an undisputed leader in software engineering, artificial intelligence, robotics, and autonomous transportation. Our diverse economy, fueled by knowledge, technology and innovation will drive the future of our region and, we believe, can drive the future of Amazon.

We have a bias for action unlike any other place. In the 1940s, when air pollution presented a challenge to our quality of life, we rolled up our sleeves and created the first clean air standards in the country. When Pittsburgh faced unemployment levels in the 1980s worse than those in the Great Depression, we rebuilt by working across political, economic, and social lines. When autonomous vehicles arrived in our city, we welcomed them. Our decisiveness, agility, and appetite for risk are why we are able to build an innovation economy and why we are the best partner for Amazon's future.

Our region attracts and develops the best. Talent was the foundation of our comeback and will be the foundation for Amazon's growth. Our graduates include many who already work at Amazon—in Pittsburgh, Seattle, and around the world. To help Amazon meet its talent needs, we

are proposing a new talent pipeline initiative that exponentially scales our investments in education, from universal pre-K and integration of STEAM in K–12 to an unprecedented PGH-AMZN LAB that will produce the talent and products of Amazon's future. All of this will ensure that our region is cost competitive for Amazon, our businesses, and our residents.

The world's most customer-centric company deserves a customer-centric home. We are ready to deliver on our social and financial commitments. A single purpose entity—PGHQ2—will coordinate the efforts of all local jurisdictions, businesses, universities, and foundations that have volunteered their support for Amazon's Pittsburgh expansion. In short, as a partner of Pittsburgh, we will always be obsessed with your priorities. We have already obtained option agreements

on five extraordinary sites that make their exclusivity available to Amazon well into 2018, and include defined methodologies to establish price and clear transactional structures.

Our quality of life is envied globally. With an authentic character developed for over 200 years, 90 city neighborhoods, room-to-breathe suburbs, and family-owned farms dotting rolling highlands, the region offers robust options for every lifestyle. Our arts and culture will surprise you. Our natural beauty and outdoor recreation will thrill you. Our healthcare system and its innovations will help you live longer, smarter, and better. If you are hungry for more, we are an emerging foodie capital with cutting-edge chefs. We believe quality of life extends

beyond amenities. This is a place where Fred Rogers asked, "Won't you be my neighbor?" It is a sentiment we extend to Amazon and its employees. In Pittsburgh, you will be our neighbor, and we will treat you like one.

Finally, our past has readied us for our future. The foresight of our partners at Carnegie Mellon University and the University of Pittsburgh have built a new economy that is crackling with dynamism and creativity. Civic-minded philanthropies—seeded by fortunes made a century ago—drive an outsized abundance of arts and cultural institutions that are enjoyed by all. The strong tradition of bringing together groups, finding common ground, and working together to propel the region forward is

alive and well today. Pittsburgh also has the infrastructure for a population that was once twice our size. This scale is our advantage. We can grow with Amazon and are putting in place strategies today to ensure we grow in a sustainable, resilient, and equitable way.

Our grandparents worked in mills and mines using the strength of their backs and their shoulders. Today, a new generation from around the world is coming to Pittsburgh to build our region using the strength of their ideas and dreams.

We invite Amazon to help write the next chapter of the Pittsburgh story. Together, we will build a **Future. Forged. For All.**



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**William Peduto**

*Mayor of Pittsburgh*



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**Rich Fitzgerald**

*Allegheny County Executive*



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**Stefani Pashman**

*CEO, Allegheny Conference  
on Community Development*

# FUTURE. FORGED. FOR ALL.

With a world-class talent pool, high quality of life at a low cost, a stable business environment, and significant capacity to grow, there is no better place for Amazon's HQ2, now and into the future.

# EXECUTIVE SUMMARY

We believe that if the future is not for all, it is not for us. Together with Amazon, we are ready to build the city and headquarters of the future.

Our value proposition is simple:

- 1 We have the **TALENT** that Amazon needs, the ability to recruit at scale, and the quality of life to retain the best and brightest.
- 2 We have a business-friendly, low-cost operating environment, attractive sites, and meaningful incentives—all in an **OFFER** we can deliver.
- 3 We bring the growth capacity, partnerships, and forward-thinking leadership that will build the **FUTURE** together with Amazon.

## OUR TALENT

**Amazon's future is being created by the unmatched talent in Pittsburgh.**

Pittsburgh will provide the talent that Amazon needs now and into the future. As the home of the country's #1 program in computer science, new media, and information technology management, our strengths align with Amazon's business needs. Our talent pipeline is robust and anchored by nearly 80 higher education institutions in the immediate area alone, including Carnegie Mellon University (CMU)

and the University of Pittsburgh (Pitt). Our local universities graduate over 45,000 students annually, including more than 12,000 awarded degrees in computer and information science, engineering, law, and business. Pittsburgh attracts talent from the scores of universities within the broader region as well. As a result of this deep talent pool, more than 1,600 technology firms have a foothold in Pittsburgh, including Google, Uber, Facebook, Bosch, Argo AI, Apple, Intel, Disney, Microsoft, and SAP.

To build our talent pipeline for Amazon and other companies, we have adopted a cradle-to-

career approach to STEAM education. Working with local foundations and educators, we have integrated STEAM into our K-12 curriculum. We are partnering with local tech companies such as Google to disrupt old models and infuse hands-on and digital learning into our schools, after-school programs, early learning centers, and workforce development programs. Together we will build the Amazon Talent Pipeline. The comprehensive system will augment our existing K-12 efforts and extend to workforce training for young adults.

Most importantly, when Amazon's talent come

to Pittsburgh, they will fall in love—gripped by the unexpected majesty of its dramatic inclines, converging rivers, and impressive bridges. Our affordable and high quality of life will help retain talent. We have the lowest cost of living among North American tech hubs, almost 20% lower than Seattle. With a median home price of \$136,500 and median rent of \$1,000 a month, Amazonians will have place to call home in almost every neighborhood in our region. Commuting is easy. Eight out of ten Pittsburghers live within walking distance of our 53-station light rail network, 20-mile busway system, and a robust network of 70+ bus lines throughout the region. A new bus rapid transit line linking Downtown and Oakland is on its way. An intense, loyal community like Seattle, we embrace the black and gold of the Steelers, the Pirates, and the Penguins—thrilled by their victories and pained by their defeats. Finally, with cultural institutions like the Warhol Museum, the country's top food scene as ranked by *Zagat*, vibrant riverfronts, and abundant hiking trails, Amazonians will find the live-work-play environment they seek.

## OUR OFFER

### **A new social compact and financial offer—with a single focus on delivering for Amazon.**

Our \$21.6 billion economic offer combines long-term cost savings, tax incentives, and development-ready sites offered at no cost to Amazon.

Compared to current operations in Seattle, Amazon will save an estimated \$17.7 billion in labor, healthcare, and utility costs over 25 years simply by relocating to Pittsburgh. No other city in America can offer this level of long-term cost savings with world-class talent and amenities.

We will also provide Amazon a compelling incentive package comprised of \$1.4 billion from the Commonwealth of Pennsylvania and \$556 million in local funding for HQ2 land and infrastructure. Incentives are shown in present value terms over 25 years. The Commonwealth of Pennsylvania is presenting their offer in nominal terms. [See Appendix B for a comparison]. To protect our low-cost environment and avoid the rising costs, congestion, and inequities triggered by growth in other cities, we plan to capture incremental tax revenues and reinvest them into projects that will benefit Amazon and our region. The City, County, School District, local businesses, and our foundations will partner, as they historically have, to develop an \$2.1 billion investment strategy—called Forging Pittsburgh's Future—dedicated to the economic development of the region. Initiatives could include expansion of universal pre-K, increased child care services, further integration of STEAM into K–12 curriculum, career-specific workforce programs, neighborhood affordability, small business support, public transit, and other infrastructure. We have watched hyperinflation occur in other tech hubs, and we have observed the

sometimes unequal distribution of benefits and consequences. In Pittsburgh, if it's not for all, it's not for us.

Together with Pittsburgh, Amazon will have an opportunity to set the bar for a new and equitable social compact between businesses and communities.

We have five featured sites—all secured and each offered at zero cost to Amazon—that we believe meet Amazon's vision for a world-class headquarters, and are consistent with our own regional priorities. Amazon could expand our dynamic Downtown through the Lower Hill, integrate into the thriving Robotics Row in the Strip District, create an urban waterfront campus at Hazelwood Green, transform a former steel mill at Carrie Furnace, or create a connected hub adjacent to our international airport. Each is special and can provide a distinct campus that merges Amazon's vision with Pittsburgh's spirit. All five offer exceptional public transit, Day 1 office options on- and off-site, and the ability to accommodate an urban campus of up to 8 million square feet. Across the Pittsburgh region, we have identified 30 additional sites that Amazon can tailor for additional office, logistics, fulfillment, research, and other uses.

Our region was built on collaboration and our collective efforts to welcome Amazon are no different. To deliver on the deal, the Mayor, County Executive, and other regional leaders

have created a new entity—PGHQ2—to serve as Amazon’s single point of contact for regulatory approvals and entitlements, land development, infrastructure, cost control, Day 1 operations, talent acquisition and more. PGHQ2 will be supported by the Allegheny Conference, our regional civic leadership organization with a 70-year track record and deep relationships with all local jurisdictions, corporations, universities, and foundations that have volunteered their support. In short, as a partner of Pittsburgh, we will always be focused on your priorities. This new, special purpose entity will facilitate smooth, efficient transactions and delivery of Amazon’s chosen site. By creating a direct line of communication between Amazon, the Mayor, the Allegheny County Executive, and key institutional and private sector leaders in Pittsburgh, PGHQ2 will enable Amazon to obtain entitlements quickly, get space ready for the first wave of employees, build the necessary infrastructure, and enhance our talent pipeline.

## OUR FUTURE

**As a city that never stopped inventing, our most important reinvention lies ahead.**

Pittsburgh has the capacity to grow with Amazon. We understand the challenges of rising costs and congestion seen in other cities and have a strategy to grow with Amazon in a sustainable and equitable way. Today, we have more than

14,600 new multifamily units under construction. Unlike land-constrained coastal cities, our region can maintain affordability with capacity for an additional 400,000 new households. We have the lowest commute times among comparable tech hubs, including Seattle, San Francisco and New York City. With minimal investment, our light rail can increase capacity by 30% and our high-speed busway network can triple its capacity.

CMU and Pitt will work with Amazon to establish a new kind of university-corporate partnership: the PGH-AMZN LAB. We will collaborate with Amazon to shape the vision for the LAB, to be based in a facility of up to 100,000 square feet on the CMU campus. The LAB could focus on forward-looking exploratory research; prototyping of new technologies, products, services, and entertainment; development and training of Amazon’s future workforce; or all of the above.

Pittsburgh’s streets are already a test bed for new technologies. As Amazon continues to push the boundaries in autonomous package delivery, robotic fulfillment, virtual reality, and more, PGHQ2 is committed to offering a Living Lab team to secure regulatory approvals and other key commitments for pilot projects in communities throughout the region. The Living Lab team can rapidly build commitments to support Amazon’s pilots, recruiting prospective pilot hosts in advance by senior leadership and technical partners.

Like Amazon, our city is built on a willingness to think big. Guided by our principles of equity, sustainability and resilience, and, in partnership with Amazon, we can transform Pittsburgh into a city-wide innovation district—a testing ground that will perpetuate the development of new talent and technology. We have already begun to build this Innovation City, with our streets as our innovation zone and our talent, businesses, and institutions as our partners. We invite Amazon to join us to create a better Pittsburgh. Together, we can build a **Future. Forged. For All.**

# OUR OFFER | SUMMARY

## Pittsburgh's economic offer includes four components: Land, long-term cost controls, incentives, and streamlined delivery.

**Land:** Five featured sites with exclusivity for Amazon well into 2018. Option agreements include defined methodologies for price and transaction structure. The chosen site will be available to Amazon at no cost.

- **Hazelwood Green:** A 178-acre urban riverfront campus owned by a partnership between the Heinz Endowments, Richard King Mellon Foundation, and Claude Worthington Benedum Foundation.
- **The Lower Hill:** A Downtown campus comprised of the 28-acre Lower Hill site under the ownership of public entities and controlled by the Pittsburgh Penguins, supplemented by our 200-acre Central Business District (CBD).
- **The Strip:** A 44-acre opportunity in a Downtown-adjacent riverfront area. The sites are owned by a consortium of public and private property owners led by Oxford Development Company.

- **Carrie Furnace:** A 65-acre redevelopment site along the Monongahela riverfront owned by the Redevelopment Authority of Allegheny County.
- **The Site@PIT:** A 152-acre site adjacent to the Pittsburgh International Airport owned by Allegheny County Airport Authority.

**Long-term cost control:** Pittsburgh's inherent economics provide long-term cost savings that no other city can offer. Compared to Seattle, labor costs in Pittsburgh are 19% lower, healthcare costs are 8% lower, and energy costs are 45% lower. Simply by relocating to Pittsburgh, these long-term cost controls could save Amazon \$17.7 billion over 25 years, or approximately \$350,000 per employee.

**Incentives:** In collaboration with the Commonwealth of Pennsylvania, Allegheny County, the City of Pittsburgh and Pittsburgh Public Schools, we are prepared to offer Amazon a package valued at \$4 billion over 25 years. This package will include the following three components:

- **Capital Support:** \$637 million in upfront capital support to reduce Amazon's Day 1 occupancy costs. This funding includes land value, site-related infrastructure, and transit investments.
- **Operating Subsidies:** \$1.3 billion in Performance Based Grants equal to no more than 100%

of Personal Income Tax collected by the Commonwealth from direct, full-time Amazon HQ2 employees. Incentives are shown in present value terms over 25 years. The Commonwealth of Pennsylvania is presenting their offer in nominal terms. [Please see Appendix B for a comparison.]

- **Regional Investments:** \$2.1 billion in Forging Pittsburgh's Future, a series of investments that will improve the quality of Amazon's future workforce through pre-K, K-12, and workforce development programs. These investments will also ensure that housing remains affordable at all income levels and that our transportation and utility infrastructure capacity expands to meet our growth. Funded by incremental sales, local income, payroll preparation, and local service taxes, this unprecedented initiative will allow Amazon and local leaders to maintain a low-cost environment and avoid the rising costs, congestion, and inequities seen in other cities.

**Delivery:** The Mayor, County Executive, and Allegheny Conference have established a special purpose entity—PGHQ2—to coordinate all local jurisdictions, corporations, universities, and foundations that have volunteered their support for HQ2. PGHQ2 will synchronize regulatory approvals and entitlements, land development, infrastructure, cost control, Day 1 operations, talent acquisition, and more.

<b>RFP MATRIX</b>	<b>Information Requested</b>	<b>Page</b>
<b>Sites</b>	<ul style="list-style-type: none"> <li>• General site information on potential buildings/sites</li> <li>• Current ownership structure, zoning, and utility infrastructure</li> </ul>	<p>p.30-53 p.30-53</p>
<b>Incentives</b>	<ul style="list-style-type: none"> <li>• Summary of total incentives, including total value and specific benefit time period</li> <li>• Description, timing, calculation of incentive</li> <li>• Specific or unique eligibility requirements mandated by each incentive item</li> <li>• Whether tax credits are refundable, transferable, or may be carried forward</li> <li>• Mechanisms and approvals for free or reduced land</li> <li>• Timelines associated with approval of each incentive, and whether any will require approval</li> </ul>	<p>p.58-62, Appendix B p. 58-62, Appendix B p.58-62 p.61 p.59 p.58</p>
<b>Incentive Certainty</b>	<ul style="list-style-type: none"> <li>• Factors contributing to uncertainty associated with any incentives</li> <li>• Estimation of approximate level of certainty, and any applicable claw backs or recapture provisions</li> </ul>	<p>p.62-63, Appendix A &amp; B p.62-63</p>
<b>Timetable</b>	<ul style="list-style-type: none"> <li>• Timetable for incentive approvals at the state/province and local levels</li> </ul>	<p>p.62</p>
<b>Labor</b>	<ul style="list-style-type: none"> <li>• Labor and wage rate information in the general job categories described</li> <li>• Relevant labor pool information and ability to attract talent regionally</li> <li>• Specific and recurring opportunities to hire software development engineers</li> <li>• All levels of talent available in the MSA, including executive talent and the ability to recruit</li> </ul>	<p>p.18-19 p.11-28, Appendix I p.11- 28, Appendix I p.19-21</p>
<b>Programs &amp; Partnerships</b>	<ul style="list-style-type: none"> <li>• University and Community College programs/partnerships currently available</li> <li>• K-12 computer science education programs/partnerships currently available</li> <li>• Potential future programs with higher education institutions</li> <li>• List of universities and community colleges with relevant degrees</li> <li>• Relevant degrees, including number in last three years</li> </ul>	<p>p. 12-14, Appendix G p.17 p.14-15, 18 p.12-14, Appendix G &amp; H p.12-13, Appendix G &amp; H</p>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>• Highway, airport, logistics transit information for proposed sites</li> <li>• Regional transportation and transit options</li> <li>• Traffic congestion ranking</li> </ul>	<p>p.30-49, 67-68 p.24, 67, Appendix L, M, N p.24</p>
<b>Quality of Life</b>	<ul style="list-style-type: none"> <li>• Daily living and recreational opportunities</li> <li>• Cost of living</li> <li>• Diversity of housing options and availability/pricing of housing near potential sites</li> <li>• Crime</li> </ul>	<p>p.20-28 p.23 p.23-24, 60, Appendix K p.24</p>
<b>Other</b>	<ul style="list-style-type: none"> <li>• Long-term cost controls for labor, healthcare, and energy</li> <li>• Dedicated delivery entity</li> <li>• Innovation City</li> </ul>	<p>p.55-57 p.63 p.69-73</p>

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# 1

## OUR TALENT

Pittsburgh is training Amazon's future workforce. Our unique combination of high-quality of life, low cost of living, leading universities and world-class amenities is attracting the best and the brightest. Our region is already producing the technologies that are fueling Amazon's current and future growth.





# OUR PEOPLE

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Pittsburgh boasts a unique urban academic environment with unprecedented potential for innovation and growth. The Pittsburgh region is home to CMU, Pitt, and 76 other higher education institutions. Our local universities graduate over 45,000 students annually. More than 12,000 of our graduates secure degrees in computer and information science, engineering, law, or business. Each year nearly 7,000 students from more than 100 different countries are drawn to Pittsburgh. This talent produces a dynamic and diverse local workforce with expertise in areas including AI/machine learning, robotics, cybersecurity, logistics, software engineering, and healthcare.

In 2016 alone, over 3,600 students received graduate degrees in engineering-related fields and 2,500 students earned computer science degrees. Pittsburgh's engineering talent pool is extraordinary. Our homegrown computer science pipeline is equal to that of Philadelphia and exceeds those of either Denver or Austin. More importantly, it is growing. Within the past four years, the number of Master's candidates in CMU's School of Computer Science has increased by nearly 60%, and more than doubled in its Electrical and Computer Engineering program.

**Pittsburgh can draw a talent pool from over 77,000 students graduating each year from universities and colleges within a 200 mile radius.**

**These schools include:**

**Allegheny County**

Carnegie Mellon University  
 University of Pittsburgh  
 Community College of Allegheny County

**Within 100 Miles**

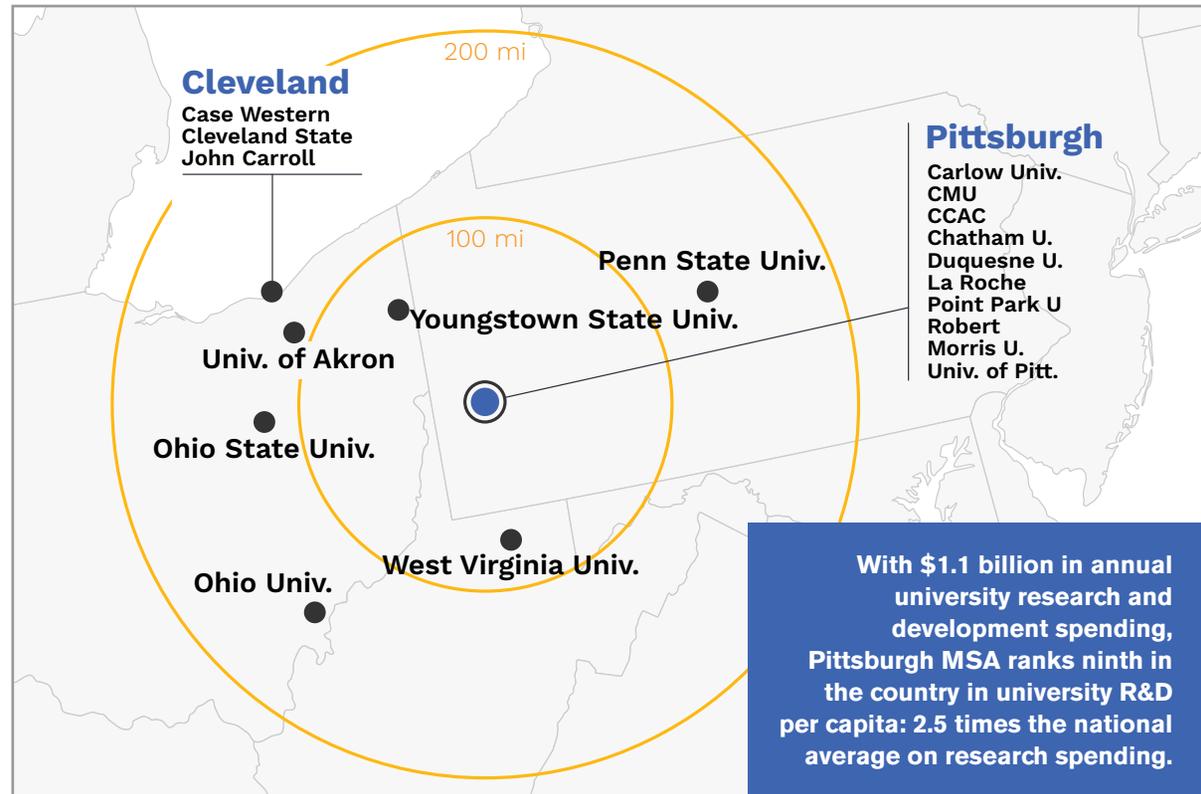
West Virginia University  
 Youngstown State University

**Within 150 Miles**

Case Western University  
 Cleveland State University  
 John Carroll University  
 Penn State University  
 University of Akron

**Within 200 Miles**

Ohio University  
 Ohio State University



**Notable programs are offered at the following regional schools, among others:**

Carnegie Mellon University  
 University of Pittsburgh  
 Chatham University  
 Robert Morris University  
 Indiana University of Pennsylvania

Pennsylvania State University  
 La Roche College  
 Butler County Community College  
 Saint Vincent College  
 Seton Hill University  
 Community College of Allegheny County (CCAC)  
 West Virginia University  
 [Program descriptions are included in Appendix H.]

Beyond Carnegie Mellon University's top ranked schools of Computer Science and Engineering, its nationally ranked schools of business, public policy and information systems, and design offer programs that will continue to feed the Amazon talent pipeline.

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## THE TEPPER SCHOOL

**The Tepper School of Business is where engineering and business talent come together—over 50% of its MBA candidates have a background in Science & Engineering.**

### **Master of Science in Product Management**

The new 12-month Master of Science in Product Management program turns computer scientists and engineers into product managers. This intensive program provides two important components vital to success as a product manager: technical instruction from Carnegie Mellon's top-ranked School of Computer Science and a deep dive into business and marketing from the Tepper School of Business.

## HEINZ COLLEGE

**The Heinz College of Information Systems and Public Policy is ranked #1 by *U.S. News & World Report* for Information Technology and Management specialization.**

### **Master of Science in Information Technology (MSIT)**

The Heinz Master of Science in Information Technology (MSIT) degree is designed specifically for IT professionals looking to enhance their careers by offering learning options that can be pursued from anywhere in the world.

## SCHOOL OF DESIGN

**The School of Design's Masters of Integrated Innovation for Products and Services program has consistently been ranked in the top three Best Graduate Programs in Industrial Design by *U.S. News & World Report*.**

### **Masters of Integrated Innovation for Products and Services**

The School of Design is one of the oldest and most highly ranked programs in North America for communication, information, interaction and product design, with graduates employed by Motorola, IDEO, Microsoft, Google and Apple. The School's Master of Integrated Innovation, jointly offered with the Department of Mechanical Engineering and with support from the Tepper School of Business program, focuses on the creation of products, services, and interactive experiences that exceed user expectations.

In response to the 2017 Brookings Institution report, "Capturing the next economy: Pittsburgh's rise as a Global Innovation City," regional partners have created InnovatePGH, a high-level leadership group tasked with growing the innovation ecosystem and implementing the report's recommendations. As initial tasks, InnovatePGH will brand and build the Oakland Innovation District and develop a technology-based business attraction strategy for the City of Pittsburgh as an innovation district unto itself.

### INDUSTRY GROWTH

▶ **59%**

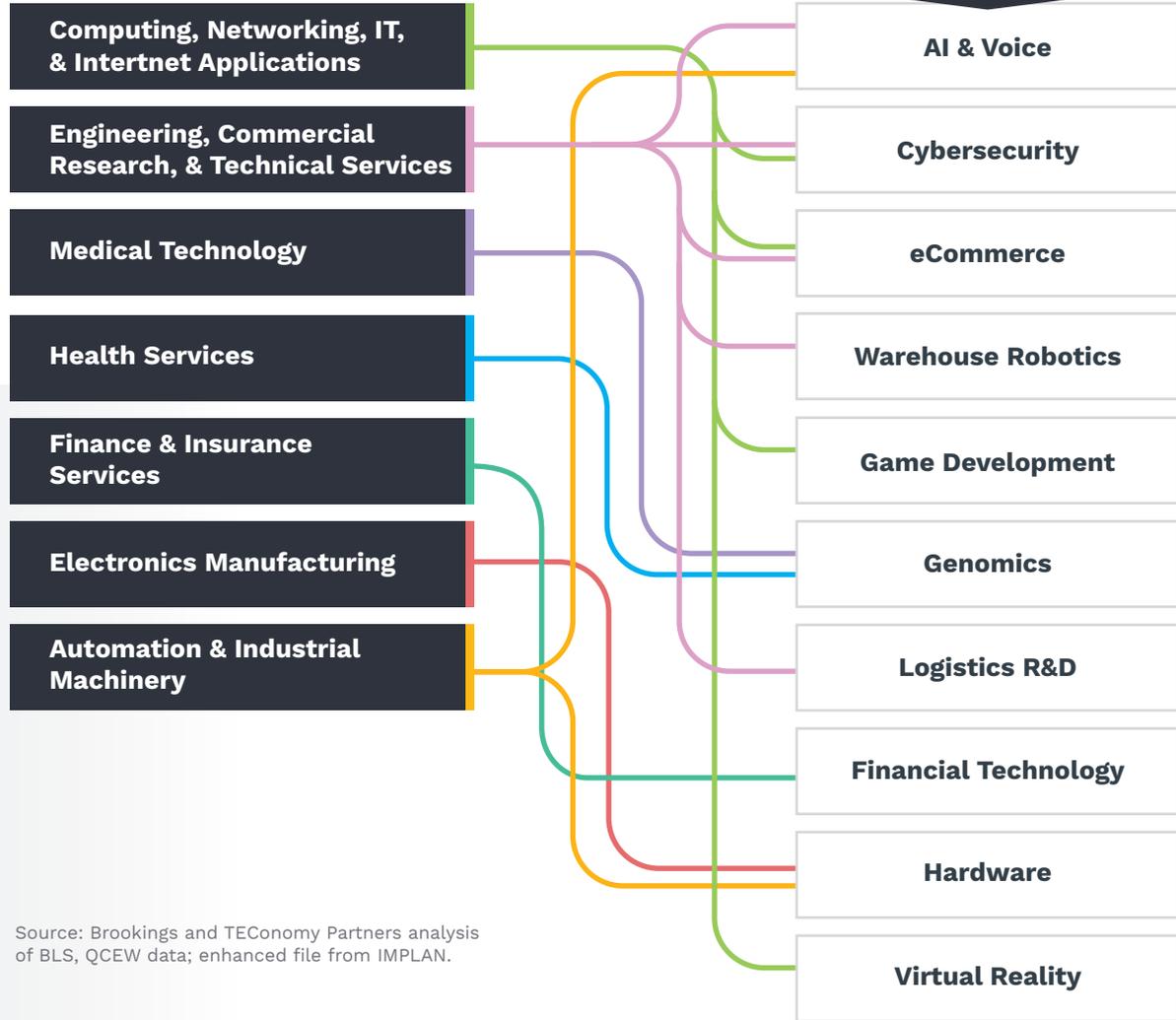
Computing, Networking, IT, and Internet Applications

▶ **29%**

Engineering, Commercial Research, and Technical Services

## PITTSBURGH IS PRODUCING AMAZON'S FUTURE RESOURCES

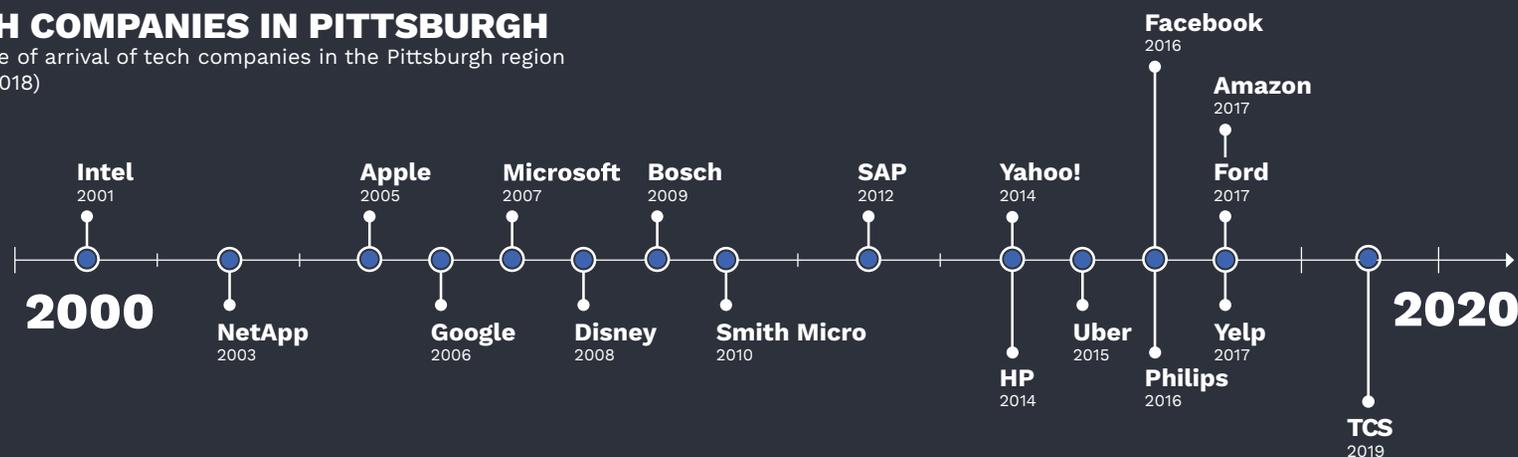
### PITTSBURGH'S TALENT CLUSTERS



Source: Brookings and TEconomy Partners analysis of BLS, QCEW data; enhanced file from IMPLAN.

## TECH COMPANIES IN PITTSBURGH

Timeline of arrival of tech companies in the Pittsburgh region (2001-2018)



**“Pittsburgh amazed me when I first arrived here. And I feel that more than ever today. I’m excited to see all the ways the people of this city will build a future that works for them, and for everyone.”**

**—Sundar Pichai**  
*CEO, Google*

**Our talent is fueling the growth of Pittsburgh’s innovation sector. We are particularly strong in the technologies that will drive Amazon’s future.**

According to the Brookings Institution, Pittsburgh is one of 16 leading “innovation cities” in the world and one of four cities in the United States that is poised to take advantage of the new economy. Brookings cites Pittsburgh’s strength across 11 local advanced industry clusters defined as innovation-driven, skilled, and export-oriented industries. From 2009 to 2016, Pittsburghers employed in these advanced industries grew by almost 10%, representing almost half of Pittsburgh’s overall private sector growth rate. In particular, the computing industry has experienced tremendous growth, adding 60% new jobs during this period. In total, these advanced industry clusters represent approximately one-third of the Pittsburgh MSA’s total private sector labor market.

**Proximity to these clusters, in an environment that promotes innovation, will advance its future business lines at a faster pace than elsewhere.**

Other tech firms have realized the value of these synergies and have joined us in Pittsburgh. Over the past five years, tech firms have flocked to Robotics Row, the three-mile stretch of the Strip District including more than 20 companies working on robotics and autonomous vehicles. In February 2017, Argo AI, a self-driving car startup backed by Ford Motors, announced that it would base its headquarters in the Strip District. Collaboration between Ford and Amazon has already resulted in the integration of Amazon’s Alexa into Ford vehicles and that collaboration will continue to thrive in Pittsburgh, where we have the space, talent, and regulatory environment to test new ideas.

**Manchester Craftsmen's Guild (MCG)**

is a world-renown multi-discipline art, education, and music organization. MCG is the brainchild of MacArthur "Genius Grant" fellow Bill Strickland, grown from his belief that through direct involvement in art and exposure to the masters who teach and perform it, lives are transformed. The affiliated Manchester Bidwell Corporation's career training program creates empowering educational environments for adults-in-transition as well as urban and at-risk youth, and enriches the region with career-ready talent for partner corporations and organizations in Pittsburgh.

**We are intent on maintaining and building the competitive edge of our workforce, fueling our talent pipeline from cradle to career.** We recognize that creating high quality early learning environments and facilitating achievable pathways to college for all are critical to our long-term economic and social vibrancy as a city. Pittsburgh has made major investments in computer science and STEAM programming at the K–12 level and dedicated resources to promoting digital literacy from birth to age 8. These programs reflect our commitment to building a robust tech education continuum.

**Pittsburgh Promise:** Pittsburgh has made a commitment to subsidizing the college education of every Pittsburgh Public School student who graduates with a minimum 2.5 GPA and 90% attendance. The City provides \$30,000 scholarships for post-secondary education in Pennsylvania from its \$250 million fund supported by corporate and foundation sponsors.

**ReMake Learning:** This national model for creating innovative, 21st century learning experiences for youth represents more than 250 organizations whose goal is to provide children with the opportunity to develop skills related to STEAM and digital learning to prepare them to succeed in school and in the workforce. Remake Learning has been recognized by the White House's Nation of Makers Initiative.

**Early Education:** PNC Grow Up Great and other funders have invested over \$300,000 in the Message From Me Program developing young children's computer skills to facilitate parent/child interactions

**Universal Pre-K:** The City has committed to providing quality early childhood programs for all families, and will continue to build upon the School District's ongoing effort to expand access to early education and pre-K. In March 2017, the City established an Early Childhood Education Task Force that will work with the Mayor's Office to develop an universal pre-K implementation strategy by February 2018.

**PNC Grow Up Great:** In Pittsburgh and its other markets, the PNC Financial Services Group and the PNC Foundation have provided over 700,000 volunteer hours in support of early childhood education and more than \$125 million in grants for pre-K preparation in vocabulary, math, science, financial education, and the arts.

**Public School STEAM Curricula:** Pittsburgh Public Schools, in collaboration with local foundations and businesses, committed \$480,000 to develop STEAM curricula and three STEAM labs in district schools, including a MakerSpace Lab complete with a CNC Milling Machine, 3D Printers and 3D software.

**STEM for Young Adults:** Partner4Work, our public workforce development board, invested \$1,000,000 in STEM programming for young adults in 2015 and 2016. These programs include summer camps, internships, and programs designed to prepare young adults for STEM careers.

## ENGINEER SALARIES

Mean salary of software engineer by city.

Pittsburgh	\$86,900
Chicago	\$100,800
Austin	\$101,800
Atlanta	\$101,800
Philadelphia	\$102,300
Dallas	\$106,500
Boston	\$111,100
Denver	\$112,800
Washington DC	\$116,700
San Francisco	\$126,700
Seattle	\$128,900

\$80k ▲ \$104.3k (US Avg)

Source: Bureau of Labor Statistics

### Amazon and Pittsburgh can partner to strengthen our existing efforts to produce a strong, thriving talent pipeline—“the Amazon Talent Pipeline”.

Our colleges and universities are committed to launching and expanding programs to develop the Amazon Talent Pipeline. Amazon can work with us in all stages of talent development: to advance our goal of universal pre-K, integrate STEAM/STEM curricula and labs in public schools, and increase digital literacy from cradle to career. With Amazon we can expand and sustain the Pittsburgh Promise, ensuring that this program is available to Amazon employees’ children and the next generation of Pittsburghers. The Amazon Talent Pipeline will build on existing programs and develop new initiatives, such as developing externship programs and offering training at our 2- and 4-year colleges.

Though our booming tech and innovation ecosystem is a focal point, it is only one segment of our diverse economy. Our underlying economic strength and resiliency lies in our balanced economy, anchored by education, healthcare, financial services, manufacturing, energy and now, technology.

Our talent reflects our diverse industry mix. We ensure that students gain skills in a wide variety of fields including computer science, healthcare, banking, energy, and more. By offering programs that range from micro-credentials and certificates to bachelor’s, master’s degrees, and executive education, Pittsburgh’s academic institutions offer students pathways to opportunities ranging from

entry-level jobs in cloud computing to managerial roles in logistics and senior-level positions in computer engineering and network management.

### After the collapse of the steel industry and our economy in the 1980s, we learned that diversification is the key to long-term stability. Pittsburgh has survived bubbles and recessions exceptionally well, in both 2000 and 2008.

Over the past three years, CMU, Pitt, and CCAC alone have seen more than 16,000 students graduate from programs in computer science, information systems, and business. Roughly two-thirds of these students earned degrees in engineering. [For academic data for the past three years and degree information, see Appendix G.]

**Amazon can acquire our highly-qualified talent at a lower cost than comparable high-caliber cities.** Pittsburgh is currently home to 267,500 professionals within the employment clusters identified by Amazon:

- executive/management
- engineering (including software engineering)
- legal
- accounting
- administrative

## RELEVANT JOB GROUPS

Employment Breakdown in Pittsburgh MSA for Amazon-Relevant Job Groups

Job Type	2017 Jobs
Top Executives/Managers	34,700
Engineers	55,300
Legal	12,800
Accounting	84,100
Administrative	80,600
Total	267,500

Source: Emsi

Over the past decade, employment trends in Amazon-relevant occupations have grown at a faster pace than overall job growth in Pittsburgh. We have a pool of 63,000 qualified job seekers actively looking for new opportunities within occupations identified by Amazon. This talent is available at a lower wage than in our benchmark cities, including San Francisco,

New York, and Washington, D.C. According to the Bureau of Labor Statistics, the mean cost to hire a software engineer in Pittsburgh is \$86,900. This is 12% below the cost in Seattle, 16% below the cost in Philadelphia, and 18% below the cost in Boston. By tapping into the local labor market, Amazon could swiftly staff HQ2.

## MEDIAN WAGES | BENCHMARK CITIES

Job Type	Pittsburgh	Philadelphia	Boston	Denver	Dallas	Seattle
Top Executives/Managers	\$95,300	\$112,600	\$108,000	\$101,300	\$91,000	\$113,400
Engineers	\$74,300	\$82,600	\$92,600	\$89,400	\$85,600	\$104,200
Legal	\$80,500	\$81,700	\$86,900	\$84,800	\$85,600	\$83,100
Accounting	\$65,000	\$67,600	\$74,700	\$68,600	\$68,700	\$71,000
Administrative	\$22,400	\$26,000	\$28,200	\$25,400	\$24,800	\$31,200

Source: Emsi

**“Pittsburgh is a city with phenomenal technical talent—CMU and Pitt are training some of the best and the brightest, and there’s a vibrant startup community here...We’ve found that Pittsburghers are a great fit at Amazon, where they’re empowered to invent and think big on behalf of our customers.”**

**—Bill Kaper**  
General Manager, Amazon Pittsburgh



# QUALITY OF LIFE

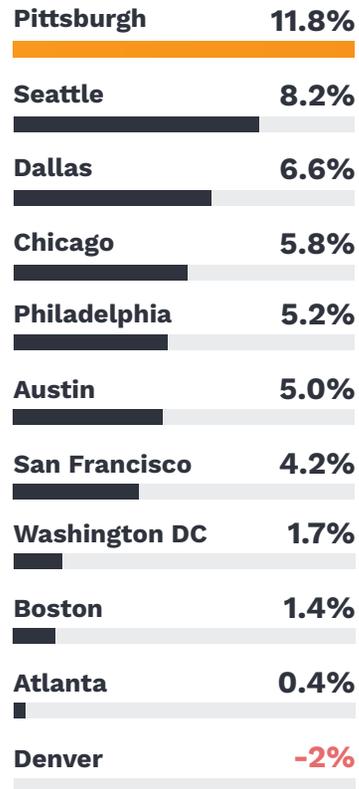
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**Our high quality of life, and low cost of living and doing business, is increasingly attracting Amazon's brand of talent.**

For several decades following the loss of our heavy industries, talent left Pittsburgh for other cities, but thanks to a new culture of opportunity and curiosity, this trend has shifted. Our region currently has a population of 2.3 million, with 306,000 in the City of Pittsburgh. In 2014, Pittsburgh had the second highest increase in residents aged 25 to 34 with a four-year degree in the country. From 2010 to 2017, the percentage of Pittsburgh area residents in the MSA aged 25 to 34 increased by nearly 20%.

## RISING EDUCATION

Percent increase in population 25+ with BA degree or higher (2009-2016).



Source: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS)

**High quality talent is choosing Pittsburgh.** Talent from other cities is supplementing the hometown cohort. In 2015, the city ranked number seven on Brookings' list of metro areas with the highest share of out-of-state adults with bachelor's degrees: over 50%, compared to the national average of 41%. Twenty-eight percent (28%) of people who moved to Allegheny County since 2010 have bachelor's degrees or higher, compared to 18% nationally. The number of those moving to Allegheny County making over \$75,000 increased by almost 80% during this period, about 10 percentage points higher than the nation.

**As a longstanding top choice for corporate headquarters, Pittsburgh sustains its ability to attract corporate talent.** Due to our strong talent pool and low-cost business environment, Allegheny County has the fifth highest concentration of headquarters employees in the country. Over the past decade, the Pittsburgh region has seen a 60% increase in corporate headquarters jobs, compared to the national average of 25%. Seven Fortune 500 companies are based in Pittsburgh including PNC Financial Services, Kraft Heinz, and Wesco International.

**Our region shares your commitment to meeting the needs of veterans through initiatives like Homefront Pittsburgh, PA Serves, and Allegheny County's Veterans' Services Office.**

## Welcoming City

Pittsburgh is a diverse city with a strong tradition of welcoming immigrants and recognizing their important contributions to its economic and civic health. Mayor William Peduto launched Welcoming Pittsburgh, an immigrant integration strategy designed to help the city grow. Mayor Peduto's vision for Pittsburgh is as a "a model welcoming city...that others will look to and see thriving, diverse neighborhoods where, whether you are a second-generation Italian-American, African-American, Bhutanese refugee, or Latino, you welcome your neighbor because you understand that their success is your success."

In 2015, the Peduto administration released a comprehensive roadmap outlining 37 actionable strategies to strengthen its welcoming efforts and improve the experience of all immigrants in Pittsburgh. This past year, Allegheny County followed in suit, releasing a comprehensive countywide plan, "A Community Blueprint: Helping Immigrants Thrive in Allegheny County," to support the growing immigrant population, to be implemented over the next three to five years.

**In October 2017, the Human Rights Campaign announced that Pittsburgh scored 100/100 on its Municipal Equality Index for LGBTQ equality.**

## HEALTHCARE

Pittsburgh residents have access to excellent healthcare services, led by the University of Pittsburgh Medical Center (UPMC) and Highmark Health. Both UPMC and Highmark Health are integrated health systems that manage patients' insurance and medical care, an innovative model that many experts believe provides better treatment at lower costs. UPMC was recently named the 12th Best Hospital in the country and the 7th Best Children's Hospital by *U.S. News and World Report*. It is also the academic medical center for Pitt which is #5 in the country in NIH research grants, receiving \$513 million. Highmark's Allegheny Health Network has been recognized as among the Top 100 best performing health systems by Thomson Reuters. Highmark also recently announced plans to invest \$200 million in a state-of-the-art cancer treatment center in Pittsburgh.

## GLOBAL PARTNERSHIPS

The City of Pittsburgh is recognized as a global leader in urban innovation and has built strong relationships with peer cities both nationally and internationally. Our commitment to the Paris Climate Accord underscores our commitment to global partnerships and efforts that include leading cities around the world.

### Brookings Institution Global Innovation City

As part of their ongoing work on the innovation economy, the Brookings Institution will be naming Pittsburgh as one of 16 global innovation cities (one of only four within the United States).

### Bloomberg Harvard City Leadership Initiative

This innovative project of Bloomberg Philanthropies and the Harvard Kennedy School Ash Center for Democratic Governance and Innovation is comprised of 40 international cities to equip "mayors and their senior leaders with cutting-edge tools and techniques to more effectively tackle pressing management challenges faced in their cities."

### Rockefeller Foundation 100 Resilient Cities

As part of the 100 Resilient Cities Network, Pittsburgh released the OnePGH Plan that builds "on recent successes and a wealth of community assets, while directly confronting the the complex challenges that we all continue to face."

**"I have lived in 12 different states and have not found a better place that offers an abundance of resources both professionally and personally —being a perfect place to raise a family. The city is affordable and has some of the top educational institutes for children. That's why my wife and I have decided to turn Pittsburgh into our long-term residence."**

**—Ryan Green**  
*CEO, Gridwise*

## COST OF LIVING

Cost of living index for urban areas.



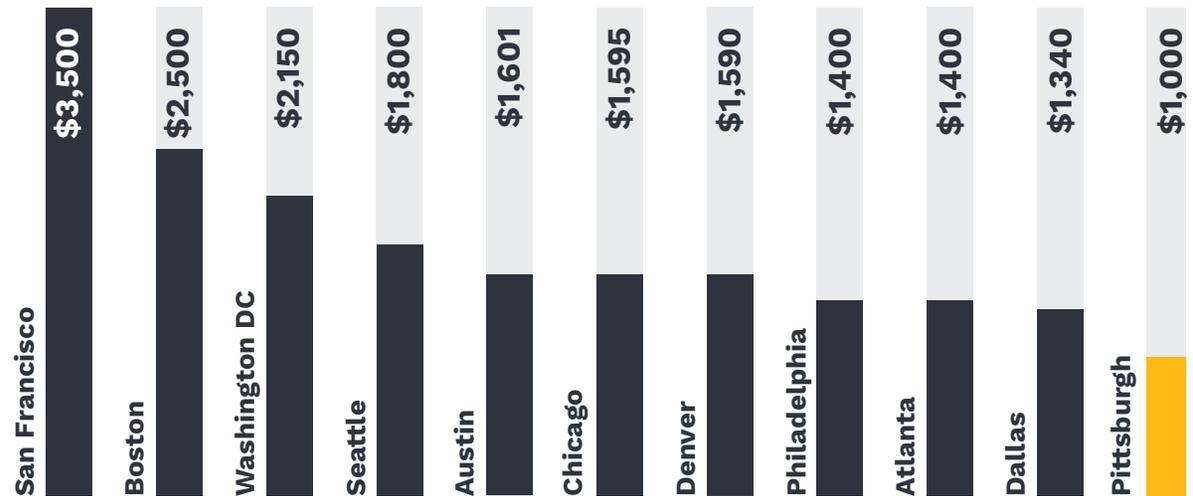
Source: US Census Bureau, 2010 census

**Pittsburgh's low cost of living will support Amazon's talent recruitment and retention. Among our benchmark cities, Pittsburgh provides the lowest cost of living, with costs more than 8.5% below the national average, 12% below Denver, and 30% below Seattle. In 2016, U.S. News named Pittsburgh one of the most affordable places to live in the United States.**

## RENTAL PRICES

2017 median rental prices by metropolitan area.

source: Zillow



## TRAFFIC

Hours spent in congestion during peak hours per year.

<b>Pittsburgh</b>	<b>33.4</b>
<b>Denver</b>	<b>36.0</b>
<b>Philadelphia</b>	<b>37.6</b>
<b>Austin</b>	<b>54.8</b>
<b>Seattle</b>	<b>56.6</b>
<b>Chicago</b>	<b>54.8</b>
<b>Boston</b>	<b>56.6</b>
<b>Dallas</b>	<b>57.6</b>
<b>Washington DC</b>	<b>59.4</b>
<b>Atlanta</b>	<b>70.8</b>
<b>San Francisco</b>	<b>82.6</b>

Source: INRIX 2016 Traffic Scorecard

### Homeownership is affordable, safe, and accessible.

With a median home price of \$136,500, three out of four Pittsburgh households can afford a home, compared to fewer than half of those in Boston, Denver and Seattle. Purchasing a home in over 95% of Pittsburgh's neighborhoods is a real possibility for households earning \$100,000 annually. Our most desirable neighborhoods are still affordable and we plan to ensure that they continue to remain so. Since 2003, our housing pricing has remained stable. The Pittsburgh region is among the safest metro areas in the nation, with a low overall crime rate of 2,035 per 100,000 residents; on the whole safer than Atlanta, Boston, Chicago, Dallas, Denver, Philadelphia and Seattle.

### Pittsburgh has an equally accessible rental market.

Rents in Pittsburgh are 60% cheaper than Boston, 44% cheaper than Seattle, and 37% cheaper than Chicago and Denver. A household earning \$100,000 can afford to rent anywhere, including desirable city districts such as Lawrenceville and Shadyside, formerly home to the mansions of Carnegie, Mellon, and Frick. We have also avoided significant rent increases. Since 2003, rents in Pittsburgh have grown by only 14%, compared to growth of 33% in San Jose and 29% in San Francisco. In fact, Pittsburgh has price-accessible homes in almost every neighborhood. [See Appendix K for housing distribution maps.]

### Pittsburghers enjoy an average commute of only 26 minutes, shorter than any of our benchmark cities.

The typical employee saves up to 40 hours a year commuting in Pittsburgh compared to other cities.

**Even at rush hour, Pittsburghers save commuting time, with only 1.8 hours of congestion per day versus 4–5 hours in almost every other city. Only 23% of peak highway travel is congested compared to 37% in Boston and 47% in Seattle.**

### 8 of 10 Pittsburghers live within 10 minutes of public transit.

Our transit network includes an efficient 24-mile light rail system. Commonly known as the T, it connects Downtown to entertainment and office destinations on the North Side and residential communities to the south. Our 20-mile high-speed busway system links Downtown to eastern neighborhoods and suburbs, and residential communities to the west and south. Like the busway, which provides rail-like speed and dedicated lanes, a new bus rapid transit service connecting Downtown to Oakland will open in 2021. The line will serve CMU, Pitt and other major destinations, such as Duquesne University and PPG Paints Arena, on ten-minute routes. Pittsburgh is becoming car-optional. Thirteen percent of daily commuters bike or walk to work. Our flat neighborhoods are highly walkable. Our hilly neighborhoods are served by inclines and steep streets with remarkable scenic views. With 77 miles of bike lanes and sharrows, a citywide bike share program, and the 24-mile Three Rivers Heritage Trail tracing the city's riverfronts, commuting does not require a car. [See Appendix N for map of city-wide bicycle network.]

## Solarize Allegheny

Solarize Allegheny is a project funded by the Heinz Endowments and managed by the non-profit SmartPower. The organizations goal is to double the amount of solar energy throughout Allegheny County by providing residents and businesses with a single-source to go solar. Solarize Allegheny is active in a dozen communities throughout the City and region, providing access to grant and loan programs, technical expertise, and installation.

## SUSTAINABILITY

The City of Pittsburgh and The Heinz Endowments are spearheading a major effort to forge a new model of urban growth and development that is innovative, inclusive and sustainable. The P4 initiative builds upon Pittsburgh's global relationships with cities, clean technology innovators, universities, and globally renowned architects and planners.



### PEOPLE

of all backgrounds receive social and economic opportunities and benefits through the advancing of a just and sustainable city.

### PLANET

preservation and cultivation are top priorities as every sector in the region is involved in creating a green and healthy environment.

### PLACE

is not an afterthought, but an opportunity for promoting innovation in urban design.

### PERFORMANCE

accountability and excellence are critical components of building an inclusive economy.

Pittsburgh stands with a global community of urban areas in its pursuit of a just and sustainable future. It brings to that effort several advantages such as a growing innovation economy anchored by major research universities, a proven capacity for public-private collaboration, and willing community and political leadership.

Sustainability principles are being written into the city's new comprehensive plan, which will set the course for future development. The city is establishing metrics to assess larger-scale redevelopment and to determine how public incentives should be awarded based on design, social equity, transportation and mobility, environment and public health impact, and other sustainability standards.

Pittsburgh's most visible commitment to sustainability is its buildings. PNC Tower, known as the world's greenest office tower, exceeds the current criteria for a LEED Platinum certified building and features state-of-the-art green technology that allows it to rely on fresh air for passive ventilation and climate control for more than 40% of the year. Pittsburgh's 1.5-million square foot convention center—now LEED Platinum—was the first LEED Gold-certified convention center in the world, while the Center for Sustainable Landscapes at Phipps Conservatory and Botanical Gardens in Oakland is one of only 12 buildings in the world to achieve full certification from the Living Building Challenge, the most rigorous performance standard for green buildings.



**The Allegheny Regional Asset District (RAD)** is a unique national model of support for

regional assets. The creation of the district in 1995 provided a countywide vehicle for county-city cooperation. The District receives one-half of the proceeds from the 1% Allegheny County sales tax to support and finance regional assets such as libraries, parks and recreation, cultural, and sports and civic facilities and programs. Since its creation, RAD has invested over \$3.6 billion in our most cherished regional assets. The popular RADical Days is an annual 3-week event celebrating the region with free admission, musical and dance performances and family activities offered by RAD-funded organizations, amenities and programs. [See Appendix J for a list of RAD supported amenities and institutions.]

**“Quality of life matters—and Pittsburgh’s is superb. A city with a long history of diversity of all types, it enjoys a dynamic downtown Cultural District and beautiful tree-lined parks and green spaces. It’s a sports lover’s dream, with three legendary professional sports teams.”**

—Bernardo Hees, CEO, Kraft Heinz

## AMENITIES

With Pittsburgh’s renowned restaurant scene, outdoor, sports and cultural activities, Amazon’s talent will feel right at home. Our city was recently named the #1 Best Big City in the Northeast by *Time Magazine*, due in large part to the abundance of amenities that Pittsburgh has to offer. With our award-winning restaurants and lively nightlife, world-class cultural attractions and championship-winning sports teams, and plentiful green spaces and outdoor activities, our residents have endless opportunities for entertainment and enrichment. Annual events such as the Pittsburgh Arts Festival, the Three Rivers Regatta, and Light Up Night draw over a million visitors to the City’s downtown each year.

### Dining and Nightlife

Amazon’s foodies will not be let down in Pittsburgh, which was named the #1 Food City of 2015 by *Zagat* and The Next Big Food Town by *Bon Appetit*. The food scene ranges from old-school diners and dives to farm-to-table fresh to innovative cuisine by Pittsburgh’s James Beard awards-nominated chefs. We have more than 2,200 restaurants and bars in the city and the most bars per capita in the U.S., with

several vibrant neighborhoods for nightlife seekers. A significant number of restaurants are also part of our “Sustainable Pittsburgh” restaurant program, which recognizes restaurants that implement sustainable practices for sourcing, water, waste, energy, and other focus areas.

### Cultural Attractions

Pittsburgh ranks among the top 10 cities in the country for direct arts and culture spending, and enjoys the kinds of cultural amenities and opportunities usually only found in larger cities, from major institutions such as our world-class Pittsburgh Symphony Orchestra, the Andy Warhol Museum, the Children’s Museum, and the Pittsburgh Opera, in addition to our quirky neighborhood-based galleries and performance spaces. Pittsburgh is ranked fourth in the nation for foundation assets per capita, and this robust philanthropic and nonprofit sector allows for individual artists and institutions alike to flourish and contribute to the fabric of our neighborhoods and our region in ways that improve the quality of life for everyone.

### Outdoor Activities

Pittsburgh's natural beauty is one of our greatest gifts, and our residents are passionate about enjoying the outdoors. Our city has 3,000 acres of City parks and 24 miles of bike trails, and Pittsburgh was recently named the 5th best city in the U.S. for "Active Lifestyle" by WalletHub. Without leaving the city, hikers and bikers can access the Three Rivers Heritage Trail and Great Allegheny Passage, a 150-mile trail spanning two states meandering along rivers and mountain passes, with direct trail connection to Washington, D.C. Our three rivers provide for opportunities for urban kayaking, paddle boarding, water-skiing and are home to a vibrant

rowing and sculling community with scores of crew teams. Pittsburghers can also participate in the many active events hosted by the City annually, including the marathon, half marathon, "ten miler," triathlon, and countless 5Ks and cycling races.

### Sports

We are Pittsburgh Proud of our three legendary professional sports teams—the Pittsburgh Steelers, Pittsburgh Pirates, and defending Stanley Cup Champion Pittsburgh Penguins. Amazon's sports fans can enjoy a robust sports culture touted by *Sporting News* as the "Best Sports City" and awarded *USA TODAY* 10

Best Reader's Choice poll as a "Best City for Sports" travel. We are home to the University of Pittsburgh's Champion Panther football and basketball teams, the USL Pittsburgh Riverhounds soccer team, and hundreds of high school, college, and university teams. Pittsburgh's major sports facilities—Heinz Field, PNC Park, PPG Paints Arena, and Highmark Stadium—are within a short walk of downtown.

Sports are a defining part of Pittsburgh's community and culture and Pittsburgh is the only city in the United States in which all professional sporting teams share the same colors: black and gold.



## WHY PITTSBURGH?

### #1 Food City for 2015

Zagat, 2015

### #9 of 15 Most Livable Cities in the U.S.

Forbes, 2015

### One of the Most Affordable Places to Live in the U.S.

U.S. News, 2016

### Best Places to Put an Engineering Degree to Work

Livability.com, 2017

### Coolest Neighborhood in America

Time Magazine, 2017

### Two of the Top Business Schools at Pitt and CMU

Forbes, 2015

### #7 of Friendliest Cities in America

Travel + Leisure, 2016

### Cities That Give Most Bang for Buck

Forbes, 2016

### #9 of Best Metro Areas for STEM Professionals

WalletHub, 2016

### Top 10 Most Technology Job Creation

Forbes, 2015

### 5th Best City for an Active Lifestyle

WalletHub, 2016

### 1 of 15 Dynamic Cities for 2016

Worth Magazine, 2016

### Top U.S. Cities for Apartment Living

ApartmentAdvisor, 2016

### #23 of 150 Best Cities for Young Families

ValuePenguin, 2016

### Top 10 Cities Techies Should Consider Moving To

Huffington Post, 2016

### Top 10 Traveler's Choice Destinations

TripAdvisor, 2015

### 6th Best College City in America

WalletHub, 2015

### High Tech Magnet Is Northeast's Best Place to Live

Money Magazine, 2015

### One of the Top 12 Places to Invest

U.S. Dept. of Commerce, 2015

### Pittsburgh's Downtown Is Best in the United States

Livability.com, 2015

### Coolest American City You Haven't Been To

Huffington Post, 2015

### One of the Top 10 Most Creative Cities

Movoto Real Estate, 2015

### Top 10 Fastest Growing Tech Hubs

Uncubed, 2015

### #1 Smartest City

Movoto Real Estate, 2015

### Among Top 10 in Ranking of Venture Capital Investment

Thompson Reuters, 2015

### Top 10 Most Hipster Cities

Infogroup, 2016

### One of 2016 Best Places to Live

Men's Journal, 2015

### A Cheap Place to Retire

Kiplinger, 2015

# 2

## OUR OFFER

Only in Pittsburgh will Amazon find the combination of centrally located land, world-class research institutions, invested communities, aligned governments and an extremely low-cost operating environment.





## THE SITES

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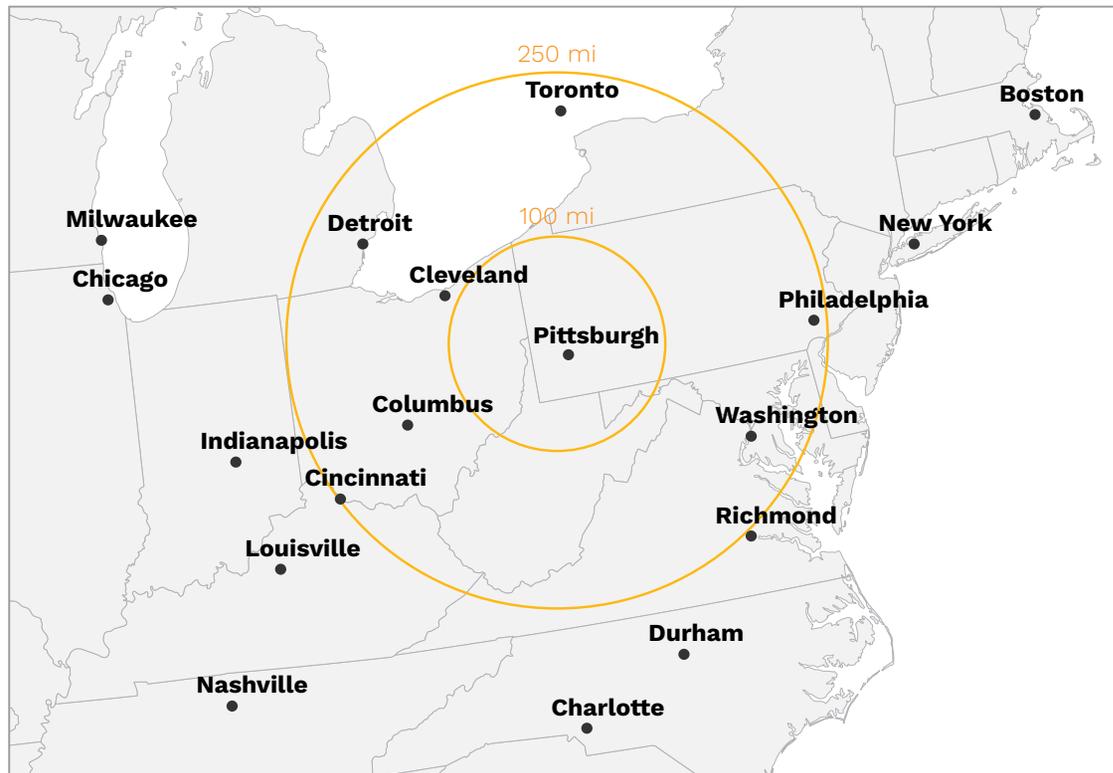
All of our featured sites are transit-, bike-, and pedestrian-accessible and covered by high quality communications networks.

Three are located within 1.5 miles of the Oakland Innovation District and 2.0 miles of Pittsburgh's Downtown. They offer excellent connectivity and access to talent. The future will be even more densely networked. As Pittsburgh pursues its current ten-year transportation plan, each site will receive expanded transit options including increased bus service, autonomous shuttles, and new light rail systems, all integrated with green infrastructure.

All sites are also covered by high-speed fiber optic and cell coverage. [See Appendix O & P for coverage maps.]

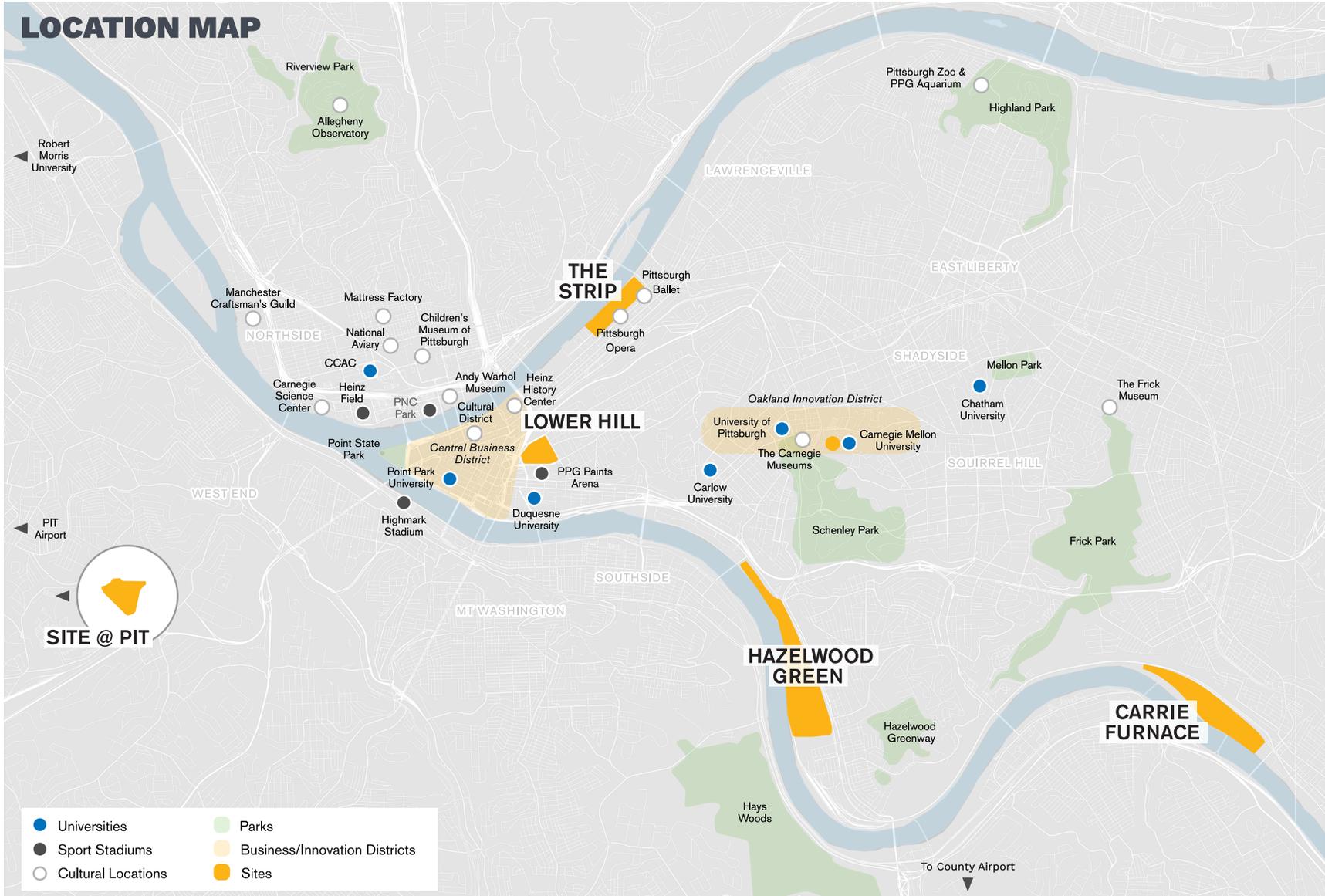
Amazon will be able to construct HQ2 with some of the lowest construction costs in the country. The Pittsburgh Regional Building Trades Council, consisting of 18 local trades, is fully supportive of the region's bid for HQ2. Should Pittsburgh be selected, the Council has committed to working with Amazon to develop a cost competitive Project Labor Agreement (PLA) for the construction of HQ2. The PLA will ensure cost stability and predictability, prevent work stoppages, and ensure a reliable source of skilled and experienced labor will be available for Amazon. [See Appendix C for the Council's letter of support.]

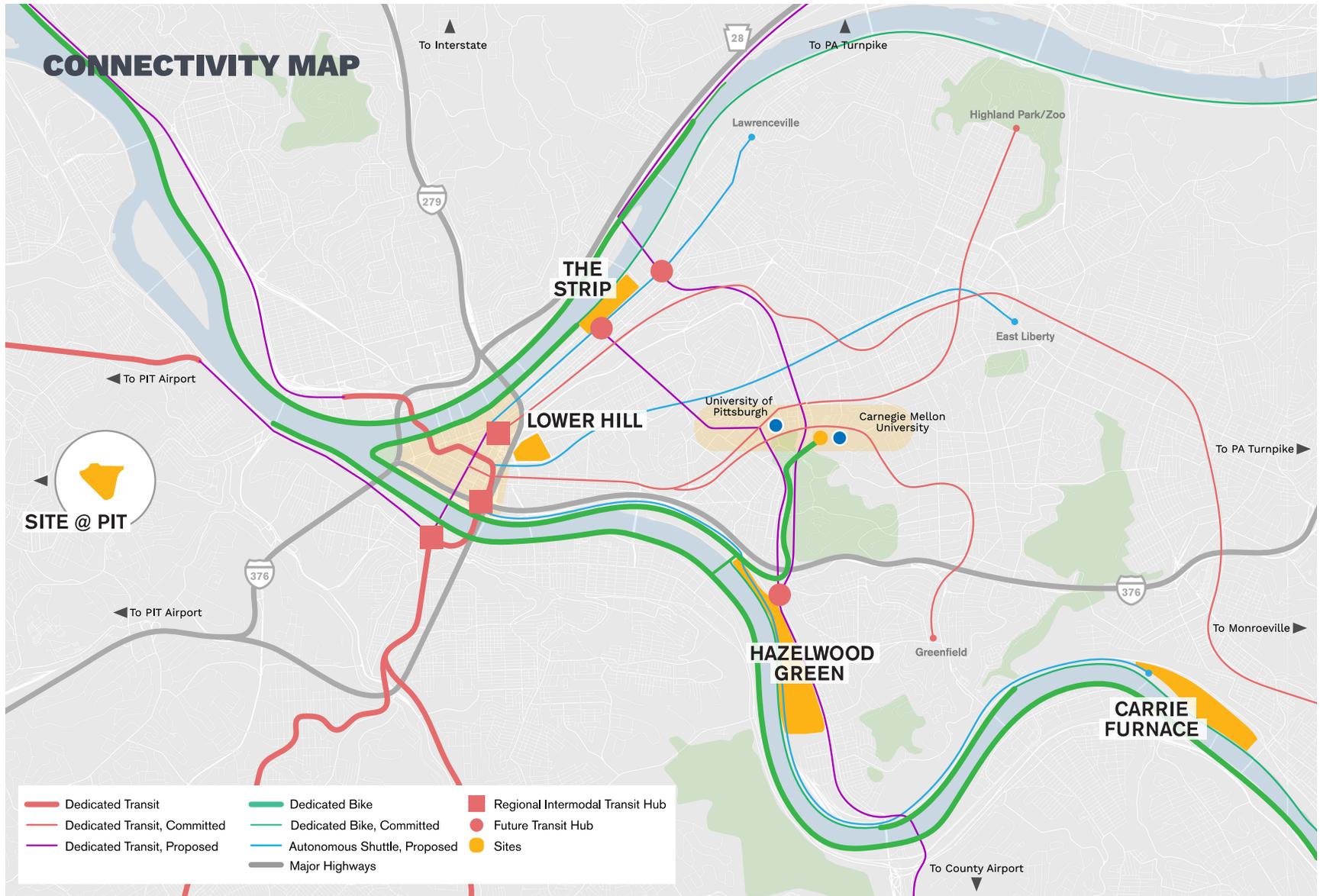
Pittsburgh has made a major commitment to sustainability and resilience, exceeding even the requirements of the Paris Climate Accord, and we welcome the opportunity to work with Amazon to help us realize these commitments. Pittsburgh has several active sustainability initiatives—the Pittsburgh Climate Action Plan, the One Pittsburgh Resilience Plan, and the Pittsburgh 2030 District, are some examples—that are in line with Amazon's leadership in this field.

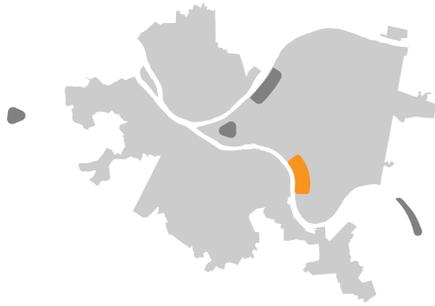


## SITE CONNECTIONS

Within 500 miles of 10 of America's largest cities, and 45% of the nation's population, Pittsburgh provides unsurpassable access to businesses, customers and talent. For HQ2 we offer Amazon five premier sites that represent the variability of Pittsburgh's urban landscape. Each site can provide a distinct campus that merges Amazon's vision with Pittsburgh's spirit. All five offer exceptional public transit, immediate office options on- and off-site, and the ability to accommodate an urban campus of up to 8 million square feet. We have executed option agreements on all five sites that make their exclusivity available to Amazon well into 2018 and include defined methodologies to establish price and clear transactional structures. Across the Pittsburgh region we have identified 32 additional sites that Amazon can tailor for additional office, logistics, fulfillment, research, and other uses.







## HAZELWOOD GREEN | A RIVERFRONT URBAN CAMPUS

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**T**he 178-acre Hazelwood Green site, formerly known as Almono, offers Amazon the opportunity to create a new 8 million square foot urban riverfront campus nestled between historic residential neighborhoods and a burgeoning technology hub. Once home to the Jones & Laughlin steel mill, Hazelwood Green is located two miles from Pittsburgh's Downtown and less than a mile from the Oakland Innovation District, home to CMU and Pitt. The ownership, a consortium of three of Pittsburgh's leading philanthropic foundations, envision a thriving dense, walkable, and sustainable district—a living laboratory that embraces Pittsburgh's innovation economy.

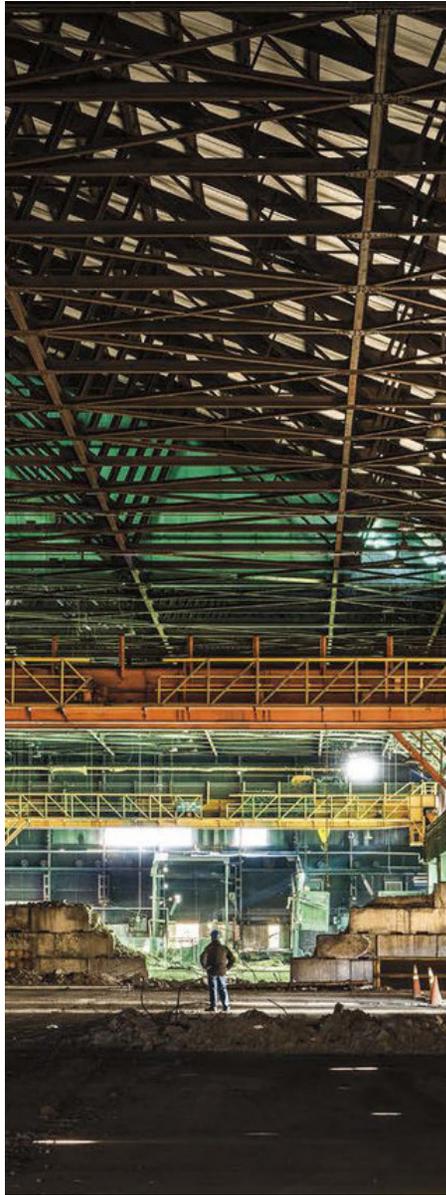
Hazelwood Green is on the brink of fulfilling the ownership's vision. Research and talent coming from neighboring universities, and the adjacent Hazelwood neighborhood remains accessible and

affordable. The Monongahela riverfront provides a prized natural asset, with a cycling trail that connects both recreational users and commuters to Hazelwood, South Side, Downtown and the Oakland Innovation District. The site, with an innovative master plan, has been remediated and fully graded. \$50 million in infrastructure improvements to date have prepared Hazelwood Green to accommodate development at the scale envisioned for HQ2.

The iconic Mill 19 building reflects the innovative vision of the site's owners. Reclaimed as an energy-efficient workspace, it will house CMU's Manufacturing Futures Initiative and the Advanced Robotics for Manufacturing (ARM) Institute—a consortium of 220 universities, manufacturers, governments, and nonprofits that develop robotic solutions to grow the national manufacturing ecosystem.

In order to increase access to the Hazelwood Green site, the City, County, ownership partners, and stakeholders have begun a community planning process to develop an autonomous shuttle system connecting Hazelwood to Downtown, the Strip District and Oakland. This on-demand service would offer HQ2 workers the unique opportunity to be part of the largest autonomous vehicle testing initiative in the country. The rapid transit service would connect Hazelwood Green to Oakland and Downtown in 10 minutes.

To meet Amazon's Phase One 500,000 square foot requirement, we offer a 5.3-acre parcel owned by the Regional Industrial Development Corporation and located adjacent to Mill 19 the future home of ARM. The site is ready for immediate development and can be delivered to meet Amazon's 2019 requirements.



# HAZELWOOD GREEN

## Basic Site Info

Neighborhood	Hazelwood
Site Area	178 acres
Exclusivity	March 2018

## Connectivity

Drive Time from CBD	15 minutes
Drive Time from Airport	30 minutes
Drive Time to Oakland (Pitt & CMU)	10 minutes
Proximity to Major Roads & Highways	I-376, Second Ave.
Existing Mass Transit	Accessible by 3 bus routes
Proposed Mass Transit	Autonomous shuttles and high-capacity transit (opening pre-2022, proposed as bus rapid transit, gondola, or rail)

## Development Potential

Current ownership	Heinz Endowments, Richard King Mellon Foundation, and Claude Worthington Benedum Foundation
Zoning	SP-10, to be amended through revisions to Preliminary Land Development Plan with Amazon input
Capacity (Phase I: 500k square feet in 2019)	Phase I development within 24 months of HQ2 selection and 15,000 square feet of CMU colocation space secured for Amazon pre-2019.
Capacity (Phase IV+: 8 million square feet)	Over 9 million square feet under proposed Master Plan
Development Plans	Ownership will adjust development plans to accommodate Amazon; Master Plan in place for mixed-use district and entitlements to be reviewed by City in early 2018
Infrastructure	\$50 million invested to date in site acquisition, demolition, remediation, utilities, and streets.

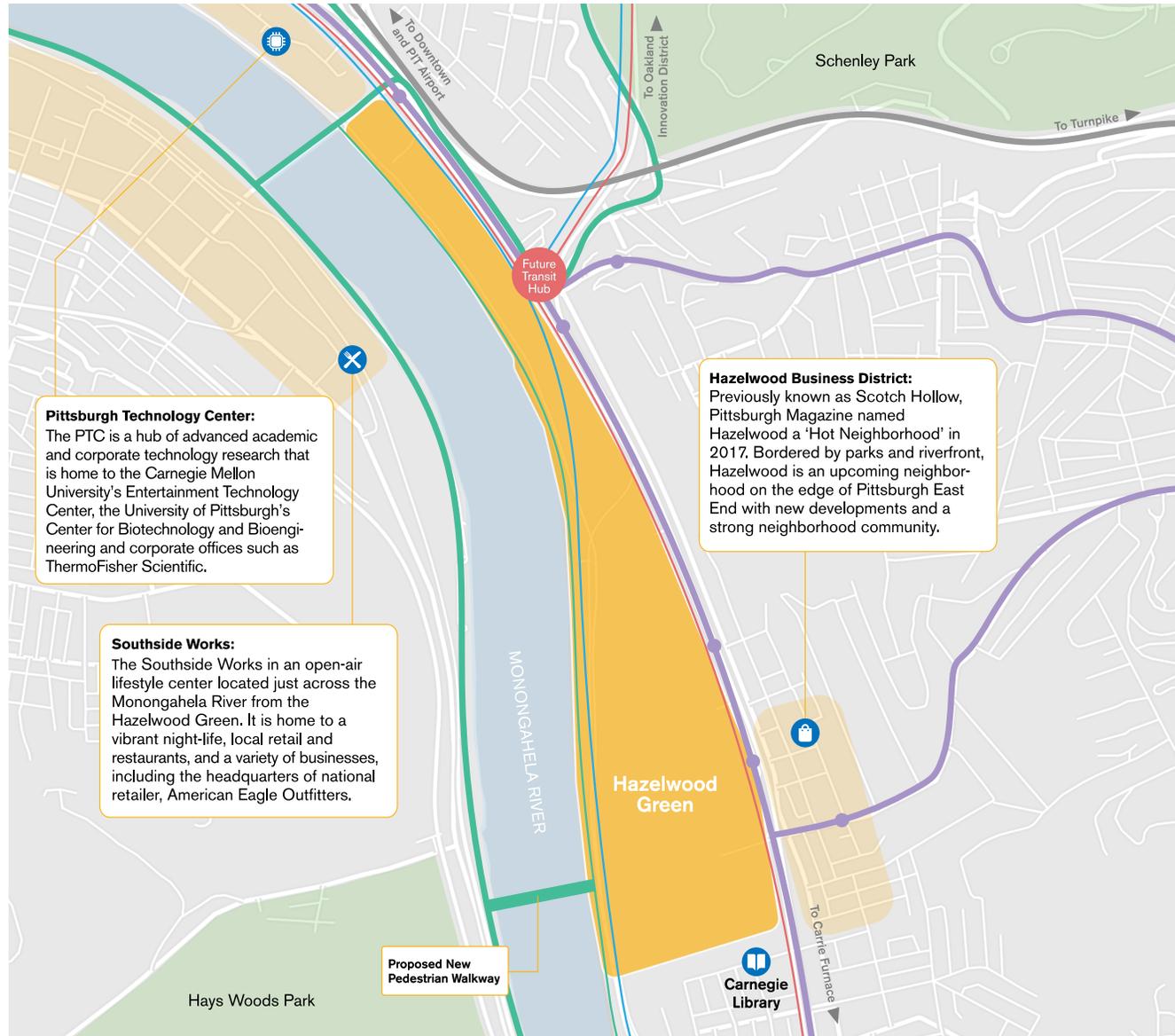


## HAZELWOOD GREEN

- 10 minutes TO OAKLAND, CMU & PITT
- 15 minutes TO CENTRAL BUSINESS DISTRICT
- 5 minutes TO ALL LOCAL MAJOR HIGHWAYS
- 30 minutes TO PITTSBURGH INTERNATIONAL AIRPORT

- Existing or Committed
- Proposed

- Dedicated Transit Lines
- Major Bus Routes
- Dedicated Bike Routes
- Autonomous Shuttle
- Major Highways



**Settled by a diverse group of immigrants, the development of Hazelwood was driven by J&L Steel, the last of Pittsburgh's Steel Mills to close. Workers made their homes on the hillside next to the mill and built a thriving community served by over 200 local businesses. Devastated by J&L's closure, the neighborhood was forced to find a new way to grow. Today, it is home to the largest developable brownfield (178 acres) in Pittsburgh.**





## LOWER HILL | DOWNTOWN EXTENDED

Immediately adjacent to Pittsburgh's central business district, the 28-acre Lower Hill site affords a true urban infill opportunity for HQ2. Offering up to 5.5 million square feet in potential Amazon office development on-site, with room to grow downtown by at least 2.5 million square feet, Lower Hill can fulfill Amazon's HQ2 needs in a true live-work-play district. The site was the former home of Pittsburgh's Civic Arena. Today it is adjacent to the PPG Paints Arena and in close proximity to Pittsburgh's major universities, medical centers and diverse housing options. The site is accessible by bus and light rail. A planned bus rapid transit system, scheduled to begin service in 2021, will travel between the site and the Oakland Innovation District, home to Pitt and CMU.

As an area already slated for redevelopment as a mixed-use district, Lower Hill is well-positioned for rapid, large-scale development. Ownership is willing to adapt its current plans to accommodate Amazon, allowing the company to create its own signature campus. The HQ2 site is development-ready and site preparation is underway, with \$55 million of the \$73 million required for site infrastructure already financed. The infrastructure includes streets, utilities, and an innovative cap park over I-579 to restore and expand the site's pedestrian connectivity to Downtown. The site will also be served by a district energy plant currently under construction.

The Sports and Exhibition Authority and Urban Development Authority of Pittsburgh

own the site with the Pittsburgh Penguins holding the development rights through an option agreement. Ownership is committed to delivering the parcel at no cost to Amazon. First phase commercial site development can be delivered in 2019–2020 in partnership with Amazon.

To meet Amazon's Phase 1 requirements, two existing class A commercial office buildings have committed to holding one million square feet of space off the market well into 2018. With city planning commission approval already in place, a pre-designed 500,000 square foot ground-up office building could also be completed within two years.



# LOWER HILL

## Basic Site Info

Neighborhood	Lower Hill, Downtown
Site Area	28 acres, 200 acres
Exclusivity	March 2018

## Connectivity

Drive Time from CBD	1 minute
Drive Time from Airport	25 minutes
Drive Time to Oakland (Pitt & CMU)	8 minutes
Proximity to Major Roads & Highways	I-579, I-376, I-279, Route 28, Fifth Ave, Forbes Ave
Existing Mass Transit	Accessible by light rail and 20+ bus routes
Proposed Mass Transit	Accessible by light rail and 20+ bus routes

## Development Potential

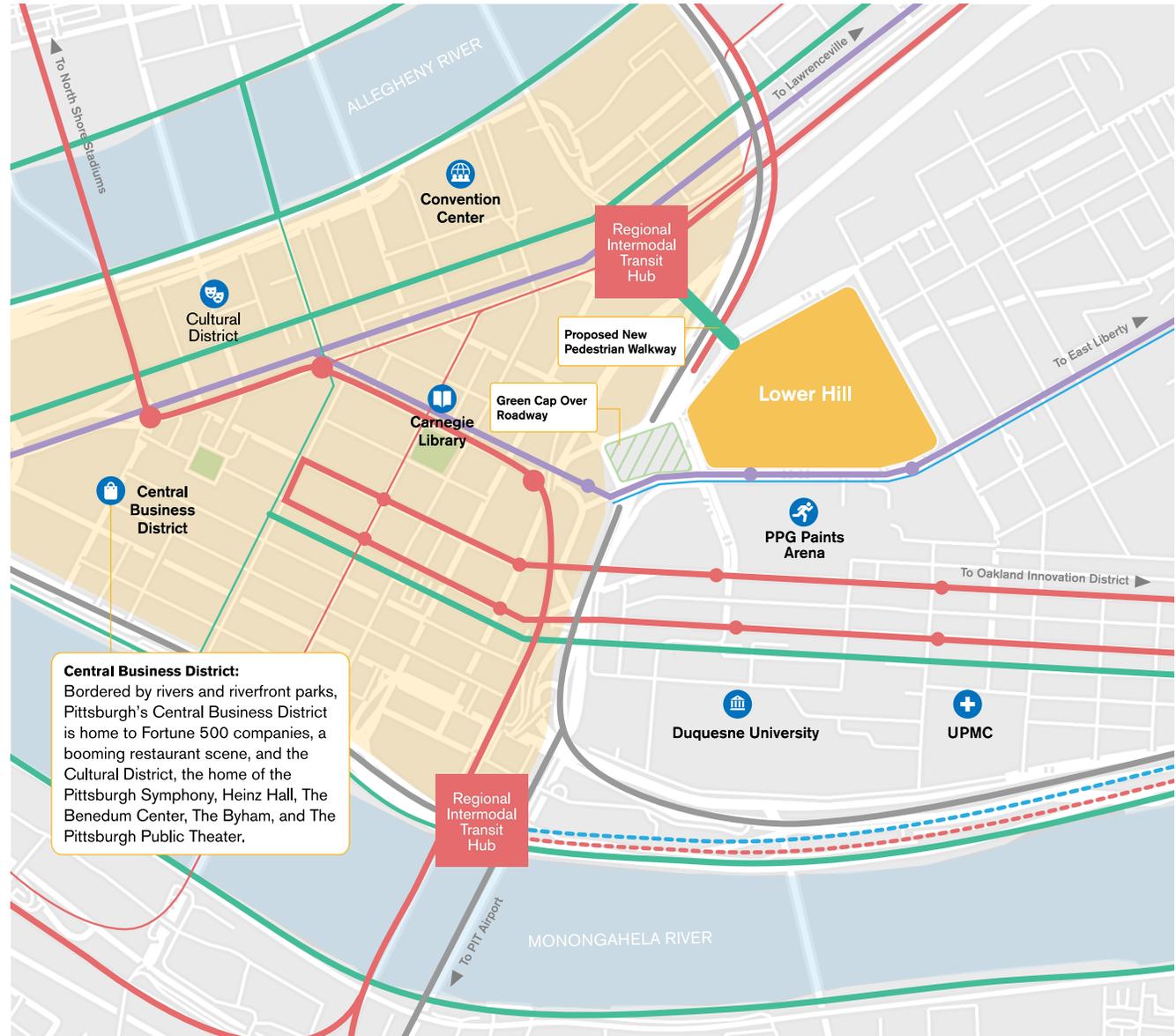
Current ownership	Jointly owned by Sports and Exhibition Authority and the City of Pittsburgh with development rights held by the Pittsburgh Penguins
Zoning	SP-11, to be amended through revisions to Preliminary Land Development Plan with Amazon input
Capacity (Phase I: 500k square feet in 2019)	Phase I development within 24 months of HQ2 selection 1 million plus square feet of Downtown office space and 15,000 square feet of CMU co-location space secured for Amazon pre-2019
Capacity (Phase IV+: 8 million square feet)	5.5 million–8 million square feet under current zoning
Development Plans	Ownership will adjust development plans to accommodate Amazon; currently entitled for mixed-use district
Infrastructure	Preliminary estimates \$55 million of \$73 million site infrastructure investment financed and underway, including streets, utilities, and a cap park over I-579 to connect the site to Downtown.



## LOWER HILL

- 8 minutes TO  OAKLAND, CMU & PITT
- 1 minute TO  CENTRAL BUSINESS DISTRICT
- 1 minute TO  ALL LOCAL MAJOR HIGHWAYS
- 25 minutes TO  PITTSBURGH INTERNATIONAL AIRPORT

-  Existing or Committed
-  Proposed
-  Dedicated Transit Lines
-  Major Bus Routes
-  Dedicated Bike Routes
-  Autonomous Shuttle
-  Major Highways



**Central Business District:**  
 Bordered by rivers and riverfront parks, Pittsburgh's Central Business District is home to Fortune 500 companies, a booming restaurant scene, and the Cultural District, the home of the Pittsburgh Symphony, Heinz Hall, The Benedum Center, The Byham, and The Pittsburgh Public Theater.

Historically one of the most ethnically diverse neighborhoods in Pittsburgh, the Hill District has produced nationally known figures including playwright August Wilson, photographer Charles “Teenie” Harris, and jazz legends Lena Horne, Billy Eckstein, and Earl “Fatha” Williams. Today the Hill District is experiencing a resurgence, anchored by its proximity to Downtown and Oakland and its wealth of community assets.





## THE STRIP | ROBOTICS ROW

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**A**mazon has the opportunity to anchor 44 acres in the Strip District, a Downtown-edge neighborhood that has rapidly transformed from a gritty industrial area to a national epicenter of autonomous vehicles and robotics research and development. A consortium of public and private owners led by Oxford Development Company is offering Amazon the opportunity to develop up to 8 million square feet near the riverfront. Oxford has led investments exceeding \$210 million over the past four years in the Strip District, transforming the neighborhood from an industrial zone into a cluster of technology and robotics innovation as well as professional service companies, all while maintaining its signature personality and charm as a historic market district. HQ2 at the Strip would be positioned alongside several large technology and robotics firms, including

Uber's Advanced Technologies Group and Argo AI, Ford's billion-dollar investment in artificial intelligence.

Amazon would benefit from the district's historic industrial architecture, walkable and bike-friendly public realm, and high-quality retail, cultural, and recreational amenities. The neighborhood is a cultural hub within the city, as evidenced by the expansion of the Pittsburgh Ballet Theatre and a new home for the Pittsburgh Opera. Historic factories and warehouse buildings have been converted into apartments and lofts, creating a vibrant and unique urban fabric. The area remains a center for international grocery stores and retailers, boutiques, and some of Pittsburgh's best restaurants. The Strip District is within walking distance of key attractions and amenities including the David L. Lawrence

Convention Center, the North Shore Stadium District, and Lawrenceville, recently named the "Coolest Neighborhood in America" by *Money* magazine. Its flat topography—distinct from Pittsburgh's characteristically hilly terrain—makes it ideal for walking and biking, while the river setting offers daily opportunities for kayaking, cycling, and strolling riverfront trails.

To meet Amazon's Phase 1 requirements, two existing class A commercial office buildings, located a short public transit away from the Strip District, have committed to holding 1 million square feet of space off the market well into 2018.



# THE STRIP

## Basic Site Info

Neighborhood	The Strip District
Site Area	44 acres
Exclusivity	March 2018

## Connectivity

Drive Time from CBD	5 minutes
Drive Time from Airport	30 minutes
Drive Time to Oakland (Pitt & CMU)	10 minutes
Proximity to Major Roads & Highways	I-579, I-276, Route 28, Liberty Ave.
Existing Mass Transit	Accessible by 5 bus routes
Proposed Mass Transit	10+ high-speed busway routes at new HQ2 stop (opening 2019)

## Development Potential

Current ownership	A consortium of public and private property owners led by Oxford Development Company
Zoning	UI and GI, all parcels to be rezoned to UI with Amazon input
Capacity (Phase I: 500k square feet in 2019)	Phase I development within 24 months of HQ2 selection 1 million square feet of Downtown office space and 15,000 square feet of CMU co-location space secured for Amazon pre-2019
Capacity (Phase IV+: 8 million square feet)	8 million square feet under current zoning
Development Plans	Ownership has put development plans on hold pending interest by Amazon; limited development planned or underway
Infrastructure	Preliminary estimates at \$67 million in site infrastructure will be delivered as part of buildout



## THE STRIP

10 minutes TO OAKLAND, CMU & PITT

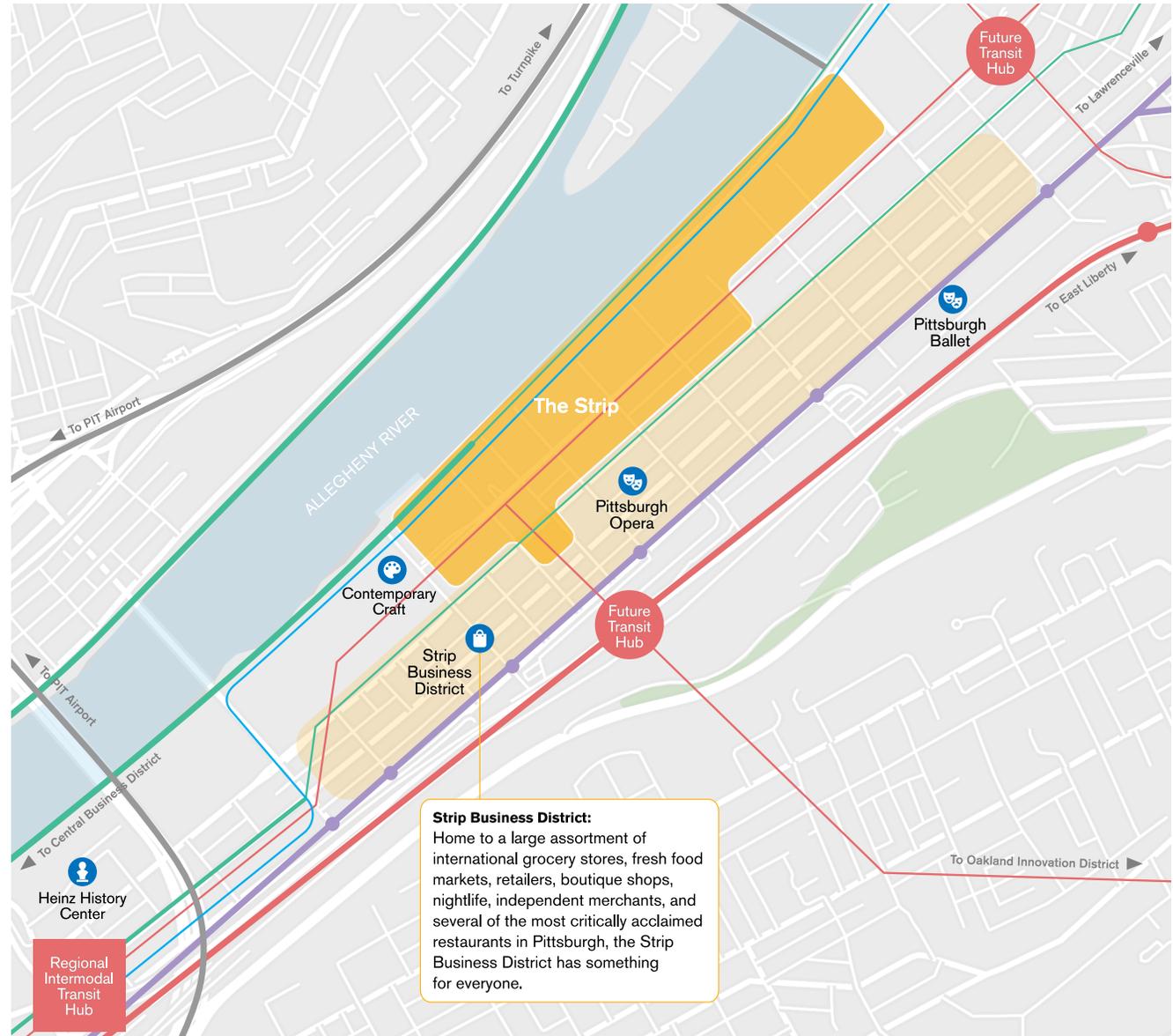
5 minutes TO CENTRAL BUSINESS DISTRICT

5 minutes TO ALL LOCAL MAJOR HIGHWAYS

30 minutes TO PITTSBURGH INTERNATIONAL AIRPORT

Existing or Committed  
Proposed

Dedicated Transit Lines  
Major Bus Routes  
Dedicated Bike Routes  
Autonomous Shuttle  
Major Highways



Originally developed as Pittsburgh's first point of entry for wholesale produce, the Strip District fed the City. It incubated what would become the industrial giants of U.S. Steel, Westinghouse, The H. J. Heinz Company, and Alcoa. Today, the commercial warehouse architecture remains but instead hosts robotic companies, high end housing, and a fresh air market.





# CARRIE FURNACE

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**T**he 65-acre Carrie Furnace redevelopment site provides a unique opportunity for Amazon within Allegheny County, with 56 acres of Monongahela riverfront property ready for immediate development. Carrie Furnace has a rich industrial history: It was purchased by Andrew Carnegie in 1898, acquired by U.S. Steel in 1901, and is now owned by the Redevelopment Authority of Allegheny County (RAAC).

Since purchasing the property in 2005, RAAC has invested heavily and strategically in the brownfield site. Investments include bringing the site above the 100-year flood plain, establishing utilities connection lines, installing stormwater and sanitary sewers, and creating additional access points for vehicles and alternative forms of transportation.

Additionally, RAAC has already demonstrated its commitment to revitalizing the site and its surrounding underserved community. It has worked with partners in the community to train the next generation of skilled workers, create affordable housing, revitalize brownfields, invest in entrepreneurs, and explore new transportation options. HQ2 would help accelerate infrastructure development as well as local economic development by bringing an influx of commercial activity to local vendors and neighborhood businesses.

Carrie Furnace can serve as an extension of Hazelwood Green, given their proximity and the potential for convenient bus rapid transit, bicycle, and pedestrian connections between the two sites.

Carrie Furnace is located 9 miles southeast of downtown Pittsburgh, and 5 miles east of Hazelwood Green.



# CARRIE FURNACE

## Basic Site Info

Neighborhood	Swissvale
Site Area	65 acres
Exclusivity	March 2018

## Connectivity

Drive Time from CBD	20 minutes
Drive Time from Airport	40 minutes
Drive Time to Oakland (Pitt & CMU)	20 minutes
Proximity to Major Roads & Highways	I-376, Braddock Ave
Existing Mass Transit	Accessible by busway and 4 bus routes
Proposed Mass Transit	Autonomous shuttles and improved connection to high-speed busway

## Development Potential

Current ownership	Public Ownership (County)
Zoning	Carrie Furnace Development District; allows for office and industrial use
Capacity (Phase I: 500k square feet in 2019)	Phase I development within 24 months of HQ2 selection and 15,000 square feet of CMU co-location space
Capacity (Phase IV+: 8 million square feet)	Highly flexible; can significantly exceed 8 million square feet
Development Plans	Ownership has put development plans on hold pending interest by Amazon; limited development planned or underway
Infrastructure	\$20 million invested to date in site acquisition, demolition, remediation, and streets



## SITE@PIT



**L**ocated adjacent to the Pittsburgh International Airport, the Site@PIT is a 152 acre development ready parcel. This site is zoned for commercial use and is currently undergoing site preparation. Owned by the Allegheny County Airport Authority (ACAA), the site can easily meet Amazon's space requirements. In addition to the 152 acre parcel, the ACAA can offer another 210 acres should Amazon's space requirements increase beyond 8 million square feet.

The site is 16 miles from downtown Pittsburgh and accessible via I-376 and the 28X Airport Flyer bus line, a loop between the airport, downtown Pittsburgh, and Oakland. Options for future mass transit linkages between the airport, downtown, and Oakland, such as Bus Rapid Transit, Light Rail Transit, and widening the I-376

corridor, have already been identified and analyzed for technical feasibility.

While a suburban location, the Site@PIT offers an opportunity to create the feel of a "global urban village" at the main entrance to the airport, connected directly to the airport terminal. Modeled after the Schiphol CBD development at Amsterdam's international airport, the Site@PIT will provide a wide range of amenities while providing the convenience of an on-airport location.

The entirety of the 362 acres lie within Foreign Trade Zone 33, providing duty and excise tax benefits, and carrying a "World Trade Center" designation, providing access to a global trade network and integrated trade services.



# SITE@PIT

## Basic Site Info

Neighborhood	Airport
Site Area	362 acres
Exclusivity	March 2018

## Connectivity

Drive Time from CBD	30 minutes
Drive Time from Airport	0 minutes
Drive Time to Oakland (Pitt & CMU)	35 minutes
Proximity to Major Roads & Highways	I-376, Route 576
Existing Mass Transit	Accessible by express bus route
Proposed Mass Transit	Autonomous shuttle and business-class high-capacity transit (opening pre-2019, proposed as bus rapid transit)

## Development Potential

Current ownership	Public Ownership (County)
Zoning	Business Park and Heavy Industrial, allows for office and industrial use
Capacity (Phase I: 500k square feet in 2019)	Phase I development within 24 months of HQ2 selection and 15,000 square feet of CMU co-location space
Capacity (Phase IV+: 8 million square feet)	Highly flexible, can significantly exceed 8 million square feet
Development Plans	Ownership has put development plans on hold pending interest by Amazon; limited development planned or underway
Infrastructure	Development ready

West Virginia's I-79 Technology Park, located just 90 miles south of Pittsburgh, would be ideal for a Data or Cloud Services center. The Park has best-in-class electric and connectivity infrastructure with a new expandable 14MW electric substation and GigaPoP internet capability. It is home to 30 businesses and several federal agencies, including the National Oceanic and Atmospheric Administration (NOAA), which has built one of the world's most advanced supercomputing centers at the site. A facility at the Park would have significant strategic benefits for Amazon, as Amazon Web Services has already partnered with NOAA for its "Big Data Project" based on-site. If Amazon brought its HQ2 to Pittsburgh, the West Virginia High Tech Foundation has committed to offer land at the Park to Amazon for free to build a Data or Cloud Services center.

## AVAILABLE TODAY

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**Should Amazon begin relocating to Pittsburgh prior to 2019, we have over 1 million square feet of Class A office space located in Downtown Pittsburgh and the North Shore ready and waiting.**

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### **525 William Penn Place & Nova Place**

**525 William Penn Place** is an existing 41-story, 934,000 square foot office tower located in the heart of Pittsburgh's CBD. The building can offer Amazon 600,000 square feet, spanning from the base of the building to the tower floors.

**Nova Place** is a newly renovated 1.5 million square foot first-class office building within a broader 30-acre mixed use redevelopment project located in the North Side, just across the Allegheny River from Downtown. Owner/developer Faros Properties has committed to hold 500,000 square feet of turn-key space available for Amazon. The North Side has a direct subway connection to downtown, and is home to more than 10 museums and award-winning cultural attractions including the Andy Warhol Museum, PNC Park, Heinz Field, and Carnegie Science Center.

### **Downtown, Strip District & Oakland Innovation District**

In addition, Downtown Pittsburgh has nearly 1.2 million square feet of Class A commercial space available today that can immediately meet the company's office needs. With average asking rents of approximately \$30 per square foot for Class A office space, Downtown could accommodate full Phase 1 requirements and more by 2019 at a low cost to Amazon relative to other markets.

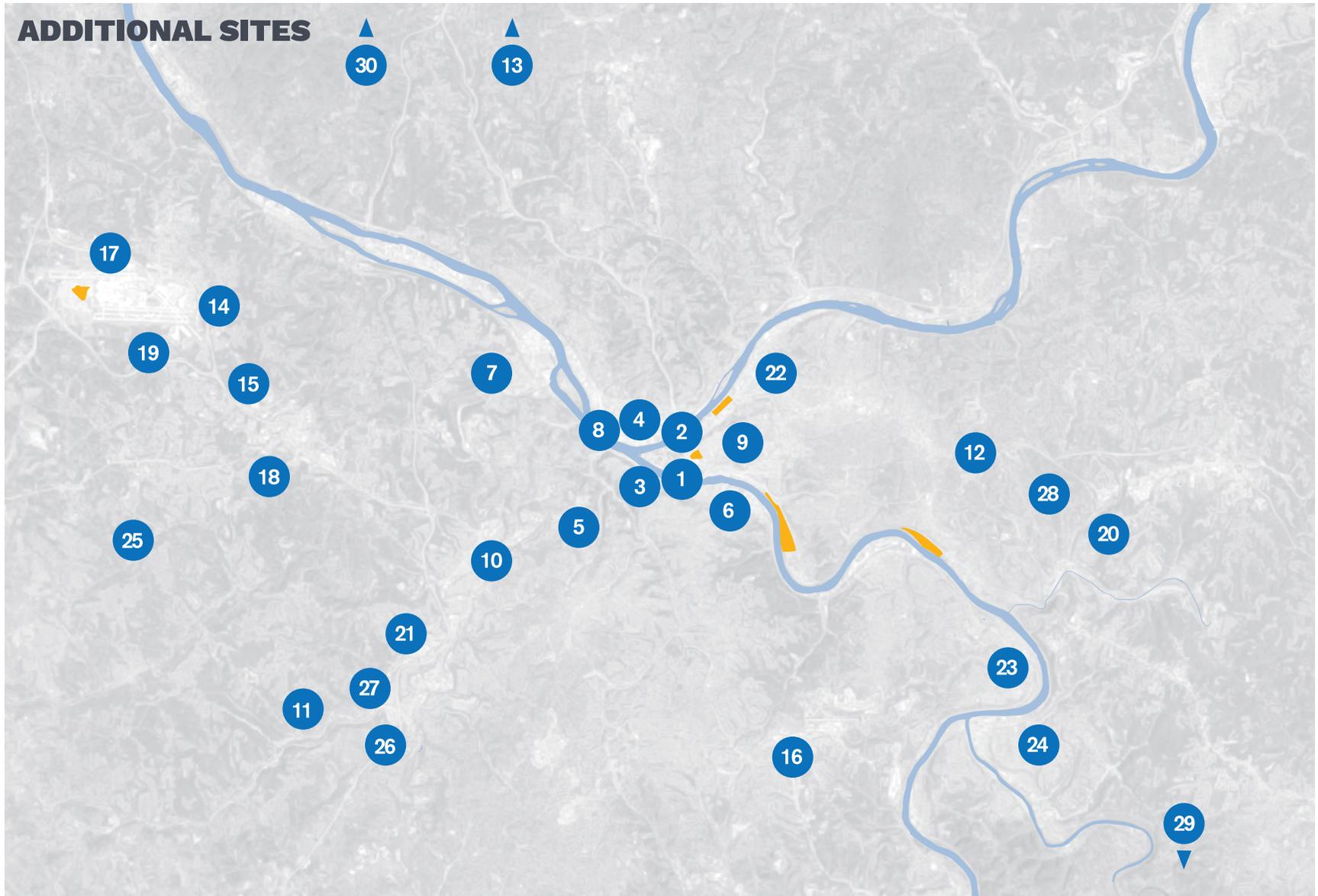
**The Strip and the Oakland Innovation District**—the hottest tech hubs in Pittsburgh—offer an additional 230,000 square feet of available space. These markets have experienced new commercial construction and renovation driven by growing demand from high-tech companies. The Strip submarket attracts companies seeking to join Robotics Row, while Oakland and the East End attract firms interested in locating next to CMU and Pitt. Amazon could establish a sizable presence in these areas, if desired.

## ADDITIONAL SITES

	Site Name	Owner	Private/ Public	Size (acres)	Capacity (SF)	Distance to CBD (min)	Distance to Airport (min)
1	1 Smithfield	Burns Scalo	Private	0.7	217,500	5	46
2	Parking Garage Assemblage	Pittsburgh Parking Authority	Public	15	8,350,000	5	43
3	Station Square	McKnight, Trammell Crow, Forest City (response by McKnight)	Private	98	510,000 initial (long- term TBD)	6	31
4	North Shore Towers	Stabile Family	Private	3	600,000–800,000	8	37
5	Parkway Center	Kossman	Private	100	5,400,000	8	24
6	SouthSide Works	Highwoods	Private	3	up to 680,000	12	46
7	The Rocks Intermodal Park	Trinity Commercial Development	Private	40		13	25
8	Esplanade	Millcraft	Private	15	500,000– 1,000,000	15	36
9	Walnut Capital (5 Sites)	Walnut Capital	Private	5	800,000	18	27
10	Carnegie Office Park	Cynthia Raftis	Private	135		18	20
11	Kosky Industrial Park	Cuddy Partners, LP	Private	700		20	20
12	Churchill Development Opportunity	Churchill Community Developments, LP	Private	135	503,000	24	50
13	Thorn Hill Innovation Ridge	Response by RIDC	Private	100	1,000,000+	25	36
14	Cherrington Phase II (Site 5)	Allegheny County Airport Authority	Public	25		25	8

15	Moon Township–Alpha Corporate Center	Kossmann/Chevron	Private	96	1,500,000	26	9
16	Century III Mall	Century III Mall Pa LLC	Private	87	1,290,580	27	45
17	Northfield Site	Allegheny County Airport Authority	Public	80		27	7
18	Imperial Business Park	Imperial Business Park LP	Private	50		27	14
19	Airport Sites (9, 10, 11)	Allegheny County Airport Authority	Public	1724		27	8
20	Parkway East Corridor Cluster	Sullivan Management	Private	66		27	45
21	Trader Jack's Flea Market	Bencho & Cargnoni	Private	100	up to 8,000,000	28	30
22	Iron Brewery Site	Bencho & Cargnoni	Private	9	up to 8,000,000	28	30
23	RIDC City Center of Duquesne	RIDC	Private	72		28	40
24	RIDC McKeesport	RIDC	Private	133	733,000	28	60
25	North Branch Land Company	North Branch Land Company	Private	80		28	16
26	Cool Valley Development	Washington County Authority/T&R Properties	Mixed	250	1,250,000 initial	35	35
27	South Fayette Township	Cuddy Partners	Private	150	up to 8,000,000	37	23
28	Monroeville	Response by Municipality of Monroeville	Public	138	725,000 initial	37	70
29	Dunbar Township Business Park	Faye-Penn	Private	311	10,000,000+	41	94
30	Millennium Technology Park	Lawrence County Economic Development Corporation	Public	300	8,000,000+	65	51

# ADDITIONAL SITES





## INCENTIVES

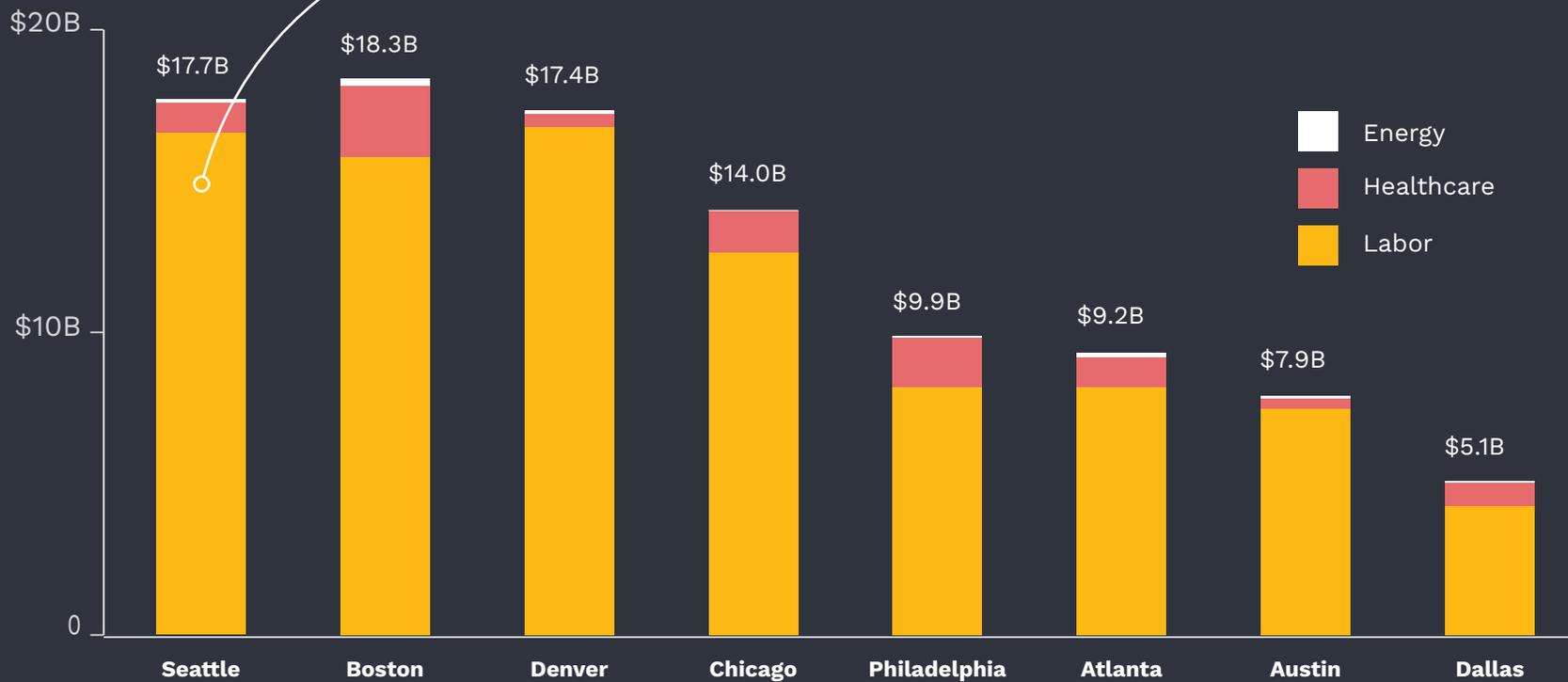
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Our investment package builds on Pittsburgh's underlying economic strength and affordability. We're prepared to offer a suite of capital supports, operating subsidies, and regional investments that will get you out of the ground, give you operating flexibility, and set a new global standard for translating growth into broad prosperity.

## COST COMPARISON

Projected operating cost savings for Amazon over 25 years.

By locating in Pittsburgh, Amazon would save \$17.7 billion over 25 years in labor, energy, and healthcare costs relative to Seattle.



Source: HR&A Analysis, 25-year NPV based on Amazon, MIT, USEIA, and AHRQ data. Labor calculated based on Amazon estimate of \$100K average wage per job, applied a cost of living premium calculated using MIT Living Wage data for metropolitan areas. Utilities calculated based on electricity local data for average commercial cost per kWh for electricity

Pittsburgh can offer excellent quality healthcare at lower costs because of its two large integrated health systems: UPMC and Highmark Health. Both are among the country's leading integrated healthcare delivery and financing systems, which manage patients' insurance and treatment together within the same entity. This innovative, integrated approach enables providers to take actions in one place that will cut costs or lift performance in another, and some experts suggest that integrated systems can provide better care at 20–30% lower cost. UPMC and Highmark's presence in Pittsburgh will help ensure that Amazon's employees would receive high quality care at lower costs for years to come.

## LONG-TERM COST CONTROLS

Simply by locating HQ2 in Pittsburgh, Amazon will reduce its operating costs by 18%, relative to Seattle. Pittsburgh's inherent economics unlock long term cost benefits that set the city apart. Low costs of living support talent attraction and lower employment costs. Compared to Seattle, labor costs in Pittsburgh are 19% lower, healthcare costs are 8% lower, and energy costs are 45% lower. In comparison with Amazon's Seattle operations, these long-term cost controls could offer Amazon over \$17.7 billion over 25 years, or approximately \$350,000 per employee.

### Labor Costs

Pittsburgh's deep talent pool in a competitively low cost environment will provide significant savings to Amazon over the near- and long-term. Based on cost of living data from the Massachusetts Institute of Technology, the lower cost of living in Pittsburgh require salaries of up to 19% lower than Seattle. By locating in Pittsburgh, Amazon could save over \$16.6 billion in labor costs over 25 years.

### Healthcare Costs

Pittsburgh's cutting edge approach to integrated healthcare delivery lowers costs for employers and residents, positioning Amazon to save operating costs while providing employees exceptional healthcare quality. Based on a survey of health

insurance premium costs, the Pittsburgh metro area ranks in the top three of large metro areas for lowest employer healthcare costs per employee. Expenses for employer-based insurance are 8% lower than Seattle according to the Department of Health and Human Services' annual survey, which ranked Pittsburgh as one of the top cities for affordable healthcare. Pittsburgh's unique delivery model and strong institutional collaborations position it to maintain the quality and affordability of care over the long-term. At the scale of employment envisioned for HQ2, the operating cost savings from this competitive healthcare environment will save Amazon nearly \$1 billion over 25 years.

### Energy

Compared to other progressive energy cities including Denver and Dallas, Pittsburgh has the lowest average commercial utility costs. At the scale of energy usage typical for large commercial buildings, local energy costs in Pittsburgh could save Amazon \$67 million, relative to Seattle operations, over 25 years. In addition to baseline cost savings, innovative energy delivery programs offer opportunities to support Amazon in its sustainability goals while keeping energy costs low in the long-term.

Pittsburgh is a national leader in sustainable energy delivery. We participated in the invention of clean energy and will work with Amazon to continually improve the energy sector.

In July of 2015, The City of Pittsburgh signed a Memorandum of Understanding with the USDOE to foster the development of energy grid modernization and district scale energy solutions. In accordance with the “Pittsburgh Way” of inter-agency collaboration, the agreement created a collaborative network of city, university, philanthropic and national lab connections designed to advance research and development, drive energy innovation and implement strategic district scale energy projects in the City. Projects focus on the integration of renewable energy integration, distributed energy delivery and electrical grid modernization. The model partnership is helping to increase electricity reliability, support business continuity and resilience and enhance economic and environmental benefits within the Pittsburgh energy ecosystem.

**Below are some forward-thinking creative energy solutions operating or being investigated in Pittsburgh today:**

- Power Purchase Agreements (PPA) for district energy from Duquesne Light, microgrid energy from People’s Gas or renewable energy from a provider such as Everpower.
- Reverse Energy Auction with the City of Pittsburgh and the Western Pennsylvania Energy Consortium, which aggregates the power consumption of local consumers to allow for block purchases.
- The Clean Power Marketplace, a proposed online renewable power procurement platform that can match Amazon with renewable power producers to provide cost effective clean power solutions.
- The City of Pittsburgh, United States Department of Energy, and the National Energy Technology Lab have agreed to research, develop and deploy district energy and microgrid systems

within Pittsburgh. The project was developed in conjunction with Pitt’s Center for Energy, and aims to embed engineering innovation developed in the school in support of Pittsburgh’s development needs. [See Appendix Q for more details on these energy solutions.]

**“Pittsburgh’s bid reflects existing priorities and initiatives that are already underway, not speculative future plans. The team that came together to work on this process are a specific example of a general theme: Pittsburgh institutions simply work well together to get things done.”**

**–Sean Luther**

*Executive Director, InnovatePGH*

Program	Benefit	Jurisdiction	Commonwealth Valuation*	Local Valuation	Benefit Years
<b>Capital Support</b>					
PennDOT Capital Improvement Grants	Infrastructure	Commonwealth of Pennsylvania	\$100 M	\$81 M	10 Years
TIF/TRID	Land & Infrastructure	Allegheny County, City of Pittsburgh, Pittsburgh Public Schools, Urban Redevelopment Authority	\$716 M	\$426 M	20 Years
Parking Tax Diversion	Infrastructure	City of Pittsburgh	\$222 M	\$130 M	20 Years
<b>Operating Support</b>					
PA Performance-Based Grants Program	Land, Infrastructure & Workforce	Commonwealth of Pennsylvania	\$4.5 B	\$1.3 B	25 Years
<b>Regional Investments</b>					
Forging Pittsburgh's Future Investments	Economic Development	Allegheny County, City of Pittsburgh, Pittsburgh Public Schools	\$4.2 B	\$2.1 B	25 Years
<b>Total Incentives</b>			<b>\$9.7 B</b>	<b>\$4.0 B</b>	

\*[See Appendix B for details on the City and Commonwealth's methodologies to estimate the value of the program in present value and nominal terms.]

In collaboration with the Commonwealth of Pennsylvania, Allegheny County, the City of Pittsburgh and Pittsburgh Public Schools, we are prepared to offer Amazon a package valued at \$4 billion over 25 years. This package will include the following three components:

- **Capital Support:** \$637 million in upfront capital support to reduce Amazon's Day 1 occupancy costs. This funding includes land value, site-related infrastructure, and transit investments.
- **Operating Subsidies:** \$1.3 billion in ongoing subsidies delivered as a grant from the State equal to 100% of Commonwealth Personal Income Tax paid by HQ2 employees.

- **Regional Investments:** \$2.1 billion in Forging Pittsburgh's Future, a series of investments that will improve the quality of Amazon's future workforce through pre-K, K-12, and workforce development programs. These investments will also ensure that housing remains affordable at all income levels and that our transportation and utility infrastructure capacity expands to meet our growth. Funded by incremental sales, local income, payroll preparation, and local service taxes, this unprecedented initiative will allow Amazon and local leaders to maintain a low-cost environment and avoid the rising costs, congestion, and inequities seen in other cities.

## Capital Support

The region is committed to providing a suite of tools that will enable Amazon to achieve cost-effective acquisition and build-out of its selected site. The proposed capital support incentives include:

### Free land

We have executed option agreements with five featured sites and will offer Amazon's selected site at no cost to Amazon. The structure of the real estate deal can take many forms based on Amazon's preferences and may be financed through Tax Increment Financing (TIF). The option agreements define valuation methodology and clear transactional structures.

### On- and off-site infrastructure

We will pay for on- and off-site infrastructure costs at HQ2, including utilities, streets, public transit, and site preparation. This will be funded through:

- \$81 million in Capital Improvement Grants administered PennDOT to accelerate priority transportation projects, spur economic development, and assist with state surface transportation needs on state-owned roads and right-of-ways necessary to accommodate HQ2. [See Appendix B for details on the Commonwealth's offer].
- \$426 million from Tax Increment Financing District (TIF) or Transit Revitalization Investment District (TRID) financing committed by the City, County, and Pittsburgh Public Schools. Bonds will be issued to pay for a broad range of public infrastructure improvements and is regularly

used to provide low-cost financing for economic development projects. Under the TIF program, a specific geographic area, the TIF district, is established, within which up to 75% of the incremental real estate tax revenue generated by new development can be used to finance public infrastructure. TRID functions similarly to TIF, and is a structure used to provide low-cost financing for transit-oriented development.

- \$130 million from Parking Tax Diversion (PTD). In addition to TIF and TRID, the City proposes to use the PTD program to help address site preparation costs and reduce Amazon's upfront expenditures. The PTD program utilizes up to 75% of incremental parking tax revenue generated by a development to finance associated improvements.

## Operating Subsidies

The Commonwealth of Pennsylvania is committed to enacting legislation to deliver Performance-Based Grants estimated to be \$1.3 billion in present value terms over 25 years, in an amount equal to no more than 100% of Personal Income Tax collected by the Commonwealth from direct, full-time Amazon HQ2 employees. The funds will be offered to Amazon as an annual grant for a period not to exceed 25 years. The grant may be used by Amazon for costs including site acquisition, construction, utility and transportation infrastructure, apprenticeship programs, cooperative education programs, and student education debt of new employees. [See Appendix B for details on the City and Commonwealth's methodologies to estimate the value of the program in present value and nominal terms.]

# FORGING PITTSBURGH'S FUTURE INVESTMENTS



## Neighborhood Improvement & Housing Affordability

- Home Rehab Investment
- Construction of New Units
- Preservation
- Small Business Support



## Workforce Development (Pre-K–Adult)

- Community Colleges
- Partner4Work
- STEAM Integration
- Universal Pre-K



## Infrastructure

- Transportation Infrastructure
- Water Infrastructure

## Regional Investments

**F**orging Pittsburgh's Future Fundamentally: a critical part of Pittsburgh's attractiveness for HQ2 is that it offers Amazon the chance to operate in a low-cost, high-value environment. Over the next 25 years and more, the City of Pittsburgh, Allegheny County, and the Pittsburgh Public Schools have committed to Forging Pittsburgh's Future—a \$2.1 billion economic development strategy dedicating substantially all incremental taxes not otherwise diverted through TIF, TRID, and PTD to funding public projects and initiatives that will benefit Amazon and its employees, as well as existing businesses, workers, communities, and residents.

These investments will help Pittsburgh effectively respond to Amazon's arrival, maintain its overall affordability, and mitigate the displacement and disruption of existing residents and businesses. They also will enable Pittsburgh to preserve the low cost of operation and high quality of life that makes it attractive to world-class talent. The City, County, and Pittsburgh Public Schools are committed to bonding against future tax revenue and working collaboratively to identify a set of shared funding priorities that can guide investment. Forging Pittsburgh's Future may include potential funding opportunities for:

- Investments in future-focused workforce development and education, potentially including expanded Universal Pre-K; enhanced STEAM and digital literacy programming; upgraded Pittsburgh

Public Schools facilities, and greater funding for the Community College of Allegheny County.

- Investments in essential public infrastructure, potentially including increased public transit coverage and service; citywide transportation improvements; and drinking water and stormwater management infrastructure improvements.
- Investments in neighborhood quality, potentially including expanded affordable housing programs, improved community facilities and parks, and small business support.

The City, County, and Pittsburgh Public Schools will work together to coordinate investments and issue bonds against the anticipated tax increment generated by Amazon's development and operations. We have secured letters from the executive and legislative leadership of each jurisdiction to pursue this strategy if Pittsburgh is selected for HQ2. [See appendix A for City, County, and School District commitment letters.] Bond covenants will provide certainty that the revenue derived from Amazon will be dedicated to mutually-identified priorities. Bonds will be issued in tranches in accordance with a performance-based agreement between Amazon and the City, County, and Pittsburgh Public Schools to ensure that sufficient incremental taxes will be generated to service public debt. The City plans to ask Amazon for a commitment to a development and operations timeline to guide the bonding timetable. To lower the cost of capital, the bonds may be backed

“We’re at an interesting inflection point that a lot of other cities have either blown past or aren’t at yet, where the momentum of the economy still hasn’t driven out the folks in the community, but we all worry it will leave some people behind. There’s still an opportunity for us in Pittsburgh to engage and make a difference.”

—Grant Oliphant  
*President of The Heinz Endowments*

partially by the City, County, and a consortium of corporate and philanthropic entities, in addition to taxes generated by Amazon.

### **Additional State and Local Grant Programs**

Below are two relevant existing grant and loan programs Amazon could pursue should it locate HQ2 in the Pittsburgh. These programs would be in addition to the incentives package outlined above.

**Research & Development Tax Credit:** *PA Department of Community & Economic Development*

Ten percent state tax credit of company’s increased research and development expenses over a base period (prorated to not exceed \$15 million annual cap for all businesses). Tax credit can be assigned or sold.

**Solar Energy Program:** *PA Department of Community & Economic Development*

\$30 million loan fund to promote the use of solar energy in Pennsylvania. Loans for component manufacturers of solar energy generation equipment up to \$40,000 for every new job created within three years after approval of the loan. Loans for solar energy generation or distribution projects shall not exceed \$5 million or \$3.00 per watt, whichever is less.

# INCENTIVES APPROVAL, TIMING, AND CERTAINTY

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All taxing bodies and jurisdictions have committed to approving incentives when Amazon chooses to locate in Pittsburgh. [See Appendices A & B] for commitment letters from the City, County, Commonwealth, and Pittsburgh Public Schools.] Below are the specific timelines and approval processes associated with each program. PGHQ2 will also receive support, input, and guidance from key stakeholders including the Office of the Mayor, the Office of the County Executive, Carnegie Mellon University, University of Pittsburgh, the Heinz Endowments, and the Hillman Family Foundation. PGHQ2 will also tap into the relationships generated by the Power of 32, an initiative to convene the leadership of the 32 Maryland, Pennsylvania, Ohio, and West Virginia counties surrounding Pittsburgh.

**Capital Improvement Grant:** The Governor of Pennsylvania has committed to fund the existing Capital Improvement Grant program for HQ2, should Amazon move to the Commonwealth.

**Tax Increment Financing District:** For a TIF to be implemented, the City, County, and School District must pass an inducement resolution establishing a joint committee to develop a TIF Plan. They must approve the final TIF Plan, authorize the diversion of future tax revenue, and designate the Urban

Redevelopment Authority of Pittsburgh to manage the district. The process to establish a TIF district generally takes 9–15 months, depending on whether a Redevelopment Area already exists. The City, County, and School District have committed to approve this funding.

**Transit Revitalization Investment District (TRID):**

For a TRID to be established, the City, Urban Redevelopment Authority of Pittsburgh, and Port Authority of Allegheny County must complete a planning study. In addition, the City, County, and School District must pass a resolution to participate in the TRID, and hold at least one public meeting and enact an ordinance establishing the TRID. Following the meeting, participating parties must enter into a cooperation agreement establishing TRID governance and operations. The process to establish a TRID district generally takes 6–8 months if a TRID Plan exists and 12–15 months otherwise. The City, County, and School District have committed to approve this funding.

**Parking Tax Program:** Generally, the process to implement a PTD takes 6–12 months. The City has committed to approve this funding.

**Performance-Based Grants:** Legislative leadership and the Governor have committed to create the program, and the Pennsylvania Department of Community and Economic Development has committed to approving it.

“...in Pittsburgh, the Renaissance City, the cheering will never stop. When you play Pittsburgh, you play the whole city. Yes, it’s still the City of Champions. It has nothing to do with victories. Pittsburgh has a winning character.”

—Howard Cosell

## DELIVERY

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If Amazon chooses to locate HQ2 in Pittsburgh, the City, County, Pittsburgh Public Schools, and partner jurisdictions will secure the necessary legislative, public, and other approvals required for each of these incentives. With PGHQ2, Amazon will have a dedicated entity to guide the development of HQ2, coordinate public support and approvals, and grow the innovation economy in Pittsburgh.

PGHQ2 will serve as Amazon’s dedicated partner for initiatives ranging from campus planning and permitting to technology prototyping and workforce development. With a direct line to the Mayor and Allegheny County Executive, PGHQ2 will act as the primary liaison between Amazon and other elected officials, foundations, universities, and businesses that have volunteered their support for HQ2. A key mandate of PGHQ2 is to meet the approval

timelines of the incentives we have described. This unique structure will allow Amazon to focus on its core business and communicate with a single representative of the Pittsburgh region. PGHQ2 staff will focus on solving any problems and leveraging existing and newly created resources to address issues and opportunities most important to Amazon.

This dedicated entity will be housed within the Allegheny Conference, a regional civic leadership organization with a 70-year track record of using public-private partnerships to improve our region’s economy and quality of life. The Conference is led by executives and institutional leaders from across the Pittsburgh region, all of whom provide their time, energy, and resources to drive the future of our region.

# 3

## OUR FUTURE

Our story is one of invention and reinvention: from steel to software, plate glass to robotics, and aluminum to autonomous technology. Guided by lessons from our past and a vision for the future, today our ideas are bigger and our communities are stronger than ever.





## **WE CAN GROW WITH YOU**

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With sturdy bones and room to grow, we have a solid foundation for expansion.

Our housing stock and infrastructure—including our airports and transit—can accommodate Amazon today. We have the capacity to grow with you like no other city can. Together, we will build a city of the future that is better for Amazon and better for Pittsburgh.

**“Having come from San Francisco, I initially was skeptical about Pittsburgh and the opportunities it would present. In the seven years we have been here, I can say that it is by far the best move I ever made both professionally and personally.”**

**—Andrew Flynn**  
*Founder & CEO, Aquorn*

## Housing Capacity

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We are positioned to absorb a large influx of new households at reasonable prices for the long-term. The City of Pittsburgh has 11,400 housing units under development today and 3,200 more in the suburbs. We conservatively estimate that the City has capacity for an additional 76,000 units within existing zoning stipulations; and Allegheny County can accommodate an additional 370,000 units. Combined, the region can absorb over 446,000 additional dwelling units without risk of the rising costs experienced by other cities. To facilitate the rapid relocation of Amazon employees to Pittsburgh, the local brokerage community has committed to mobilizing in advance of HQ2. They will provide seamless relocation services for Amazon employees and their families.

As Pittsburgh continues to grow, we recognize the need to be proactive about maintaining affordability for our residents. The City will continue to build upon the work of the Affordable Housing Task Force and implementation of the Housing Executive Orders issued by Mayor Peduto in February 2017. This includes funding the Housing Opportunity Fund, revising the municipal tax abatement policies in partnership with Allegheny County and Pittsburgh Public Schools, and creating community-based, inclusionary and incentive based zoning policies through the Inclusionary Housing Working Group.

Partnering with PolicyLink, Pittsburgh has undertaken an ambitious equity agenda designed to ensure that all of our residents benefit from the economic growth of our region. The plan—developed in partnership by government, philanthropy, neighborhood groups, nonprofits, and our corporate community—is comprised of five goals, with specific action steps to achieve each of them.

### **The five goals of the plan are:**

- Raise the bar for new development;
- Make all neighborhoods healthy communities of opportunity;
- Expand employment and ownership opportunities;
- Embed racial equity throughout Pittsburgh’s institutions and businesses; and
- Build community voice, power, and capacity.

Reaching these goals will mean a more resilient and successful region that avoids the pitfalls of larger cities, many of which have become increasingly unaffordable and out of reach. We have the opportunity to show that our region can develop without displacement, provide real pathways to education and living wage jobs, and welcome people of all cultures and races with open arms and a seat at the table. [See Appendix K for more details on housing in Pittsburgh.]

## Transportation Capacity

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From our public transit system to our airport, Pittsburgh has the infrastructure and excess capacity to accommodate more travelers today. To seize future opportunities and accommodate inevitable population increase, our city is already preparing for additional growth.

Dominated by light rail and bus, Pittsburgh's public transit system is nimble. The fleet can expand rapidly to accommodate a major population influx.

The T light rail system operates at 5-minute frequencies in Downtown and 10-minutes outside of Downtown, but has the potential to run every 3 minutes. By increasing the frequency of rides, it can add approximately 30% more passengers without building new rail lines. Currently operating with 20 buses per hour per direction, the busway system can immediately accommodate up to 60 buses per hour. It can quickly and easily expand by up to 200% without major additional capital investments. The regional bus fleet has enough vehicles to expand by 25% on either regular roads or the dedicated busways. [See Appendixes L, M, & N for a detailed map of our public transit system.]

## Aviation Capacity

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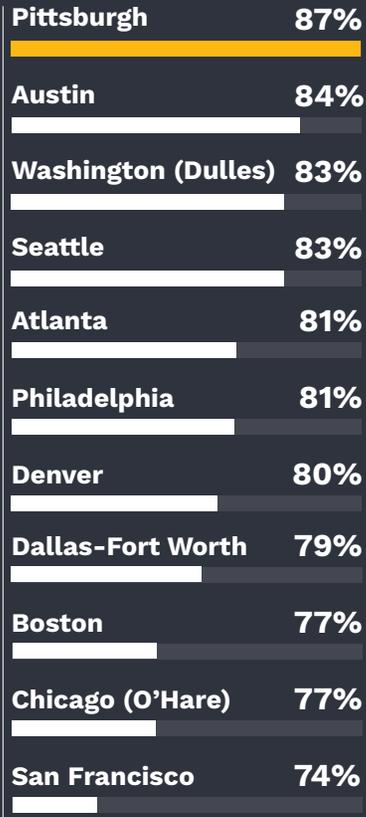
Within 500 miles of 10 of the 30 largest U.S. cities, and 45% of the total population of the country, Pittsburgh is a bullseye for logistics and transportation.

Pittsburgh International Airport offers daily, year-round, nonstop service to New York, Washington, D.C., and San Francisco among other markets across the country, Europe and the Caribbean. The airport is already in high-level discussions with multiple carriers in order to secure non-stop flights to Seattle and additional service to the Bay Area. This additional West Coast service is the airport's highest priority and leadership is committed to providing market-leading incentive packages. Meanwhile, multiple carriers are already in negotiations to expand non-stop service to Seattle, regardless of the HQ2 location decision.

In the past three years, the airport has increased the number of nonstop destinations by 80%, from 37 to 68 cities, and is on track this year to increase its passengers to nearly 9 million—the highest in a decade. Airlines have recognized the airport's momentum and eight new carriers have started service. International nonstop service includes frequent flights to Toronto, Frankfurt, Paris and Reykjavik. Year-to-date passenger traffic is up 8% as new service continues to be embraced. Pittsburgh also has scheduled nonstop freighter service to Europe and Asia on Qatar Airways Cargo, a unique differentiator among mid-sized cities.

## ON-TIME FLIGHTS

Average airport on-time performance rate.



70%

Source: US DOT, Bureau of Transportation Statistics (YE July 2017)

Pittsburgh International Airport (PIT) was named 2017 Airport of the Year by Air Transport World, becoming the first U.S. airport on a list including Hong Kong International, London Heathrow and Singapore Changi. The airport is easy to maneuver and highly dependable. With an on-time performance rate of 87%, it is among the most reliable in the U.S.

Beginning in 2019, Pittsburgh International Airport will embark on a bold \$1.1 billion terminal modernization plan to become an industry-leading facility and incorporating the city's high-tech growth into the terminal. Due to the airport's extra wide runways and thousands of acres of surrounding land, airfield operations will incur minimal disruption during construction. Passengers will experience virtually no impact.

Amazon has the unique opportunity to influence the airport redevelopment plan. We are prepared to offer Amazon designated space within the airport to support its operations. If Amazon selects Pittsburgh for HQ2 while major upgrades are still underway, the company will have the opportunity to design a space suited to its needs, such as a terminal dedicated to shipping logistics or other uses. The airport is already partnering with CMU to utilize the facility as a tech incubator and the airport's modernization plans will accelerate and implement industry best practices in customer service and airline logistics.

## Airport HQ2 Connection

By 2019, Pittsburgh will launch a business-class high-speed transit connection between HQ2, Downtown, and Pittsburgh International Airport. Building on an existing high-speed busway, we will provide a shoulder-running transit options with reliable, traffic-free access to the airport.

## Executive and General Aviation

For executive and general aviation, Allegheny County Airport is only 20 minutes from Downtown and logged more than 50,000 trips last year. Business executives throughout the region use this airport for corporate and private jets in addition to Pittsburgh International. Allegheny County Airport is equipped with two full-service, 24/7 fixed-base operators, a helipad, and an Instrument Landing System for safe operations in virtually all weather conditions.



# INNOVATION CITY

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We have invested in the workforce of the future, and will continue to grow our innovation ecosystem through PGH-AMZN LAB, a new corporate-academic partnership concept. We have transformed our streets into living laboratories, and will continue to innovate alongside Amazon—which will be supported by a new Living Lab concierge service—to establish Pittsburgh as an Innovation City.

## **PGH-AMZN LAB: A NEW ACADEMIC- CORPORATE PARTNERSHIP**

**Our research universities drive regional growth to solve your biggest problems and suggest new pathways.**

**T**he LAB, based on CMU's campus, will create an opportunity for Amazon to explore new ideas and shape Pittsburgh as an Innovation City. The LAB will set the standard for interdisciplinary, multi-tier, collaborative research and development.

This effort builds on the dynamic history of university-corporate partnerships in Pittsburgh. Leading technology companies from around the world, including Google, Uber, Facebook, Bosch, RAND, PWC Tata Consultancy Services, PNC Bank and UPMC have established research facilities adjacent to Pittsburgh's universities in recent years. CMU and Pitt play a central role in Pittsburgh's innovation ecosystem, driving regional and national economic growth, as well as shaping the university's research and academic mission in a beneficial cycle.

We will partner with Amazon to create a custom lab and programming that supports Amazon's goals. Located in the heart of CMU's campus, the LAB will provide immediate proximity to the center of Pittsburgh's burgeoning Oakland Innovation District, an area of 1.7 square miles that accounts for almost 30% of the university research and development activity Pennsylvania.

The universities do not propose to narrow the programs of this initiative, but we have ideas for collaboration. The LAB could focus on moonshot projects, including the prototyping of new technologies, products, services and entertainment. Or, it could create a training and development ecosystem to shape the workforce of Amazon's future, serving as a cornerstone of the Amazon Talent Pipeline program. This training environment could work to foster the Pittsburgh talent already supporting Amazon (over 700 CMU and Pitt hires to date), providing more research opportunities for students to tackle issues of mobility, logistics, delivery, and more.

## Amazon Campus-Connectivity Network

There are 78 colleges and universities within the local Pittsburgh area. While this resource affords employers access to more than 45,000 students graduating each year, it requires a coordinated approach to streamline recruiting for firms requiring access to specific types of talent.

In anticipation of Amazon's arrival, an Amazon Campus-Connectivity Network will be established by CMU and University of Pittsburgh with the goal of providing a one-stop network for access to the resources available at each of the colleges and universities. Meeting in one convenient location in Oakland, this Amazon Campus-Connectivity Network will provide Amazon's recruiting staff with immediate contacts, convenience, efficiency, and effectiveness.

## To support the Amazon Talent Pipeline, the LAB could:

- Increase the size of core undergraduate and graduate programs at CMU, Pitt, and Robert Morris University in computer science, information systems management, statistics and data science, robotics, industrial engineering, supply chain management, and software engineering;
- Create AdvancedCS4All, a coding academy that CMU could launch where established software engineers in an evening curriculum over one year can develop their skills to be experts in the emerging areas of advanced security, machine learning, computer perception, optimization, NLP and algorithms;
- Develop new models for apprenticeship programs in robotics and automation;
- Invest in the Community College of Allegheny County for micro-credentialing, certifications, and associate degrees in robotics, automation, cloud computing, IT, and cybersecurity;
- Launch dynamic student engagement, internship, and co-op programs where students can learn in the Amazon environment, and further Amazon's commitment to sustainability through a collaboration with Chatham University's Falk School of Sustainability at the 388-acre Eden Hall Campus—the world's first fully sustainable campus in higher education.

We welcome your input into how we could structure this opportunity for Amazon.

## LIVING LAB: A CONCIERGE FOR URBAN PARTNERSHIP

**P**ittsburgh's flexible regulatory climate and deep relationships within university and private research partners make us a hub for urban innovation. As Amazon continues to push the boundaries of technologies like UAV package delivery, robotic fulfillment, and more, PGHQ2 is committed



to create a Living Lab concierge service—a team of individuals focused on securing regulatory approvals and other key commitments for industry pilot projects. The Living Lab concierge service will work to rapidly build commitments from government, business partners, and non-profit to support your pilot projects. Prospective pilot hosts will be recruited in advance

by a combination of senior leadership engagement and collaboration with key technical contacts.

**Pittsburgh is already a testbed for 21st century technologies.** We are small enough to get it done, but big enough to matter. Our SmartPGH plan, a finalist for the 2017 Smart Cities prize, lays out an achievable strategy for the City to identify, pilot, and implement smart city technologies—including new ways to deliver wireless technology and broadband, city services, mobility, and sustainable energy. We understand the importance of linking technology with public infrastructure and private business to spur economic development and improve quality of life for all citizens. Since the plan was announced, we have been working with government agencies, leading researchers, and private companies to execute these ideas. We will bring the same collaborative approach to our Amazon partnership in the next chapter of Pittsburgh's reinvention. Amazon can join our living lab, collaborating with our innovators while advancing its pioneering technologies. Our innovations include:

### **Autonomous Vehicles**

- Pittsburgh and CMU are the birthplace of autonomous vehicles, the key technology for last-mile delivery. We have been pioneering the technology for adoption and commercialization for decades, supported in both policy and leadership from the City and State.
- Self-driving cars from Uber, Argo AI, Aurora Innovation, Delphi Ottomatika, and others roam the streets collecting data and ferrying passengers from place to place.

### Smart Signals

- Pittsburgh has installed software called Surtrac, a technology developed at CMU, that allows traffic signals to “talk to each other” to manage congestion in real-time. Surtrac is the world’s first decentralized real-time adaptive traffic signal system powered by artificial intelligence and traffic theory.
- In operation, Surtrac has decreased travel times by 25%, reduced idling time by 40%, decreased vehicle stops by 30–40% and lowered emissions by over 20%. The Surtrac system is active at 50 intersections in Pittsburgh and has secured funding for an additional 150 intersections—a major solution to Amazon’s logistical needs.

### City Services

- Pittsburgh is using RoadBotics, a smartphone app, to better monitor and respond to roadway challenges the City faces. RoadBotics monitors roadways through attaching a smartphone with the app to the dashboard or windshield of a vehicle. The data collected by the phone analyzes roadway conditions such as snowfall, cracks, potholes or debris.

### Broadband

- Amazon can partner with and leverage the technology of OPERA (the Open Pittsburgh Wireless Research Accelerator), a new

initiative to deploy 5G broadband infrastructure. In 2017, the City was shortlisted to receive a \$20 million federal grant for OPERA.

### Sustainability

- The City of Pittsburgh, in partnership with the U.S. Department of Energy, the National Energy Technology Lab, Duquesne Light, and the University of Pittsburgh Center for Energy, is currently developing a 21st century energy infrastructure that calls for the expansion and optimization of district scale energy systems, such as micro-grids, thermal loops, combined heat and power systems and other innovative technologies.

### Healthcare

- Logistics and Informatics Venture (ReLIVE) is a University of Pittsburgh Department of Emergency Medicine project. It that works with government, EMS, and community partners to build citizen response for out-of-hospital cardiac arrest.
- ReLIVE includes deployment of PulsePoint, a system that uses a location-aware smartphone app to rapidly dispatch citizen volunteers to perform CPR and provide early defibrillation for cases of out-of-hospital cardiac arrest, throughout Allegheny County.

### Air Quality

- CMU’s CREATE Lab developed and tested technology that can monitor fine particulates indoors.
- The CREATE Lab and its spinoff company AirViz Inc. partnered with the Carnegie Library of Pittsburgh (CLP) to set up a Pittsburgh Air Quality Empowerment Lending Library. Within a few months, 400 patrons borrowed a Speck air quality monitor for free from their local CLP branch using their library card.

**We invite Amazon to use our city as a living lab to prototype radical ideas that will benefit Pittsburghers and the rest of the world.** As we look to the future, we will work with Amazon to accelerate ideas for solving the pressing infrastructure, equity and sustainability challenges of our time.

# CONCLUSION

Just as Amazon puts its customers first, the people of Pittsburgh and our region are at the center of the forward-looking strategies described in this proposal.



## CONCLUSION

**A**mazon became a global leader due its willingness to take bold, calculated risks and a curiosity to explore new opportunities. Unlike the oversaturated tech ecosystems of Boston, San Francisco, and New York City, Pittsburgh is the next frontier—a place where Amazon can think big and make a lasting positive impact on the community. We have the talent, the space, the infrastructure, and the will to invent and grow with Amazon. Leveraging the strengths of our industries and the collaborative spirit of our regional universities, philanthropies, institutions, and corporate leaders, we are well on our way to building the nation's best Innovation City.

We are already writing the next chapter in Pittsburgh's storied history as an engine of global business, technology and education. We are thrilled by the boldness of Amazon's decision to establish HQ2. It is this kind of bold thinking that built Pittsburgh, and has led to our reinvention as a modern-day Innovation City. Pittsburgh loves a challenge. Come for a visit. We are ready to tell you more. We are ready to welcome you into our story.

Together, Amazon and Pittsburgh will build a **Future. Forged. For All.**

# BROUGHT TO YOU BY...

**Pittsburgh is a city that works together. Our spirit of collaboration has been integral to our success. This effort has been no different, as this proposal has been driven by over 100 organizations helping us share the story of Pittsburgh:**

4moms  
African American Chamber of Commerce of Western PA  
Allegheny County Airport Authority  
AKM Productions  
Allegheny Conference on Community Development  
Allegheny County Department of Economic Development  
The Allegheny County Parks Foundation  
The Allegheny Regional Asset District  
AlphaLab  
AlphaLab Gear  
American Eagle Outfitters  
ANSYS  
Astrobotic  
Aquorn  
Argo AI  
ARIEL Precision Medicine  
Ascender  
Avere  
Blast Point

BNY Mellon of Pennsylvania  
Buchanan, Ingersoll & Rooney PC  
Carnegie Mellon University  
Chatham University  
Chevron Appalachia LLC  
Clarabyte  
Cognowear  
Community College of Allegheny County  
Department of City Planning, City of Pittsburgh  
Department of Community and Economic Development, Commonwealth of Pennsylvania  
Department of Finance, City of Pittsburgh  
Department of Mobility and Infrastructure, City of Pittsburgh  
Dunham reGroup LLC  
Duquesne Light Company  
Duquesne University  
East Palestine Area Chamber of Commerce (Ohio)  
Envision Downtown  
Erie Regional Chamber & Growth Partnership  
EverPower  
Federal Reserve Bank of Cleveland  
Fivesquares Development  
FutureDerm  
Gatesman  
Giant Eagle  
Google  
Greater Pittsburgh Chamber of Commerce  
Gridwise  
HEBI Robotics  
The Heinz Endowments  
Hibersense  
Highmark Health

Hillman Family Foundations  
HR&A Advisors  
Huntington Bank  
IAM Robotics  
International Brotherhood of Electrical Workers Local 5  
Idea Foundry  
InnovatePGH  
Innovation Works  
Jones Day  
Kaarta  
Kextil  
Kraft Heinz  
LaneSpotter  
MAYA, a BCG Company  
Manchester Bidwell Corporation  
Manchester Craftsmen's Guild  
Meter Feeder  
Mitsubishi Electric Power Products, Inc.  
Music Everywhere  
Near Earth Autonomy  
Neighborhood Allies  
Office of the County Executive, Allegheny County  
Office of the Governor, Commonwealth of Pennsylvania  
Office of the Mayor, City of Pittsburgh  
Partner4Work  
The Pennsylvania State University  
People's Natural Gas  
Phipps Conservatory  
Pittsburgh Regional Building Trades Council  
The Pittsburgh Foundation  
The Pittsburgh Parks Conservancy  
Pittsburgh Public Schools  
Pittsburgh Regional Alliance  
Pittsburgh Robotics Network

Pittsburgh Symphony Orchestra  
Pittsburgh Technology Council  
The PNC Financial Services Group  
PNC Grow Up Great  
Point Park University  
Port Authority of Allegheny County  
Port of Pittsburgh Commission  
PPG  
Public Parking Authority of Pittsburgh  
Qlicket  
Rapid TPC  
Redevelopment Authority of Allegheny County  
Reed Smith, LLP  
Richard King Mellon Foundation  
Robert Morris University  
Seegrid  
Simcoach Games  
The Sports & Exhibition Authority of Pittsburgh and Allegheny County  
Swat Capital  
TravelWits  
Uber Technologies Inc.  
University of Pittsburgh  
UPMC  
UrbanInnovation21  
Urban League of Greater Pittsburgh  
Urban Redevelopment Authority of Pittsburgh  
Vibrant Pittsburgh  
WattLearn  
West Virginia High Technology Foundation  
West Virginia University  
Wombat  
Word of Mouth Communities, LLC