

Estimating Future Housing Demand in Southern Ontario's Regions & Counties, 2021 to 2041

by ApartmentResearch.ca¹

Introduction

Ontario's developers, builders, and lenders have been building as much new housing as they can over the past decade or so, but no matter how much they build it never seems to be enough to meet demand. How much demand exists out there? How much demand will exist in the future? The goal of this study is to try to answer these questions by using population projections and household data to calculate the estimated total future demand for housing in southern Ontario.

Data Sources

This study uses two types of publically available data from government sources: population projections and average household sizes. These data points and their sources are explained below. Note that the data used in this study was obtained directly from these government sources and ApartmentResearch.ca accepts no responsibility for any errors or inaccuracies in the data.

Population Projections were obtained from the Ontario ministry of finance which prepares projections of total population for each of Ontario's regional municipalities and counties for each Census year (every five years) from 2021 onwards. These are updated annually². The ministry's projections are based on three different demographic/immigration scenarios; this study uses projections from the ministry's so-called "reference" scenario which is a middle-of-the-road scenario, neither conservative nor aggressive. More information can be found via the ministry's website: <https://www.ontario.ca/page/ministry-finance>

Average Household Sizes were obtained from the 2016 Census which is conducted by Statistics Canada every five years (the next Census will be conducted in May 2021 and results will be published starting several months later). Average household size is a measure of the average number of persons living in a single household (in the Census one household lives in one dwelling unit). More information can be found via Statistic Canada's website: <https://www.statcan.gc.ca/>

This study uses population projections and household data for southern Ontario's 38 regional municipalities and counties instead of cities and towns because Ontario's Ministry of Finance, the main source for population projections, prepares projections for regions and counties only³. Although many of Ontario's larger cities prepare their own population estimates (for periods between Census years), including their own projections, the author thinks the more geographically focused these are the less reliable they are likely to be; the author therefore thinks it preferable to stick with macro-level projections and larger geographies when estimating demand. Additionally, regions and counties have the advantage of (nearly always) combining a major city or town with its surrounding rural and semi-rural areas, which means that a city's surrounding catchment area is included.

Methodology

The methodology used in this study is simple, easy to replicate, and can be readily updated as new data and projections become available. In essence, this study applies a range of average household sizes to projected total populations to calculate the number of housing units that will be needed in the future to house projected populations. By subtracting the future number of housing units that will be needed from the current (existing) number of housing units, this study calculates the estimated number of new housing units which will need to be added to today's housing supply to meet tomorrow's population growth.

The following steps are needed to implement this methodology:

1. Determine total population, total households, and average household size for the most recent Census year (2016). These data points are taken from Statistic Canada's 2016 Census. Note that average household size is calculated by dividing total population by total households.
2. Determine projected total populations for future Census years 2021, 2031, and 2041 (this study passes over Census years 2026 and 2036 to keep data tables as simple as possible and to reflect the macro-level nature of population projections). These projections are taken from the Ontario Ministry of Finance estimates.
3. Apply the average household size for 2016 to projected populations to calculate the total number of households for future Census years. The results of this calculation are used as a baseline only since historical Census data shows that average household sizes can change over time (see #4 below).

¹ ApartmentResearch.ca is a research-focused website serving Ontario's rental housing industry (contact@apartmentresearch.ca).

² Although the ministry's projections are updated annually, they are based on the most recent Census (2016) and interim population estimates that Statistics Canada publishes between each Census.

³ Regions and counties in northern Ontario have not been included in this study.

4. Apply hypothetical average household sizes +0.1 larger and -0.1 smaller than the 2016 average household size to projected populations to calculate the total number of households if average household sizes increase or decrease. Historical Census data shows that average household sizes rarely increase or decrease by amounts greater than 0.1 from Census year to Census year (every five years). Historical Census data also shows that of the 38 regions and counties included in this study, average household sizes decreased in 17 from 2011 to 2016 (Census years), while the remainder saw no change.
5. Subtract total households for 2016 from total households calculated for future Census years (see steps 3 and 4 above) to generate the estimated number of new housing units that will need to be added to the 2016 total to accommodate future households.

The table below illustrates this methodology using data for Brant County⁴.

TABLE 1 – Example of Analysis Methodology for Brant County (example only)

Example Analysis Methodology: Brant County	2016	Future Census Years				
		2021	2026	2031	2036	2041
Projected Total Population	144,500	153,700	161,800	169,400	176,800	184,000
AVG Household Size	2.5	2.5	2.5	2.5	2.5	2.5
Estimated Total Households**	57,800	61,480	64,720	67,760	70,720	73,600
Estimated New Housing Units Needed (beyond 2016)***		3,680	6,920	9,960	12,920	15,800
AVG Household Size: +0.1 per Census Year*	2.5	2.6	2.7	2.8	2.9	3.0
Estimated Total Households**	57,800	59,115	59,926	60,500	60,966	61,333
Estimated New Housing Units Needed (beyond 2016)***		1,315	2,126	2,700	3,166	3,533
AVG Household Size: -0.1 per Census Year*	2.5	2.4	2.3	2.2	2.1	2.0
Estimated Total Households**	57,800	64,042	70,348	77,000	84,190	92,000
Estimated New Housing Units Needed (beyond 2016)***		6,242	12,548	19,200	26,390	34,200

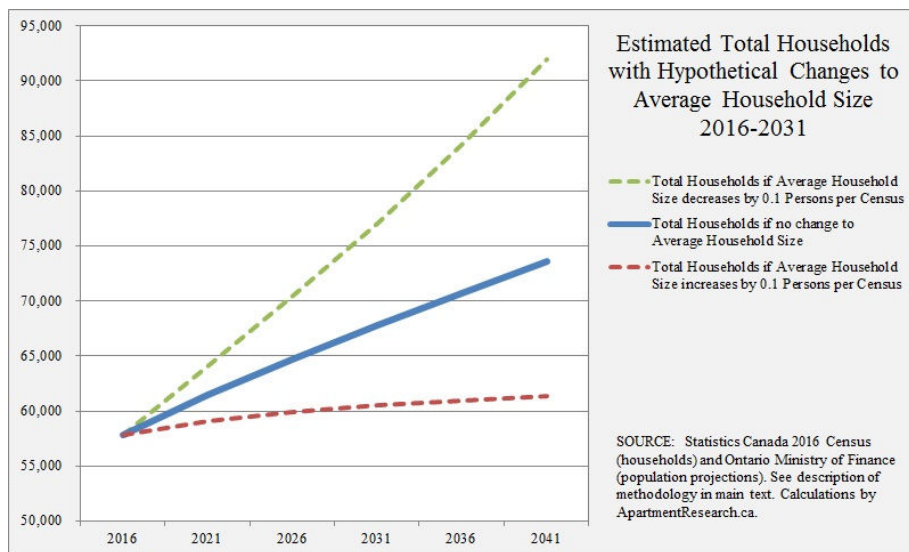
SOURCE: Statistics Canada 2016 Census (households) and Ontario Ministry of Finance (population projections). See description of methodology in main text. Calculations by ApartmentResearch.ca.

* 0.1 has been added or subtracted for each future Census year (every five years) even though not all Census years are included in the analysis.

** Calculated for future Census years by dividing projected total population by average household size.

*** Calculated for future Census years by subtracting estimated future total households from total households for 2016.

The calculations in the table above show that by 2041 Brant County might have 73,600 households (estimated) and might require the addition of 15,800 new housing units (estimated) to accommodate those households (measured from 2016's housing supply). If the county's average household size increase steadily by 0.1 persons every five years then by 2041 the county might have 61,333 households and might need 3,533 new housing units; similarly but oppositely, if average household sizes decrease then by 2041 the county might have 92,000 households and might require 34,200 new housing units. To summarize, these calculations suggest that by 2041 Brant County might need between 3,533 to 34,200 new housing units over and above the total number of housing units reported for 2016 to accommodate projected future population growth. The chart below illustrates the calculations.



⁴ Brant County contains the city of Brantford plus surrounding rural areas.

Analysis/Discussion

The table below shows the estimated number of new housing units needed by 2021, 2031, and 2041 to accommodate projected future populations if average household sizes stay the same in the future. See the Methodology section for a detailed description of calculations with an example. (Note that to aid readability not all calculations have been shown and some future Census years have been omitted.)

TABLE 2 – Population Projections and New Housing Units Needed based on 2016 Average Household Size

Region/County	Cities	Total Population				Households		New Housing Units Needed		
		Current 2016	Projected 2021	2031	2041	AVG Size 2016	Total 2016	AVG Household Size: no change		
								2021	2031	2041
GTA										
Toronto	Toronto	2,822,900	3,182,300	3,597,700	4,029,600	2.4	1,176,208	149,750	322,833	502,792
Durham	Pickering, Ajax, Whitby, Oshawa, Bowmanville, Uxbridge	665,800	712,300	806,500	893,200	2.8	237,786	16,607	50,250	81,214
Halton	Burlington, Oakville, Milton	564,800	609,800	713,100	818,300	2.8	201,714	16,071	52,964	90,536
Peel	Brampton, Mississauga	1,430,600	1,581,900	1,949,400	2,309,000	3.2	447,063	47,281	162,125	274,500
York	Markham, Vaughan, Richmond Hill, Aurora, Newmarket	1,144,200	1,194,100	1,386,900	1,577,200	3.1	369,097	16,097	78,290	139,677
Central										
Brant	Brantford	144,500	153,700	169,400	184,000	2.5	57,800	3,680	9,960	15,800
Dufferin	Orangeville, Shelburne	63,700	70,400	82,500	94,400	2.8	22,750	2,393	6,714	10,964
Haldimand-Norfolk	Simcoe	114,000	122,400	132,200	140,400	2.6	43,846	3,231	7,000	10,154
Haliburton		18,500	20,100	21,800	23,200	2.1	8,810	762	1,571	2,238
Hamilton	Hamilton	552,300	590,700	661,100	732,600	2.5	220,920	15,360	43,520	72,120
Muskoka	Gravenhurst, Bracebridge, Huntsville	62,700	67,100	72,400	76,900	2.3	27,261	1,913	4,217	6,174
Niagara	St Catharines, Niagara Falls, Welland	459,200	492,100	534,700	572,600	2.4	191,333	13,708	31,458	47,250
Northumberland	Port Hope, Cobourg	87,600	93,000	100,700	107,000	2.3	38,087	2,348	5,696	8,435
Peterborough	Peterborough	141,700	155,500	170,000	181,700	2.3	61,609	6,000	12,304	17,391
Simcoe	Barrie, Orillia	494,200	550,400	633,900	708,600	2.6	190,077	21,615	53,731	82,462
Kawartha Lakes		77,300	82,200	88,500	93,900	2.4	32,208	2,042	4,667	6,917
Waterloo	Cambridge, Kitchener, Waterloo	553,400	616,800	702,200	781,400	2.6	212,846	24,385	57,231	87,692
Wellington	Guelph	229,700	247,800	279,100	309,400	2.6	88,346	6,962	19,000	30,654
Eastern										
Ottawa	Ottawa	964,400	1,070,900	1,218,100	1,349,100	2.5	385,760	42,600	101,480	153,880
Frontenac	Kingston	154,900	169,600	182,900	193,400	2.3	67,348	6,391	12,174	16,739
Hastings	Bellefleur, Bancroft, Madoc	140,100	148,700	158,200	165,500	2.3	60,913	3,739	7,870	11,043
Lanark	Perth	70,400	73,900	80,200	84,800	2.4	29,333	1,458	4,083	6,000
Leeds & Grenville	Brockville, Prescott	103,000	104,800	106,600	107,800	2.3	44,783	783	1,565	2,087
Lennox & Addington	Napanee	44,000	45,300	47,800	49,600	2.4	18,333	542	1,583	2,333
Prescott & Russell	Hawkesbury, Clarence-Rockland, Russell	91,800	96,500	104,000	109,700	2.5	36,720	1,880	4,880	7,160
Prince Edward	Pictou	25,200	25,200	25,300	25,500	2.2	11,455	-	45	136
Renfrew	Petawawa	105,100	108,900	114,300	118,900	2.3	45,696	1,652	4,000	6,000
Stormont, Dundas & Glengarry	Cornwall	116,500	119,800	123,900	126,900	2.3	50,652	1,435	3,217	4,522
Southwestern										
Bruce	Kincardine, Walkerton	70,000	74,500	79,100	82,700	2.3	30,435	1,957	3,957	5,522
Elgin	St Thomas, Aylmer	91,400	96,000	101,600	106,800	2.5	36,560	1,840	4,080	6,160
Essex	Windsor, Leamington	412,000	443,700	488,000	530,600	2.5	164,800	12,680	30,400	47,440
Grey	Owen Sound	96,300	102,100	108,300	114,300	2.3	41,870	2,522	5,217	7,826
Huron	Goderich	60,700	63,400	66,200	68,500	2.4	25,292	1,125	2,292	3,250
Chatham-Kent	Chatham	104,800	106,400	106,100	106,300	2.3	45,565	696	565	652
Lambton	Sarnia	129,400	133,000	134,900	136,200	2.3	56,261	1,565	2,391	2,957
Middlesex	London	471,300	523,000	587,400	644,300	2.4	196,375	21,542	48,375	72,083
Oxford	Woodstock, Ingersoll, Tillsonburg	114,100	123,100	134,400	144,500	2.5	45,640	3,600	8,120	12,160
Perth	Stratford	79,000	83,100	88,400	93,300	2.4	32,917	1,708	3,917	5,958

SOURCE: Statistics Canada 2016 Census (households) and Ontario Ministry of Finance (population projections). Calculations by ApartmentResearch.ca.

What observations can be made about the table above? Firstly, population projections from Ontario's Ministry of Finance are uneven and show that some regions and counties are projected to see significant growth while others are projected to see minimal growth. Calculations (not included in the table) show that after Census year 2026 most regions and counties are expected to experience declining growth rates, although total populations are projected to increase. Secondly, it is clear that average household sizes for 2016, the most recent year for which reliable numbers are available, vary widely across southern Ontario, from 2.2 to 3.2 persons per household. The highest average household sizes are found in the suburban areas of the GTA which range from 2.8 to 3.2, while Toronto, in the GTA's core, at 2.4 is equivalent to areas well outside the GTA. In other areas of the

province, average household sizes are generally smaller, ranging from 2.2 to 2.6, with Dufferin an outlier at 2.8. It appears that the further one gets from the GTA, the lower average household sizes are likely to be, generally speaking. Lastly, in most regions and counties thousands, tens-of-thousands, and in some areas hundreds-of-thousands of new housing units will be needed over the next twenty years to accommodate projected population growth.

The table below shows the estimated number of new housing units needed by 2021, 2031, and 2041 to accommodate projected future populations if average household sizes increase or decrease in the future. See the Methodology section for a detailed description of calculations with an example.

TABLE 3 – New Housing Units Needed for 2021, 2031, 2041 based on Increased/Decreased Average Household Sizes

Region/County	Cities	Households	New Housing Units Needed					
		AVG Size 2016	AVG Household Size: +0.1 per Census			AVG Household Size: -0.1 per Census		
			2021	2031	2041	2021	2031	2041
GTA								
Toronto	Toronto	2.4	96,712	156,273	213,309	207,400	536,982	944,634
Durham	Pickering, Ajax, Whitby, Oshawa, Bowmanville, Uxbridge	2.8	7,835	22,376	32,881	26,029	84,814	150,562
Halton	Burlington, Oakville, Milton	2.8	8,562	28,318	46,255	24,138	83,526	154,068
Peel	Brampton, Mississauga	3.2	32,301	109,909	176,992	63,228	225,144	408,123
York	Markham, Vaughan, Richmond Hill, Aurora, Newmarket	3.1	4,059	38,815	69,014	28,937	126,225	237,519
Central								
Brant	Brantford	2.5	1,315	2,700	3,533	6,242	19,200	34,200
Dufferin	Orangeville, Shelburne	2.8	1,526	3,863	5,856	3,324	10,250	18,293
Haldimand-Norfolk	Simcoe	2.6	1,487	1,740	1,444	5,114	13,632	23,011
Haliburton		2.1	327	274	114	1,240	3,302	5,690
Hamilton	Hamilton	2.5	6,272	15,187	23,280	25,205	79,580	145,380
Muskoka	Gravenhurst, Bracebridge, Huntsville	2.3	697	585	203	3,239	8,939	15,461
Niagara	St Catharines, Niagara Falls, Welland	2.4	5,507	6,704	6,115	22,623	63,286	110,035
Northumberland	Port Hope, Cobourg	2.3	663	644	127	4,186	12,263	21,357
Peterborough	Peterborough	2.3	3,183	3,776	3,284	9,073	23,391	39,336
Simcoe	Barrie, Orillia	2.6	13,775	28,509	38,504	30,083	85,532	147,352
Kawartha Lakes		2.4	672	569	171	3,531	9,935	17,213
Waterloo	Cambridge, Kitchener, Waterloo	2.6	15,598	29,292	39,218	33,874	92,458	159,249
Wellington	Guelph	2.6	3,432	7,895	11,460	10,774	33,002	58,987
Eastern								
Ottawa	Ottawa	2.5	26,125	49,276	63,940	60,448	167,922	288,790
Frontenac	Kingston	2.3	3,319	2,998	1,724	9,743	24,102	40,097
Hastings	Bellefonte, Bancroft, Madoc	2.3	1,045	-67	-1,806	6,678	18,187	31,031
Lanark	Perth	2.4	227	370	-92	2,797	8,857	15,298
Leeds & Grenville	Brockville, Prescott	2.3	-1,116	-3,783	-6,283	2,854	8,517	15,106
Lennox & Addington	Napanee	2.4	-213	-630	-1,230	1,362	4,429	7,772
Prescott & Russell	Hawkesbury, Clarence-Rockland, Russell	2.5	395	423	-153	3,488	10,553	18,130
Prince Edward	Pictou	2.2	-498	-1,335	-2,010	545	1,861	3,545
Renfrew	Petawawa	2.3	-321	-1,734	-3,231	3,804	11,454	20,360
Stormont, Dundas & Glengarry	Cornwall	2.3	-736	-2,998	-5,331	3,802	11,298	19,848
Southwestern								
Bruce	Kincardine, Walkerton	2.3	607	-12	-899	3,429	9,115	15,510
Elgin	St Thomas, Aylmer	2.5	363	-274	-960	3,440	9,622	16,840
Essex	Windsor, Leamington	2.5	5,854	9,486	12,067	20,075	57,018	100,500
Grey	Owen Sound	2.3	672	-216	-1,048	4,540	12,280	21,630
Huron	Goderich	2.4	68	-773	-1,671	2,274	6,232	10,761
Chatham-Kent	Chatham	2.3	-1,232	-4,758	-7,601	2,798	7,485	13,490
Lambton	Sarnia	2.3	-844	-4,376	-7,618	4,194	11,189	19,406
Middlesex	London	2.4	12,825	21,181	25,797	31,016	83,339	142,730
Oxford	Woodstock, Ingersoll, Tillsonburg	2.5	1,706	2,360	2,527	5,652	15,451	26,610
Perth	Stratford	2.4	323	-176	-744	3,214	9,179	16,189

SOURCE: Calculations by ApartmentResearch.ca based on data in Table 2 above. NOTE: Average household sizes have been increased or decreased for each Census period, i.e. every five years, including Census years 2026 and 2036 (not shown in the table).

What observations can be made about the table above? The observation made in regarding the previous table (Table 2) also applies here: in most regions and counties thousands, tens-of-thousands, and in some areas hundreds-of-thousands of new housing units will be needed over the next twenty years to accommodate projected population growth. However, if average household sizes change in the future, the direction in which they change will be a major factor in projected totals. If average

household sizes increase and fewer households are formed in the future, then the number of new housing units needed will be much smaller in most regions and counties—in fact, in some regions and counties the number is negative, indicating (at least mathematically) that those areas already have more housing units than they need to accommodate projected population growth. Conversely, if average household sizes decrease then larger numbers of new housing units will be needed.

Which scenario is more likely? Will average household sizes increase or decrease in the future, or stay the same? As already noted, historical Census data shows that 17 (45%) of the 38 regions and counties included in this study saw a decrease in average household sizes from 2011 to 2016⁵, while the remainder saw no change. This suggests a general downward trend, since it is unlikely that average household sizes will remain static for multiple Census periods. It is, of course, nearly impossible to know beforehand which direction average household sizes will trend in the future because of the relationship between total population, household sizes, and housing supply—changes to any two of these variables affect the third⁶. In any case, it is unlikely that average household sizes will increase or decrease *steadily* in the future; more likely, in regions and counties where average household sizes have been changing they will stop for a period, then either continue their previous trend or reverse direction, while regions and counties where average household sizes have not changed are unlikely to remain so.

Conclusions

Because of the high-level scope of the population projections used in this study, and their forward-looking and somewhat speculative nature, any conclusions reached must be similarly high-level. The main conclusion to be reached is the following: it is clear from the data and calculations in this study that in most regions and counties in southern Ontario thousands, tens-of-thousands, and in some areas hundreds-of-thousands of new housing units will be needed over the next twenty years to accommodate projected population growth. This conclusion sketches, with a broad brush, the size and scope of the housing challenges governments and developers across southern Ontario will face as their populations grow. However, these challenges also represent opportunities, especially for developers, who will be the ones supplying the bulk of needed new housing units.

Future Research

This study has used population projections and average household sizes to calculate estimates of total future demand for housing in southern Ontario. This goal has been accomplished at a high level only. What future research should be conducted? Estimating future demand for housing is a complex task: dense with variables and demanding careful assumptions, coming up with more detailed estimates is best left to the experts. With this in mind, the author recommends readers consult the Development Charge Background Studies which regions and counties are required to generate every five years (usually a year after the most recent Census from which they draw data); these documents are prepared by consulting firms which have an expertise in economics, demographics, and statistics and incorporate a variety of data points and apply different assumptions to arrive at detailed demand estimates.

⁵ The five-year period 2011 to 2016 is the most recent period for which reliable Census data is available (2011 Census and 2016 Census).

⁶ For example, if population increases but the housing supply doesn't, then the additional population needs to squeeze into existing housing units and average household sizes will increase. Likewise, if population doesn't change but new housing units are added to the housing supply, then the increased housing capacity allows new households to be formed by members of existing households and average household sizes will decrease.