

Where should Amazon build HQ2? We let the data decide

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In-depth Amazon coverage from the tech giant's hometown, including e-commerce, AWS, Amazon Prime, Alexa, logistics, devices, and more.



A panoramic view of Toronto's waterfront. (Bigstock Photo)

In the days since Amazon's big HQ2 announcement last week (<https://www.geekwire.com/2017/amazon-build-second-hq-outside-seattle-seeks-proposals-cities-5b-campus-50k-jobs/>) there has been plenty of speculation about where Amazon should locate its "full equal" second headquarters, including right here on GeekWire (<https://www.geekwire.com/2017/six-cities-amazon-consider-second-headquarters/>). Rather than add another subjective opinion to the mix, let's dig through some (theoretically) objective data to see if we can get a quantitative idea of which metro area Amazon is most likely to choose.

Here are the four main criteria that Amazon sets out in their HQ2 RFP (https://images-na.ssl-images-amazon.com/images/G/01/Anything/test/images/usa/RFP_3_V516043504_.pdf):

- Metropolitan areas with more than one million people
- A stable and business-friendly environment
- Urban or suburban locations with the potential to attract and retain strong technical talent
- Communities that think big and creatively when considering locations and real estate options

Starting with population, the easiest one to quantify, we begin our search with a list of 59 North American metro areas, including six in Canada.

For a "stable and business-friendly environment" we will assume that business taxes are a reasonable proxy. We grabbed state and province-level rankings for the business tax climate in each metro area.

The "potential to attract and retain strong technical talent" could be reasonably assumed to be highly related to education level, so we put together data on what percent of the population in each metro area has obtained a university degree. We also used CBRE's "Tech Talent" score for the metro areas that had it available.

The last criteria about thinking "big and creatively" is basically impossible to objectively measure. So instead, we also added home prices and transit scores into the mix, both of which will certainly affect the potential quality of life for future employees of HQ2.

For each metric, we ranked every metro area (1-59), where lower rankings are better. Then we averaged each metro area's rankings across the five categories to come up with an overall ranking.

After crunching the numbers, here are the top 10 metro areas for Amazon's HQ2:

1. Toronto
2. Ottawa, Ont.
3. Boston
4. Philadelphia
5. Chicago
6. Atlanta
7. Washington, D.C.
8. Charlotte, N.C.
9. Montréal
10. Vancouver, B.C.

Most of the top metro areas ranked especially well in education, tech talent, taxes, and transit. The biggest drag for most of the top 10 was housing prices, with Toronto, Ottawa, Boston, Washington, and Vancouver all falling in the bottom 30 percent of the home price rankings.

The Seattle metro area actually ranked No. 2, but we excluded it from the top 10 above, since it seems clear that Amazon is looking to geographically diversify. Canada makes a strong showing, taking four of the top 10 spots. Four of John Cook's top six (<https://www.geekwire.com/2017/six-cities-amazon-consider-second-headquarters/>) (Toronto, Boston, Chicago, and Atlanta) are also in the top six in our data-based rankings. Denver, which has come up a lot and was the top pick by the New York Times (<https://www.nytimes.com/interactive/2017/09/09/upshot/where-should-amazon-new-headquarters-be.html>), fell just outside of the top 10, coming in at No. 11.

For comparison, here are the metro areas with at least 1 million people that fell on the opposite end of the spectrum. The bottom 10:

50. San Diego
51. San Jose, Calif.
52. New Orleans
53. Oklahoma City
54. Providence, R.I.
55. Louisville, Ky.
56. Birmingham, Ala.
57. Virginia Beach, Va.
58. Sacramento, Calif.
59. Riverside, Calif.

It doesn't look like Amazon will be following the Sonics to Oklahoma City.

The full table below shows each metro area along with their:

- ??? - population in millions, based on US Census Bureau via Wikipedia (https://en.wikipedia.org/wiki/List_of_Metropolitan_Statistical_Areas)
- ? - education rank, based on university degree attainment percentages from Brookings Metropolitan Policy Program via New York Times (<http://www.nytimes.com/interactive/2012/05/31/us/education-in-metro-areas.html?mcubz=3>) and Statistics Canada (<http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-012-x/99-012-x2011001-eng.pdf>)
- ? - tech talent rank, from CBRE (<https://www.cbre.us/research-and-reports/Scoring-Tech-Talent-2017>)

- ? – state/province business tax rankings from Tax Foundation (<https://taxfoundation.org/publications/state-business-tax-climate-index/>) and The Conference Board of Canada (http://www.conferenceboard.ca/press/newsrelease/16-05-02/quebec_has_highest_provincial_business_and_personal_tax_burden_among_all_canadian_provinces.aspx)
- ? – home price rank, based on home price data from National Association of Realtors (<https://www.nar.realtor/topics/metropolitan-median-area-prices-and-affordability>) and Canadian Real Estate Association (<http://creastats.crea.ca/natl/index.html>)
- ? – transit rank, based on TransitScores from WalkScore (<https://www.walkscore.com/transit-score-methodology.shtml>)
- ? – **overall average rank**, the average of each metro area's rankings in the five categories, lower is better

Search:

Metro Area							
Toronto, ON, Canada	5.93	11	6	9	56	3	17.0
Seattle-Tacoma-Bellevue, WA	3.80	10	2	17	53	13	19.0
Ottawa-Gatineau, ON, Canada	1.32	8		9	41	19	19.3
Boston-Cambridge-Newton, MA-NH	4.79	4	9	27	52	5	19.4
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6.07	20	20	24	25	8	19.4
Chicago-Naperville-Elgin, IL-IN-WI	9.51	17	13	23	35	9	19.4
Atlanta-Sandy Springs-Roswell, GA	5.79	16	5	36	16	25	19.6
Washington-Arlington-Alexandria, DC-VA-MD-WV	6.13	1	4	37.5	51	7	20.1
Charlotte-Concord-Gastonia, NC-SC	2.47	25	23	11	22		20.3
Montréal, QC, Canada	4.10	32		10	36	4	20.5
Vancouver, BC, Canada	2.46	18	14	8	57	6	20.6
Denver-Aurora-Lakewood, CO	2.85	7	12	16	50	21	21.2
Pittsburgh, PA	2.34	37	27	24	5	14	21.4
Austin-Round Rock, TX	2.06	6	8	14	43	38	21.8
Raleigh, NC	1.30	5	7	11	38	49	22.0
St. Louis, MO-IL	2.81	33	32	15	8	23	22.2
San Francisco-Oakland-Hayward, CA	4.68	3	1	48	58	2	22.4
Portland-Vancouver-Hillsboro, OR-WA	2.42	21	18	10	48	16	22.6
New York-Newark-Jersey City, NY-NJ-PA	20.15	12	3	49	49	1	22.8
Baltimore-Columbia-Towson, MD	2.80	13	11	42	37	11	22.8
Calgary, AB, Canada	1.39	14		3	47	29	23.3
Minneapolis-St. Paul-Bloomington, MN-WI	3.55	9	16	46	34	12	23.4
Detroit-Warren-Dearborn, MI	4.30	47	19	12	9	32	23.8
Kansas City, MO-KS	2.10	24	26	15	14	45	24.8
Indianapolis-Carmel-Anderson, IN	2.00	30	30	8	10	48	25.2
Grand Rapids-Wyoming, MI	1.05	52		12	12		25.3
Memphis, TN-MS-AR	1.34	57		13	7		25.7
Rochester, NY	1.08	22	31	49	1	26	25.8
Tucson, AZ	1.02	31		21	18	37	26.8
Salt Lake City, UT	1.19	38	21	9	42	27	27.4

Metro Area							
Buffalo-Cheektowaga-Niagara Falls, NY	1.13	42		49	2	17	27.5
Dallas-Fort Worth-Arlington, TX	7.23	28	10	37	33	31	27.8
Houston-The Woodlands-Sugar Land, TX	6.77	41	28	14	23	34	28.0
Miami-Fort Lauderdale-West Palm Beach, FL	6.07	43	42	4	44	10	28.6
Orlando-Kissimmee-Sanford, FL	2.44	44	29	4	27	39	28.6
Tampa-St. Petersburg-Clearwater, FL	3.03	53	24	4	19	44	28.8
Hartford-West Hartford-East Hartford, CT	1.21	15	34	43	24		29.0
Milwaukee-Waukesha-West Allis, WI	1.57	26	35	39	28	18	29.2
Jacksonville, FL	1.48	49	43	4	21		29.3
Columbus, OH	2.04	23	25	45	13	42	29.6
Cincinnati, OH-KY-IN	2.17	36	36	45	6	28	30.2
Edmonton, AB, Canada	1.32	54		3	40	24	30.3
Cleveland-Elyria, OH	2.06	45	39	45	3	22	30.8
Phoenix-Mesa-Scottsdale, AZ	4.66	48	15	21	29	41	30.8
Nashville-Davidson-Murfreesboro-Franklin, TN	1.87	34	37	13	30	50	32.8
Richmond, VA	1.28	27	40	33	32		33.0
San Antonio-New Braunfels, TX	2.43	56	41	14	20	35	33.2
Las Vegas-Henderson-Paradise, NV	2.16	58		5	31	40	33.5
Los Angeles-Long Beach-Anaheim, CA	13.31	29	22	48	54	15	33.6
San Diego-Carlsbad, CA	3.32	19	17	48	55	33	34.4
San Jose-Sunnyvale-Santa Clara, CA	1.98	2		48	59	30	34.8
New Orleans-Metairie, LA	1.27	50		41	15		35.3
Oklahoma City, OK	1.37	46	44	31	4	52	35.4
Providence-Warwick, RI-MA	1.61	39		44	39	20	35.5
Louisville/Jefferson County, KY-IN	1.28	55		34	11	46	36.5
Birmingham-Hoover, AL	1.15	51		32	17	47	36.8
Virginia Beach-Norfolk-Newport News, VA-NC	1.73	40	38	33	26	51	37.6
Sacramento-Roseville-Arden-Arcade, CA	2.30	35	33	48	45	36	39.4
Riverside-San Bernardino-Ontario, CA	4.53	59		48	46	43	49.0

You can download the full data set in Excel format here (<https://cdn.geekwire.com/wp-content/uploads/2017/09/GeekWire-Amazon-HQ2-Metro-Area-Comparison-by-Tim-Ellis.xlsx>).

More: Amazon HQ2 revealed (<https://www.geekwire.com/special-coverage/amazon-build-second-hq-north-america/>)