

Memo

To: Mayor Burton and Members of Council
From: Planning, Design and Development
CC: Neil Garbe, Commissioner, Community Development Services
Date: 11 April, 2024
Subject: **Persons per Unit (PPU)**

What is PPU?

Persons per Unit (PPU) refers to the number of people living in a dwelling unit. PPU is the same as Household Size, the term used by Statistics Canada for Census data. Household Size refers to the number of persons in a private household. A Household refers to a person or group of persons who occupy the same dwelling.

PPU is a statistic that connects population to dwelling units. A PPU factor is one of several assumptions that are needed to determine how many people might be accommodated within a certain gross floor area of a building or group of buildings. Other assumptions in this calculation include average dwelling unit size, floorplate efficiency, and proportion of a building used for non-commercial uses.

How has high-density PPU in Oakville changed in the last 10 years?

Oakville’s overall PPU or Household Size for high-density housing has slowly been increasing over the last Census periods:

Household Size for Oakville high density housing over the last 10 years

Census Year	Average Household Size in Oakville for ‘Apartment in a building that has five or more storeys’
2011	1.70 (rounded to 1.7)
2016	1.71 (rounded to 1.7)
2021	1.75 (rounded to 1.8)



What PPU is being used for Midtown OPA planning?

Oakville's 2022 Development Charges Background Study (DC Study) indicates a forecast 15-year average PPU for high-density housing of 1.703 persons per unit. High-density housing includes bachelor, 1-bedroom, and 2-or-more-bedroom apartments. It has been adjusted to reflect trends recently experienced in both new and older units. This is the PPU value that is being used in planning for Midtown because the main form of housing expected in Midtown is apartment housing.

PPU values indicated in Oakville's DC Background Study are also used for all master planning and infrastructure planning by the Town of Oakville. This is done intentionally to ensure that there is consistency across all the planning done by the Town. That way the development charges collected by the Town, for example, align with the various capital master plans which provide the community infrastructure that the development charges help to fund.

Staff recognize that the PPU provided in the study is based on 2016 Census data rather than 2021 Census data. Oakville's average household size for apartment housing has risen slightly from 1.71 to 1.75 persons per unit between the 2016 and 2021 Censuses. At the time of finalizing the 2022 DC Study, however, household size data from the 2021 Census was not available for incorporation into the study. When Oakville prepares its next DC Study, it will include updated household size data based on the best Census information available at that time.

How does Oakville's high-density PPU compare to its neighbours?

PPU or Household Size for high density housing can vary between neighbouring municipalities, as shown below from 2021 Census data. This shows that there can be substantive differences in PPU between municipalities that are located close to, or next to, each other.

**Household Size for high density housing in Neighbouring Municipalities
(2021 Census Data)**

Municipality	Average Household Size for <i>'Apartment in a building that has five or more storeys'</i>
Halton Region	1.7
Burlington	1.7
Milton	1.9
Halton Hills	1.6
Mississauga	2.2
Hamilton	1.8
Toronto	2.0
Brampton	2.2

Vaughan	1.7
Peel Region	2.2

Each municipality has its own unique combination of population demographics, age of housing stock, economic conditions, and other factors that result in varying PPU.

Higher PPUs may reflect demographic preferences for multi-generational households, for example. Higher PPUs can be a result of a greater number of older apartment housing stock in certain municipalities than others. These apartment complexes may generally be able to accommodate a higher number of persons per unit.

Due to this variation, applying a PPU from another municipality to Oakville is not appropriate as the unique combination of factors in those municipalities may not be applicable to Oakville.

What are Oakville’s forecasted high-density PPUs in the JBPEs?

The Joint Best Planning Estimates for Halton Region (JBPEs) was an exercise undertaken by Halton Region and its local municipalities (Burlington, Halton Hills, Milton and Oakville) to gain an understanding of anticipated future growth within Halton Region to 2051. The JBPEs integrated several studies and local input and remain the most reliable and relevant population and employment forecast for Halton, including Oakville, to 2051. The JBPEs provide an important input into infrastructure and development planning across the region.

The JBPEs provide forecasted PPU factors which were based on the Land Needs Assessment completed as part of Halton Region’s Integrated Growth Management Strategy. The following are the ‘blended’ forecasted PPU factors for all of Halton:

PPU Factors from the JBPEs for Halton Region

Year	Low Density	Medium Density	High Density	Overall
2021 to 2031	3.77	2.80	1.84	2.46
2031 to 2041	3.90	2.94	1.99	2.68
2041 to 2051	3.88	2.97	2.02	2.54

It is also possible to derive PPU factors from the JBPEs for specific policy areas within the region. The following are the PPU factors derived for the Midtown Oakville Urban Growth Centre from the JBPEs:

PPU Factors from the JBPEs for Midtown Oakville

Policy Area	2021 to 2031	2031 to 2041	2041 to 2051
Midtown UGC	1.85	2.06	2.08

Sensitivity Analysis

Town staff conducted a sensitivity analysis with respect to PPU, as requested by Council, to understand how an increased PPU might affect built form in Midtown.

The JBPEs indicate a forecasted population of 32,472 people by 2051 for Midtown. To estimate how much collective floor area would be needed to accommodate that many people, assumptions need to be made with respect to the following:

- *Unit mix* – the proportion of bachelor, 1-bedroom, 2-bedroom and 3-bedroom units;
- *Average unit size* – based on the unit mix and average sizes of each type of apartment unit;
- *Floor space efficiency* – how much additional floor space is needed in addition to the apartment units for hallways, elevators, stairwells, mechanical rooms, etc.;
- The *amount of non-residential uses* included in a mixed use building that provides space for retail stores, offices, private amenity areas for residents, etc.; and,
- *Persons per unit (PPU)* – to allow a conversion from people to floor area of a unit for the residential floor area.
- *Timing of development to 2051 and beyond* – some forecasted PPU factors are based on specific time periods so assumptions need to be made about how much development will occur in each decade leading to 2051 and beyond.

Once an overall floor area is determined after making the above assumptions, the exercise turns to translating that floor area into built form. This involves another set of assumptions and professional judgements to be made, including:

- What size will the building podium footprint be? The building footprint needs to ensure adequate space is provided for things like:
 - public space and/or private amenity space,
 - vehicle access for residents,
 - service access for garbage collection,
 - areas for deliveries and mail,
 - courtyards,
 - space for passenger drop-off and pick-up, and/or,

- other features.
- How tall will the podium or building base be?
- How slim will the towers be?
- How far will towers and podiums be separated from each other?
- If multiple buildings are located on a site, will they be of the same height or will there be variation in their building heights to contribute to an attractive skyline, and ensure openness to sky views?

The exercise to establish these assumptions, translate them into a built form concept, and estimate its evolution to 2051 and beyond, is the exercise that has been undertaken by the Midtown consultants over the last number of months that culminated in the preferred concept for Midtown and the associated draft official plan policies. To adjust the assumption to PPU requires adjustments to other assumptions which then impacts the answers to the above questions when translating those assumptions into built form.

Key Findings from the Sensitivity Analysis Exercise

Based on the analysis it was determined that:

- The current Midtown modeling assumes an overall average unit size of 65 square metres (~700 square feet) at a PPU factor of 1.7 persons per unit which results in an estimated overall net residential floor area of 1.24 million square metres to accommodate the Midtown 2051 population in the JBPEs.
- A higher PPU generally results from a unit mix that contains a higher proportion of 2- and 3-bedroom units. This alternative unit mix generally results in a higher overall average unit size.
- When you apply the PPU factors from the JBPEs for Midtown Oakville (shown in a table in a previous section), it was determined that a change to the unit mix with a higher proportion of multi-bedroom units with an increase in overall unit size ranging from 75.2 square (~810 square feet) to 76.6 square metres (~825 square feet) would also produce an overall net residential floor area of 1.24 million square metres by 2051 – albeit with fewer units.

Here is an example unit mix with average unit sizes that could produce an overall average unit size of 76.6 square metres (~825 square feet):

Unit Type	Mix	Average Unit Size
1 bedroom	30%	46.5 sqm (500 sf)
2 bedroom	50%	81.8 sqm (880 sf)
3 bedroom	20%	109.2 sqm (1175 sf)

- In summary, applying a higher PPU factor in Midtown would result in less units required to house an equivalent population in 2051. However, depending on the unit mix and overall average unit size, the higher PPU factor could produce the same overall net residential floor area as the currently applied PPU factor.
- This sensitivity analysis is simply a mathematical exercise and may not reflect what the housing market is able to deliver, as described below.

Other key findings include:

- **Higher PPUs would require a unit mix with a higher proportion of 2-bedroom and 3-bedroom apartment units, which is not likely supportable by the market.** As a result, developers will not likely propose developments with the unit mix needed for a higher PPU.

For example, the cost to purchase a 3-bedroom apartment unit in a mixed-use, high-density development has increased to the point where it is comparable the cost of a 3-bedroom ground-oriented housing unit (e.g. townhouse or detached house). In addition to the purchase price, the apartment unit owner will also need to pay a monthly condominium fee, whereas this is generally not the case for the majority of ground-oriented homes. The majority of households interested in a 3-bedroom dwelling will choose a townhouse or detached house if the price points are similar.

As a result of this and other economic factors, such as increased interest rates, higher construction material costs, and a shortage of skilled trades, market demand for apartment housing is trending towards smaller units in the form of bachelor and 1-bedroom apartment units in high-density development – not larger, multi-bedroom units. This unit mix tends to result in lower PPU.

Attempting to drive PPUs higher in Midtown risks making housing affordability within Midtown a bigger issue than it already is in our current housing market.

- **Higher PPUs do not change the number of people coming to Midtown.** It just means that the same number of people will be living in a given space, which may be a result of affordability, not a lifestyle choice.

- **Higher PPU's are often the result of affordability not policy direction.** As housing becomes less affordable to many households, this can lead to more people living within a dwelling unit (a higher PPU). As a result, however, this may also mean that more households are living in 'unsuitable' housing, meaning that their dwellings contain too few bedrooms to suit the size and composition of their households.

At the same time, retired couples looking to downsize from a large, multi-bedroom house may choose to purchase a larger, multi-bedroom apartment. This may lead to some households being 'overhoused'. These are households whose dwelling units have more bedrooms than required to suit the size and composition of their households. This would then contribute to a lower PPU and may more likely occur in affluent communities where housing affordability is less of a concern for some households.

- **Higher PPU's do not automatically mean that building heights will be lower.** It could mean that building heights remain the same and other positive community benefits are achieved instead:
 - the tower floorplates become smaller, resulting in slimmer towers which allow more sunlight to penetrate to the street level; and,
 - the amount of floor space in a podium could be reduced resulting in:
 - lower podium heights, and/or
 - more space provided at street level for public and/or private amenity area (which could include increased landscaped green space or public gathering space).
- **Policy cannot dictate the number of people that will live in any given unit.** PPU's are the end result of choices made by many different households within their respective economic and social conditions that are outside the control of an official plan. While an Official Plan is based on educated assumptions regarding a variety of factors, including PPU, PPU is not a starting point for the planning of a community.

Conclusion

Built form – including height and density – is not based on a mathematical equation. Built form is the result of many factors including a responsiveness to the local market for housing, office and other non-residential uses, generating placemaking through activities at grade-level, planning for community amenities within developments, providing a variety of housing types, and ensuring diversity in urban design. Quality urban design generates built form that creates desirable places for people through the achievement of principles including pedestrian focused streets, active uses at-grade

with a high degree of animation, access to sunlight in public spaces and streets, protection of sky views, and attractive skylines. Built form develops and evolves over time as these and other factors change and interact with one another.

Using the forecast PPU identified in the Oakville DC Background Study of 1.7 for high-density units is appropriate for preparation of the Midtown OPA, for several reasons:

- This PPU is consistent with other master planning work within the Town which uses the factors and baseline information provided by the DC Background Study. As described earlier, this helps to ensure consistency between development charges and the community infrastructure master planning that the development charges support.
- There is likely insufficient demand for larger, multi-bedroom units in order to achieve a unit mix in Midtown that would support applying a higher PPU factor to the Midtown OPA modelling.
- The information in the DC Background Study is a relevant basis for the Midtown OPA because this information is based on historical market trends regarding high-density unit mix and based on a PPU that Oakville has historically achieved. As a result, it is intentionally more conservative in its approach than a growth forecast.