

Primed and Ready?

Transportation Challenges Facing Four Cities Bidding for Amazon's Second Headquarters



TRI-STATE TRANSPORTATION CAMPAIGN



Introduction

238 cities across North America have submitted bids to be the home location of Amazon's "HQ2," a new headquarters that Amazon promises will be home to 50,000 highly-paid employees and billions of dollars in local investment¹. Cities raced to offer incentives and promotional events, from Newark's record-breaking \$7 billion package of tax cuts to New York City's Amazon-themed light display on major landmarks the day the city's bid was submitted.

Amazon's new headquarters offers the winning city economic growth, a massive influx of well-paid employees, a growing residential tax base—and a cautionary tale. Each bidder should take heed: while it has generated as much as \$38 billion toward the local economy², Amazon has had a profound effect on the city of Seattle, increasing rents and housing costs (Seattle is now in the top ten most expensive metropolitan regions in the United States), increasing gridlock on city streets³, reshaping the skyline, and dramatically altering the commuting patterns of Seattle residents⁴. In many ways, the fundamental nature of this major American city has been reshaped by its largest employer, and that sort of change is likely in all but the very largest bidding cities as well.

Transportation in Seattle has been no stranger to the strain of rapid growth; King County Metro reports that many of the busiest routes in the system serve Amazon's headquarters⁵, and during seasonal hiring, King County Metro has been forced to expand service to accommodate the influx of riders⁶. Meanwhile, Sound Transit, which operates Seattle's rail services, reports that over 31,000 Amazon workers used its system in August 2017 alone⁷.

The lesson is clear: when it comes to public transit, cities will need to scale up if they are to meet Amazon's bid requirements and handle the influx of new commuters. In fact, among the variables candidate cities will be judged on, Amazon has indicated proximity to mass transit and location of an on-site transit hub as key priorities.

This analysis examines the transportation opportunities and challenges of four leading cities in the tri-state region: Hartford, Newark, New York City, and Philadelphia/Camden. In each, we find that their transit networks can provide much of what Amazon seeks in a host city for HQ2—but that funding shortfalls, delayed expansion projects, and gridlock threaten the viability of their bids. With elected leaders and transit agency staff dedicated to expanding and improving service, each city still presents a strong case to be a leading contender for Amazon's HQ2.

New York City

New York City's bid for Amazon's second headquarters comprises four sites in Manhattan, Queens, and Brooklyn. New York City's bid is supported by Mayor Bill de Blasio, over 70 elected officials representing city residents, and multiple major real estate developers.

"The case for New York City is simple: we are the global capital of commerce, culture and innovation," argued Mayor de Blasio in a letter to Amazon CEO Jeff Bezos accompanying the city's bid. "No city has a greater diversity of talent, of industries, and of collisions that fuel great ideas and companies."

Indeed, New York City scores highly on many¹ rankings² of potential host cities, and New York's bid offers Amazon ample office space for HQ2, including several parcels in Manhattan, Queens, and Brooklyn: Midtown West, including the new Hudson Yards development; Long Island City; the Brooklyn Tech Triangle encompassing the neighborhoods of DUMBO, Brooklyn Navy Yard, and Downtown Brooklyn; and the World Trade Center complex. Each site chosen satisfies Amazon's core requirement for 500,000 square feet of immediately available real estate and up to 8 million square feet of expansion potential.

New York City's four sites each present a strong case to the tech giant. Recognizing New York's importance, Amazon already counts seven separate facilities among its current New York footprint, from a distribution center on Staten Island to office space in Midtown Manhattan. While real estate is significantly more expensive in New York when compared to the other cities in the tri-state region, rents in some locations, like Long Island City (LIC), are as low as \$30 per square foot³.

Virtually all of these parcels fulfill Amazon's stated desire to be located on a transit station and near transit hubs: LIC offers LIRR access, ferry service, connection to multiple subway lines, and future connection to the Brooklyn-Queens Connector streetcar (BQX); Penn Station and Hudson Yards offer access to several subway lines, the LIRR, New Jersey Transit, and Amtrak; the Brooklyn Tech Triangle offers LIRR access, a dozen subway lines, relatively rapid access to JFK, and future service by the BQX; Lower Manhattan similarly offers access to a dozen subway lines, ferry service, and PATH trains into New Jersey.

New York City is well-served by three major international airports, one of the largest port complexes in the nation, and significant heavy rail infrastructure for freight movement. Both JFK and EWR offer one or two-seat rides from major transit hubs and are within the 45-minute boundary described by Amazon in its request for proposals.

Beyond opportunities to site a new headquarters on large parcels well-served by transit, New York is already a major technology hub, with the advent of the Cornell Tech Campus on Roosevelt Island joining top-flight schools like NYU and Columbia. Additionally, a number of technology companies are headquartered or hold major offices in New York City; already, the five boroughs are home to 350,000 tech sector workers.

Beyond that, New York City is a cultural hub, with multiple world-class museums, sports teams, performance venues, art galleries, and outdoor space that rivals any city around the globe. In fact, city officials believe the affirmative case for New York City is so strong that, at this juncture, they have offered no subsidies or tax giveaways to the tech giant⁴.

Transportation in the New York City Metropolitan Area

With Census American Community Survey data revealing that 41% of New Yorkers commute via mass transit, the city presents what appears to be, at first glance, a strong case for robust transportation opportunities for future Amazon employees. A deeper look, however, reveals significant challenges for public transit options. Those challenges present real drawbacks to the city's bid—but recent moves by elected officials to find solutions to public transit shortfalls offer a way forward that will strengthen the city's bid for HQ2.

New York City's greatest challenge comes in the form of underfunding of its mass transit systems. Currently, the MTA lacks funding to perform badly-needed maintenance and upgrades to its subway system, and the effects are readily apparent to commuters: New York City's well-publicized "summer of hell" included multiple derailments, frequent rush-hour breakdowns, and signal failures that snarled dozens of lines and left hundreds of thousands of commuters stranded underground. The MTA's data reveals that delays have increased from roughly 20,000 a month in 2012 to over 67,000 by May 2017. In a recent analysis, the city's Independent Budget Office



Midtown Manhattan from the Roosevelt Island Tram | Photo credit: Nick Sifuentes

(IBO) estimates that "There were 34,900 passenger hours of delay during the morning rush on a typical weekday in May of this year, a 45.3 percent increase since 2012. . . . IBO calculated this lost time is worth as much as \$280 million a year.⁵⁷ Meanwhile, surface-level transit faces similar inattention: thanks to increasing congestion on New York City streets, bus speeds have plummeted 15% citywide between 2002-2015; as a result, ridership has similarly declined 16% since 2002⁶.

In fact, a Moody's Analytics analysis ranks New York City's transportation below many rival cities⁷, including transit-rich metropolises like Boston, Chicago, San Francisco, and Seattle—but also behind Hartford, Salt Lake City, and Buffalo. With some of the longest car and public transit commute times in the nation, NYC's transportation challenges threaten to undermine the city's bid for HQ2, and without solving the significant challenges the city's mass transit infrastructure faces, the influx of 50,000 additional commuters will place additional strain on an already overtaxed, underfunded system.

Fortunately for proponents of a New York City bid for Amazon's HQ2, the governor's office is moving forward with plans to produce new revenue for the MTA, having signaled support for congestion pricing as a dedicated source of funding for subways, buses, and rail. Congestion pricing proposals like Move New York could raise as much as \$1.5 billion annually, much of which should be dedicated to improving public transit. With Amazon selecting the winning city in 2018, the governor should propose congestion pricing in January, when he reveals his executive budget, in order to reassure the tech giant that transit fixes are on the way.

Meanwhile, some commentators have raised concerns that the city has so far declined to offer any tax incentives. In lieu of direct incentives, which reduce revenues necessary for city operations, the city should instead prioritize funding significant improvements to surface-level transit, including a redesigned bus network with dedicated bus lanes serving places where Amazon workers would live, shop, and recreate. Improvements in bus service in lieu of tax breaks would benefit future Amazon employees without diverting needed tax revenues from other city priorities. Importantly, bus service improvements can be completed in the near term, before the opening of Amazon's new headquarters; in conjunction with billions in revenue from congestion pricing, New York's mass transit system, while currently under strain, would be poised to meet the needs of residents and businesses in the decades to come.

Hartford

Hartford is Connecticut's state capital and the principal urban area of Greater Hartford, home to over 1.2 million residents. Long known as "The Insurance Capital of the World" and "America's Filing Cabinet," Greater Hartford is home to insurance giants like Aetna, Cigna, The Hartford, The Phoenix Companies, Travelers, and United Healthcare.

Amazon and Greater Hartford are already well-acquainted with one another. There are two existing Amazon facilities in the state: a sorting facility in Wallingford 20 miles south of Hartford, and a fulfillment center in Windsor, 10 miles north of Hartford. And another is on the way: earlier this year, Amazon unveiled a plan to build another fulfillment center in North Haven, 30 miles south of Hartford. This new addition will bring the total number of Amazon employees in Connecticut up to 3,800¹.

One could make any number of arguments to support locating Amazon's second headquarters in Hartford, but perhaps the strongest case to be made would focus on the region's human capital. Greater Hartford is ranked 22nd-most educated among the nation's 150 largest metro areas in the nation², and Connecticut as a whole is the fourth-most educated state³. And according to data from Moody's Analytics, the Greater Hartford area has an oversupply of people with degrees in engineering, math and computer science.

Transportation in Greater Hartford

Despite its advantages, Hartford faces a number of challenges specifically related to transportation. With 35.7 percent of households not owning cars, Hartford is the tenth-least car-dependent city in the country⁴, but the metro area is heavily car dependent: 81 percent of commuters in the region drive alone to work⁵, higher than the percent of drive-alone commuters in the state as a whole (78.7 percent), and in the nation (76.4 percent)⁶. The Interstate 84 viaduct (also known as the Aetna Viaduct, due to its close proximity to Aetna's headquarters) in Hartford is the single busiest stretch of highway in a state whose urban interstates are ranked eighth-most congested in the nation, and the third-busiest in terms of daily travel per lane mile⁷. The viaduct was named among the Congress for the New Urbanism's list of "Freeways Without Futures" in 2014⁸. The Connecticut Department of Transportation spent roughly \$60 million to maintain this structurally deficient viaduct between 2005 and 2012, and will have spent an estimated \$80 million more between 2013 and when an at-grade replacement highway is built⁹.

While the state continues to spend money to keep the I-84 Viaduct standing, they have also directed hundreds of millions of dollars toward widening Interstate 84, including \$330 million for a 2.7-mile stretch in Waterbury¹⁰, and \$715 million to widen an eight-mile section in Danbury¹¹.

It would be virtually impossible to expect Connecticut to be able to accommodate an additional 50,000 workers if this status quo were to continue. But Hartford, with its new bus rapid transit corridor, forthcoming commuter rail line, and a revamped set of zoning and parking regulations, may be perfectly situated for a huge influx of economic development.

Bus Rapid Transit

The 9.4-mile CTfastrak bus rapid transit corridor, a dedicated busway between downtown Hartford and New Britain, Connecticut, opened in 2015; ridership has outpaced projections. Plans to expand CTfastrak service beyond this corridor, however, have been delayed due to funding issues. If Amazon's HQ2 were to be located in Hartford, the state would need to act quickly to expand bus rapid transit options through downtown Hartford and beyond to better connect residents in nearby suburbs to downtown.

Commuter Rail

In May of 2018 the Hartford Line, a new commuter rail service between New Haven, Hartford and Springfield (Mass.) will open for business, with 11 round trips per day between New Haven and Hartford and six between Hartford and Springfield (in addition to six existing Amtrak trains)¹². The introduction of commuter rail on this corridor is expected to generate 1.26 million rail trips each year by 2030, along with transit-oriented development near stations in the corridor¹³.



CTfastrak bus in downtown Hartford | Photo credit: Joseph Cutrufo

Downtown Zoning Overhaul

In 2016, the city adopted a new form-based code known as ZoneHartford, its first major zoning overhaul since 1969, marking a shift in the city's priorities away from driving and toward more walkable development¹⁴. ZoneHartford reduces parking minimums for new developments near transit and in the downtown area. This is a welcome change in a city where the supply of surface parking downtown has tripled in the last 50 years¹⁵. Parcels in the downtown area that are used for surface parking could one day be redeveloped into apartments and condos for Amazon employees who would rather walk or bike to the office.

Hartford needs to capitalize on these new transit services and the shift away from building more parking downtown. And so should surrounding communities. Amazon can't thrive in central Connecticut if driving remains the dominant mode into and out of the urban core. But with new investments in regional transit, there's reason to expect more residential development in downtown Hartford and new transit-oriented development near CTfastrak BRT stations and Hartford Line rail stations. Given the primacy Amazon has placed on bids which include robust mass transit, Hartford's investments in commuter rail and BRT—if expanded upon—make the city a real competitor for HQ2.

Newark

The City of Newark's bid for Amazon's second headquarters made a splash when it was announced on October 16th, backed as it was by \$7 billion in tax breaks and the support of New Jersey Governor Chris Chrisite, U.S. Senator (D-NJ) and former Mayor of Newark Cory Booker, and current Mayor of Newark Ras Baraka.

"We have exactly what Amazon is looking for, in terms of expanding their company in a city that will help them grow and where it would have real social impact," said Mayor Ras J. Baraka. "Newark is an opportunity to make a real statement, about what they're trying to accomplish in the United States in the age of Trump.¹⁷

After working with New Jersey's Economic Development Authority (EDA) and the City of Newark, the proposal would offset state and city taxes, including an incentive through the EDA that could reach \$5 billion over 10 years. The remainder of the tax breaks would come from a \$1 billion city property tax abatement and a wage tax waiver of \$1 billion for employees. This is the largest tax incentive plan put forth by any of the cities making the bid and would be largest tax incentive plan ever offered in the state of New Jersey through the Economic Development Authority, which also estimates an economic benefit of over \$9 billion to the State of New Jersey.

New Jersey is already has Amazon Distribution Centers with over 13,000 Amazon employees. It also fits the bill for Amazon's needs: Newark in the most populous city in New Jersey and Essex County, with a population in excess of 280,000. The city has the ability to immediately offer 33 Washington St. and the Gateway Center facility near Newark Penn Station, with future development that could include 7.5 million square feet at the Mulberry Commons, South of Market, Lotus Riverfront, or vacant land. Newark can provide fast and affordable internet and broadband service given its proximity to the East Coast fiber-optic cable².

In terms of transportation, it is home to Newark Liberty International Airport, which is the second-busiest airport in the New York region and the 15th-busiest in the United States. The Port Newark Marine Terminal is the principal container ship facility (with access to freight rail and trucks) for goods entering and leaving the New York metropolitan area and the northeast. It is surrounded by major roadways such as the New Jersey Turnpike and Garden State Parkway. It also has robust public transportation which includes NJT Bus, rail (two major rail hubs—Newark Penn Station and Newark Broad Street), Amtrak, light rail, PATH and private bus carriers.

Transportation in Northern New Jersey

Newark's status as a hub for New Jersey Transit would make it ideally situated for Amazon's mass transit requirements—but unfortunately, chronic underfunding and operations shortfalls present a significant challenge to the viability of NJ Transit service should a significant share of Amazon's 50,000 employees take public transit. The Christie Administration did nothing to shore up public transportation in the state: with transit ridership increasing, Governor Christie decreased capital investment, including canceling the Access to the Region's Core project, cutting the state subsidy to NJ Transit by as much as 90%, increasing fares, and using funding raids to fill budget gaps³. In addition, the agency is plagued with aging infrastructure that causes massive delays and currently suffers from low employee morale and a mass exodus of talent⁴.

NJTransit's greatest challenge comes in the form of the lack of dedicated funding for transit operations, leading to operating budget shortfalls. As a result, NJ Transit relies heavily on customer fares for a majority of its operating revenue (51% of its operating revenue in 2017⁵)—and when that falls short, the agency is then forced to make hefty capital-to-operating-budget transfers, cutting into the capital budget. This unstable funding footing stifles the agency in terms of the ability to engage in long-term planning and meet the demands of a growing ridership.

Also in flux is funding for the Gateway Program—now approaching \$30 billion, far more than when originally vetoed by Gov. Christie—which would create much needed increased capacity under the Hudson, the linchpin of transportation infrastructure in the Northeast Corridor. This program is not only needed to handle the expected increase in ridership but also to replace the aging existing tunnel infrastructure. Should one of the tunnels fail before the new set is complete, roughly 72,000 daily commuters will be stranded, many of whom may opt to drive, further exacerbating congestion and air pollution in our region. Despite having the backing of elected officials in both New Jersey and New York, President Trump has yet to affirm federal funding for the project.



Downtown Newark | Photo credit: Axel Drainville/Flilckr

The irony of Governor Christie's championing of Newark's bid is that the vast majority of the dysfunction in transit that could doom the city's bid is due to his lack of leadership on transit. Without solving the significant challenges the city's mass transit infrastructure faces, the influx of 50,000 additional commuters will place additional strain on an already overtaxed, underfunded system. Fortunately, Governor Christie is in the final months of his administration. Both candidates to replace him have promised to prioritize NJ Transit should they be elected⁶, suggesting that a new administration will ensure New Jersey's public transportation crisis will finally get the attention it deserves. New Jersey's new governor will have to move quickly to ensure transit's needs are met in order to bring growth—Amazon or otherwise—to New Jersey. Amazon has every reason to be confident that the state's new governor will rise to the challenge.

Philadelphia/Camden

Philadelphia and Camden have submitted separate proposals for Amazon's second headquarters. Although the two proposals highlight their unique respective strengths, the metropolitan region presents a strong case on either side of the Delaware River. Both cities see the chance to capture momentum from other large corporations relocating to their city. Although Philadelphia has been more prosperous economically of late than Camden, Camden offers opportunity for easy access to downtown Philadelphia immediately across the Benjamin Franklin Bridge alongside the opportunity to site Amazon on a campus of significant size in Camden.

Philadelphia's pitch frames the city as a reasonably priced, high-population east coast location with existing economic momentum, focusing on corporations that have already chosen the City in order to demonstrate a proven track record. Philadelphia's mayor, Jim Kenney, discusses the well-roundedness of the Philadelphia application: "Philadelphia is in the Goldilocks zone for Amazon. Our location is central on the Northeast corridor, our talent pool is vast, and Philadelphia has all of the amenities Amazon's employees want, at a lower cost than other big cities." Philadelphia has also been ranked the highest east coast city by Moody Analytics, primarily due to its low cost of living and geography¹.

Camden's proposal is a chance to lift up an economically distressed city by offering ample opportunity for affordable land that can be used creatively by Amazon—while still maintaining a central regional urban location. Amazon would not be the only major corporation calling Camden home: recently, American Water and Subaru of America chose the city for large corporate campuses. Camden Mayor Dana L. Redd touted those recent businesses in the city's bid process, saying, "I am confident and believe this is the right time for Camden. Camden has done a good job of attracting more than \$2 billion in investment and other forward-thinking industry leaders like Subaru, Holtec and American Water, among others. . . . Our City and region has the assets needed to support Amazon and it would be a tremendous boost for Camden, the state and the entire regional economy."

Both cities have ample land available for the project: Camden can offer 138 acres, primarily waterfront property adjacent to the Benjamin Franklin Bridge connecting to Camden. Philadelphia's bids also incorporate around 700 acres of waterfront property at its three sites (Schuylkill Yards, uCity Square and the Navy Yard). The office space affordability, as well as cost of living for new employees compared to other major east coast cities, makes these bids particularly attractive.

Additionally, the university presence of the University of Pennsylvania, Rutgers University Camden, Temple University, Drexel University, and many others creates a labor pool of workers who would stay in the Philadelphia and Camden area after graduation, but often have difficulty finding attractive employment options. Amazon HQ2 is an opportunity to capture this homegrown talent.

Camden's bid has not been chosen or even acknowledged by Governor Christie, who favors Newark's bid. However, a new governor could realize the potential of New Jersey not just as a connector to New York City, but also as an important state to connect with the Greater Philadelphia region. Pennsylvania governor Tom Wolf, on the other hand, has not endorsed any particular city in Pennsylvania, instead promoting the state as a whole. Pennsylvania's governor has not disclosed the state tax incentives publicly, so it unclear how the Pennsylvania proposals will compare to other more publicly proposed tax breaks.

Transportation in the Camden/Philadelphia Metropolitan Area

Both cities present Amazon with multi-modal communities: the two proposals draw on their connections to the Philadelphia International Airport, Amtrak, RiverLINE light rail, PATCO and SEPTA subways, and NJT and SEPTA buses. Regionally, the active passenger rail network alone spans 447 miles². Additionally, Philadelphia is often named one of the most walkable and bikeable cities in the country^{3, 4}. Due to this mix of transit in this 7.7 mile Greater Center City Philadelphia area, 14% commute to work by bus, 9% rail, 25% walk and 6% bike⁵.

That being said, New Jersey Transit's funding problems present a major challenge throughout South Jersey, most notably in the building delays on the Glassboro-Camden line. This proposed 18-mile light rail line, which would include 14 stops that would extend south from Camden City to Glassboro, was first introduced in 2009. The project has been on hold since 2014 because the Federal Transit Administration will not proceed without a chosen owner or operator. The project, however, gained momentum when it was included in the 2016 authorization of the Transportation Trust Fund, as well as an additional \$5 million in funding from the Delaware Valley Regional Planning Commission. This funding will be used to complete the Environmental Impact Study and move the project



Philadelphia and the Ben Franklin Bridge from Camden | Image: Tyler Sprague/Flickr

forward. When built, the Glassboro-Camden line will allow new communities to access transit, much as the RiverLINE has done in the corridor between Camden and Trenton since opening in 2004.

New Jersey Transit's funding problems again rear their head in the schedule for its Southern Bus Division, which is infamous for infrequent service and long routes. Consequently, the services has much lower ridership than the rest of NJ Transit's systems as well as the ridership of SEPTA in Philadelphia.

Fortunately, there are likely solutions to the challenges transit faces in the Philadelphia/Camden metropolitan area. Improvements to the Walter Rand Transportation Center would be a potential place to start: the transportation center is already in the midst of a TCDI grant for a transit oriented development redesign. Alongside that, New Jersey Transit should increase frequency and consolidate local stops in order to increase ridership in South Jersey. Currently, only 1% of transit trips into Greater Center City Philadelphia utilize New Jersey Transit bus, and 5% travel by PATCO⁶.

Aside from New Jersey Transit fixes, integration between transit systems is essential for the regional transportation system. SEPTA Key and PATCO plan to integrate their fare systems soon (a price is already included in the SEPTA fare schedule approved in May 2017), but New Jersey Transit should consider integrating as soon as possible on both the bus service and the RiverLINE. New Jersey Transit could also integrate its system more fluidly with SEPTA by including more stop locations within Philadelphia outside of the core downtown, including the Navy Yard or University City, the two Amazon site proposal locations in Philadelphia.

In addition to ample mass transit options, the Philadelphia and Camden area is particularly unique for its extensive bicycle and pedestrian network. In addition to elaborate networks of proposed bicycle lanes in both Camden and Philadelphia, the area boasts an planned network of 800-mile multi-use Circuit Trails network in its nine-county region, with hundreds of miles already built. These trail facilities primarily highlight key waterways such as those chosen for the new headquarters and provide safe, ADA-accessible off-road access to residents and visitors across the region.

The region is also capable of transformative federal grants such as those created with funding from Transportation Investment Generating Economic Recovery (TIGER). TIGER, along with other state and federal grants, jumpstarted major transportation projects in the region, such as the Circuit Trails. With additional leverage from state funding, as well as private investment from large companies such as Amazon, the region only has room to grow.

Notes

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