



Municipal Comprehensive Review: Land Needs Assessment

City of Peterborough Official Plan Review

June 2021

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Executive Summary

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (the “Growth Plan”) states that the Minister of Municipal Affairs and Housing will establish a standard methodology to assess land needs. The Growth Plan requires that upper- and single-tier municipalities in the Greater Golden Horseshoe use the standard methodology to assess the quantity of land required to accommodate the population and employment forecasts in Schedule 3 of the Growth Plan. In May 2018, the Minister of Municipal Affairs released the first version of the Lands Needs Assessment Methodology for the Greater Golden Horseshoe to assess land need to 2041.

Amendment 1 to the Growth Plan came into effect on August 28, 2020, extending the Growth Plan horizon from 2041 to 2051 and updating the population and employment forecasts in Schedule 3. A second version of the land needs methodology also came into effect on August 28, 2020, replacing the May 2018 land needs methodology. The new methodology provides a more simplified approach to the land needs assessment and flexibility to consider local needs and market-based conditions.

There are two categories used to describe the City’s land needs: (1) community area; and, (2) employment area. Community areas primarily accommodate residential development and population-related jobs, which are jobs that primarily serve the resident population such as, retail, education, health care, government and work-at-home employment. Community areas include both the delineated built-up area and designated greenfield areas but do not include employment areas. Employment areas are lands designated in an official plan for clusters of business and economic activities including, but not limited to, manufacturing, warehousing, offices, and associated retail and ancillary facilities. Most employment land jobs are located within industrial areas and business parks and may be in both the delineated built-up area and designated greenfield areas.

Schedule 3 of the Growth Plan requires that the City plan to accommodate a minimum of 125,000 residents and 63,000 jobs by 2051. This represents an increase of approximately 42,000 people and 18,000 jobs from 2016 to 2051. Based on the provincial land needs methodology, there are approximately 190 hectares of land in the designated greenfield area considered excess and will not be required to accommodate growth to 2051. This figure accounts for the 290 hectares of community area land need in the designated greenfield area and 110 hectares of land need for employment area.

These land need figures assume that the designated greenfield area will be planned to achieve an overall minimum average density of 50 residents and jobs per hectare and that employment areas will be planned to achieve an overall minimum density of 25 jobs per hectare by 2051. It is recommended that the rate of residential development, post-secondary student enrolment and housing demand, jobs, and other data inputs for this methodology be monitored to ensure no shortfall in community area and employment area lands within the Growth Plan horizon. Lands that have not yet been identified as habitat for endangered and threatened species, wildlife habitat, natural heritage feature minimum vegetation protection zones, having archaeological potential or any other development constraints may also have potential implications on the availability of developable lands to 2051.

1.0 Introduction

1.1 Official Plan Review Background

The City of Peterborough's Official Plan Review process, named and advertised as "Plan It Peterborough" began in 2011. Phase One of the Plan It Peterborough process involved a review of issues, community priorities and policy options through extensive consultation with stakeholders, advisory groups and the public. Feedback was gathered through an online survey, discussions from three public workshops, four issue-themed stakeholder workshops, three guest speaking appearances, and Committee meetings. Based on discussions with the community and stakeholders, the City released Part One of the Draft Official Plan in 2016 for further community feedback. Part One outlines the vision, guiding principles, and strategic policies of the Official Plan.

Phase Two of the Plan It Peterborough process involved further public engagement and the establishment of a Working Advisory Group consisting of 25 public and private sector stakeholders as well as a Technical Committee consisting of 19 senior interdepartmental staff to oversee the development of the Plan. The engagement framework was separated into the Plan's major components, namely the vision and guiding principles, growth management strategy, land use, transportation, urban design, cultural heritage and the natural heritage system. From September 2017 to July 2019, fourteen pop-up events were held at various locations throughout the city including the Peterborough Bus Terminal, Peterborough Square Mall, Lansdowne Place, Peterborough Public Library, Fleming College, Trent University, and Downtown Farmers' Market. Eight of the fourteen pop-ups were held in collaboration with fourth-year environmental and resource science students from Trent University as part of the Ecological Design course. In early June 2018, the City hosted a four-day community design charrette and evening open houses to develop urban design guidelines and evaluate intensification potential in the Delineated Built-Up Area and Downtown. The City also hosted six drop-in public open houses in August and September 2019 to consult on the Draft Official Plan. It is estimated that over 5,000 people have been involved in the Official Plan Review process to date.

1.2 Land Needs Assessment Background

On July 1, 2017, the 2017 Growth Plan for the Greater Golden Horseshoe took effect, replacing the 2006 Growth Plan. The 2017 Growth Plan introduced the policy that the Minister of Municipal Affairs and Housing will establish a standard methodology in which upper- and single-tier municipalities are required to use and assess the quantity of land required to accommodate the population and employment forecasts in Schedule 3 of the Growth Plan.

The 2017 Growth Plan increased the minimum density target for the designated greenfield area to from 50 to 80 residents and jobs per hectare as well as the minimum intensification target from 40% to 50% from when the new Official Plan was adopted to 2031 and 60% from 2031 to 2041. The policies enabled municipalities to request alternative targets subject to the approval of the Minister of Municipal Affairs and Housing. To that end, Peterborough City Council passed the following motion on March 19th, 2018 with respect to the designated greenfield area:

“That Council support the spirit and intent of the Places to Grow Act, and that staff pursue the following targets to guide the ongoing Review, while recognizing that the final targets of (ii) to (iv) will be reviewed by the Working Advisory Group and may be reconsidered by Council as a result of ongoing public engagement and/or Provincial direction prior to the adoption of the updated Official Plan in 2019:

That the updated Official Plan Review seek an ‘alternative’ target to the Province’s Designated Greenfield Area density target of 80 residents and jobs per hectare to: A minimum [average] of 55-65 residents and jobs per hectare up to 2041 for subdivisions approved after the new Official Plan is adopted”.

In May 2018, the Minister of Municipal Affairs and Housing released the first version of the Lands Needs Assessment Methodology for the Greater Golden Horseshoe to assess land need to 2041. Through the completion of the land needs assessment, municipalities would either determine the need for additional land through a settlement area boundary expansion or determine there are excess lands. The methodology also used two types of geographies to describe land needs: (1) community area; and, (2) employment area.

The methodology required that the City receive approval from the Minister before using an alternative density target for the designated greenfield area and embarking on the land needs assessment work. The City submitted the request to the Minister on October 29th, 2018 to update the delineated built boundary and achieve an alternative density target of 54 residents and jobs per hectare in the designated greenfield area. The City did not receive a formal response from the Minister nor the Ministry of Municipal Affairs and Housing regarding the City's alternative density target request. However, a new Growth Plan came into effect in May 2019. The 2019 Growth Plan re-established a density target of 50 residents and jobs per hectare in designated greenfield areas, consistent with the 2006 Growth Plan.

In preparing the land needs assessment, City Planning staff have conferred with Ministry of Municipal Affairs and Housing staff, including staff from the Eastern Municipal Services Office and Ontario Growth Secretariat's Growth Policy, Planning and Analysis Branch. Based on the advice of Ministry staff in June 2019, the City prepared and submitted two draft versions of the land needs assessment for preliminary feedback from the Ministry on August 29th, 2019. The first and preferred version featured an updated delineated built boundary following the Methodology to Define the Built Boundary for the Greater Golden Horseshoe released by the Province in 2008. In this scenario, the designated greenfield area would be planned to achieve a minimum target of 50 residents and jobs per hectare, but still require a moderate increase in the density of new subdivisions from the minimum 50 residents and jobs per hectare.

The second version determined the land needs based on the existing delineated built boundary. This version required a request to the Minister for an alternative density target of 47 residents and jobs per hectare in the designated greenfield area. At the time, the minimum density target of 50 residents and jobs combined per hectare was not achievable in the designated greenfield area by 2041 with the existing delineated built boundary; noting this option would mean the new development would need to be built at approximately 75 residents and jobs per hectare. Due to the inclusion of subdivisions that were approved but unbuilt prior to 2006 Growth Plan, new subdivisions would need to develop at a much higher density to compensate for the older, lower density subdivisions which otherwise would have been included in the updated delineated built boundary.

On April 29th, 2020, the City was advised by Ministry staff to proceed with the second scenario that maintains the existing delineated built boundary. The City also received written feedback from Ministry staff regarding minor adjustments to the draft land needs assessment on May 21st, 2020. Since that time, however, the Growth Plan was amended on August 28, 2020 which extended the planning horizon from 2041 to 2051 and a new land needs assessment methodology was also released in August 2020, replacing the methodology established in 2018.

The 2020 methodology provides a more simplified approach to the land needs assessment and flexibility to consider local needs and market-based conditions. This land needs assessment therefore reflects the August 2020 methodology released by the Province and a minimum overall density target of 50 residents and jobs per hectare for the designated greenfield area.

1.3 Purpose

The purpose of this report is to substantiate and document the City's land needs to 2051. More specifically, this report seeks to:

- Quantify the land required for community area (i.e., residential development and largely population-related employment) and employment area (i.e., predominately industrial-based employment) development;
- Identify density targets for employment areas and the designated greenfield area; and,
- Determine the amount of excess lands within the settlement area boundary or the need for settlement area boundary expansion.

2.0 Employment Area Land Need

Employment areas are locations which accommodate most employment land jobs (i.e., industrial), as well as some population-related jobs and office jobs, particularly those providing services to the employment area. Employment areas are located in both the delineated built-up area and designated greenfield area.

Components E1 to E4 of the lands needs assessment methodology determines where and how employment growth will be accommodated in the community area and employment areas. Section 2.2.5.13 of the Growth Plan also requires that upper- and single-tier municipalities establish minimum targets for all employment areas within settlement areas that:

- a) are measured in jobs per hectare;
- b) reflect the current and anticipated type and scale of employment that characterizes the employment area to which the target applies;
- c) reflects opportunities for the intensification of employment areas on sites that support active transportation and are served by existing or planned transit; and
- d) will be implemented through official plan policies and designations and zoning by-laws.

2.1 Component E1: Employment Forecasts

Component E1 of the employment area land need assessment uses the Schedule 3 employment forecast to determine employment growth within the planning horizon. From 2016 to 2051, total employment is forecasted to grow from 44,700 to 63,000 jobs, representing an increase of 18,300 jobs. Employment is further categorized by place of work categories in Table 1, including usual place of work, work at home and no fixed place of work¹. The top three industries by each place of work category for those reporting their place of work as Peterborough are as follows:

- a) Usual place of work: Health care and social assistance, retail trade and educational services
- b) Work at home: professional, scientific and technical services, health care and social assistance and retail trade
- c) No fixed place of work – construction, administrative and support, waste management and remediation services and health care and social assistance

¹ Statistics Canada defines no fixed place of work (or no fixed workplace address) employees as “persons who do not go from home to the same workplace location at the beginning of each shift. Such persons include building and landscape contractors, travelling salespersons, independent truck drivers, etc.”

Overall, the largest employment sectors for the City are within the health care and social assistance followed by retail trade, educational services, manufacturing, accommodation and food services, and public administration respectively (see Table 1). From an occupational perspective, sales and service occupations form the largest group with nearly 13,500 jobs. From 2001 to 2016, occupations in education, law and social, community and government services, sales and service represented the highest amount of growth, followed by health, business, finance and administration occupations. In contrast, there was a 1,439 decline in manufacturing and utilities occupations during the same 15-year period.

Table 1: 2016 Employment by Place of Work and NAICS

Industry NAICS	Usual Place of Work	Work at home	No Fixed Place of Work	Total
Total - Industry - (NAICS) 2012	38,435	2,275	3,980	44,690
11 Agriculture, forestry, fishing and hunting	125	45	40	210
21 Mining, quarrying, and oil and gas extraction	20	10	10	40
22 Utilities	330	0	30	360
23 Construction	710	100	1,270	2,080
31-33 Manufacturing	3,435	55	110	3,600
41 Wholesale trade	940	90	115	1,145
44-45 Retail trade	6,190	170	140	6,500
48-49 Transportation and warehousing	1,240	40	230	1,510
51 Information and cultural industries	620	120	65	805
52 Finance and insurance	1,305	115	20	1,440
53 Real estate and rental and leasing	565	105	50	720
54 Professional, scientific and technical services	1,425	475	145	2,045
55 Management of companies and enterprises	0	0	0	0
56 Administrative and support, waste management and remediation services	1,910	120	555	2,585
61 Educational services	3,905	135	340	4,380
62 Health care and social assistance	7,250	280	450	7,980
71 Arts, entertainment and recreation	615	145	80	840
72 Accommodation and food services	3,270	80	100	3,450
81 Other services (except public administration)	1,795	165	170	2,130
91 Public administration	2,780	40	75	2,895

Of those reporting Peterborough as their usual place of work in the 2016 Census commuting flow data, over 61% reside in Peterborough and 25% in the County of Peterborough. Therefore, the majority of Peterborough's labour market is currently concentrated in the City and immediate surrounding area. For this reason, the 2016 Census reported the Peterborough Census Metropolitan Area as having one of the lowest average commute times in Ontario with an average commute time of 22 minutes. The 2016 Census commuting flow data also demonstrates that Peterborough has more people commuting into the city for work than leaving – 6,035 City of Peterborough residents commute outside the city for their usual place of work versus 14,630 people commuting into the city for work.

To achieve a complete community, it is desirable for the city to maintain an activity rate of at least 1 job for every 2 residents. Based on Schedule 3 of the Growth Plan, the total employment at 2051 will achieve this benchmark. Typically, bedroom communities with significant out-commuting for work have activity rates below 35%. Table 2 summarizes activity rates from 2001 to the Growth Plan horizon based on the observed and forecasted population and employment figures. To maintain this ratio during the Growth Plan horizon, an adequate supply of lands designated as employment area and updated employment policies in the Official Plan are needed.

Table 2: 2001-2041 Observed and Projected Activity Rates

Year	Population	Employment	Activity Rate (Ratio of Jobs to Population)
2001	71,446	36,100	51%
2006	74,898	40,700	54%
2011	78,777	42,480	54%
2016	83,171	44,700	54%
2021	89,000	46,000	52%
2031	103,000	51,000	50%
2041	114,000	57,000	50%
2051	125,000	63,000	50%

(Source: 2001-2016 Census, 2020 Growth Plan for 2021-2051 figures)

Work from home employment and no fixed place of work are both growing segments of total employment. Post-COVID-19, it is anticipated that a higher proportion of workers in largely office-type jobs will work remotely from home multiple days per week and a more modest proportion of workers will work remotely from home permanently. As of May 2020, Statistics Canada estimated only 4 in 10 Canadian workers are in jobs that can plausibly be carried out from home. Statistics Canada also reported that finance, insurance and educational service workers as well as professional, scientific and technical services have the highest ability to work from home (ranging from 84% to 85% telework capacity). Although the educational services and public administration sectors have considerable telework capacity, the other large employment sectors for the City (i.e., health care and social assistance, retail trade, manufacturing, accommodation and food services) reported relatively low telework capacity, ranging from 5% to 29%.

Of those employers offering remote options during the COVID-19 pandemic, there does not appear to be substantial evidence to support the likelihood of businesses adopting permanent measures such as offering more employees the option to telework/work remotely, requiring more employees to telework, or increasing telework capacity post-COVID-19. There is some evidence to support higher interest in telework for businesses in the information and cultural industries, finance and insurance, real estate and rental and leasing, and profession, scientific and technical services.²

With the continual growth of the knowledge-based economy, trends in goods movement and remote communications, working from home will be an increasingly viable arrangement for workers in the future. For those reasons, and for the purpose of estimating future employment area land requirements more accurately, this assessment assumes a modest increase in the proportion of work at home employment for 2051 from 5.1% to 6.1% of all jobs. This represents an increase of 1,580 work at home jobs from 2016 to 2051.

Table 3 shows the total employment from 2016 to 2051 and provides separate figures for work at home employment because it does not generate additional land need beyond what is required for residential growth. Home based employment will be added back in a later step to determine Community Area land needs and the designated greenfield area density.

² Statistics Canada. Table 33-10-0263-01 Likelihood of various measures being permanently adopted once COVID-19 pandemic is over, by business characteristics.

Table 3: 2016-2051 Total Employment Growth

Planning Period	Total Employment	Work at Home	% Work at Home	Total Employment Less Work at Home
2016	44,700	2,280	5.1%	42,420
2041	58,000	3,300	5.7%	54,700
2051	63,000	3,860	6.1%	59,140
2016-51	18,300	1,580	1.0%	16,720

The methodology also requires that the employment forecasts be further structured into four primary employment land use categories: population-related, employment land, major office and rural-based jobs. Each land use category is defined as follows:

- 1) **Population-related employment:** Jobs that primarily serve a resident population, including retail, education, health care, local government and work-at-home employment. The vast majority is located in community areas.
- 2) **Major office employment:** Office jobs contained within free-standing buildings with more than 20,000 net square feet (1,858 m²) of floorspace, as this is the size threshold that is used for most relevant datasets. This differs from the 4,000 m² size threshold that is used in Growth Plan policy for determining the size of buildings that must be located near existing or planned frequent transit.
- 3) **Employment land employment:** Jobs accommodated primarily in industrial-type buildings. The vast majority are located within business parks and industrial areas (i.e. employment areas) within settlement areas.
- 4) **Rural-based employment:** Jobs scattered throughout rural lands (i.e., may be within rural settlements but otherwise outside of settlement areas) and include agriculture and primary industries as well as other uses that might typically be found in existing employment areas located outside of settlement areas on rural lands. Uses will typically include agriculture-related uses such as feed or fertilizer facilities, small-scale manufacturing or construction businesses run from rural and farm properties and some scattered retail or service users.

The estimated employment in each land-use based category from 2016 to 2051 is shown in Table 4. Most jobs are categorized in the population-related and employment land categories. As with many other municipalities in the outer ring, the anticipated amount of growth in major office employment is minimal and is anticipated to increase by 1,000 jobs. No rural-based job growth is anticipated for Peterborough.

Table 4: Employment by Land Use Category

Planning Period	Major Office	Population Related	Employment Land	Rural Based	Total
2016	1,600	31,100	9,720	0	42,420
2051	2,600	41,820	14,720	0	59,140
Share of Growth 2016-51	6%	64%	30%	0%	100%
Employment Growth 2016-51	1,000	10,720	5,000	0	16,720

Although the City has not historically conducted employment surveys, the City and County's regional economic development agency, Peterborough and the Kawartha Economic Development, conducted the first business count survey in the summer of 2020. However, the survey was impacted by the COVID-19 pandemic and the response rate was 218 businesses for the City of Peterborough. It is recommended that the land use-based employment figures and forecasts be monitored as more local employment data becomes available to ensure no shortfall in employment areas within the planning horizon.

In the interim, the base year employment location and jobs are based on studies for development charges, average floor area per employee, reported jobs for major employers, the Transportation Tomorrow Survey, retail market studies, and Statistics Canada North American Industry Classification (NAICS) and National Occupational Classification (NOC) data. Based on historical floor area trends, it is estimated that population-related employment requires 40 square metres of floor area per employee and employment land-related employment requires 90 square metres of floor area per employee on average. These floor area rates per employee were applied in the 2014 and 2019 City-Wide Development Charges studies to forecast growth in non-residential space in the City.

The City of Peterborough has a high number of population-related jobs relative to its population. From 2001 to 2016, it was estimated that there were fewer than 3 residents for every population-related job in the City of Peterborough. This ratio is one of the lowest among municipalities within the Greater Golden Horseshoe (lower ratio means more population-related jobs in the community relative to its population). This is attributed in part by the role of Peterborough as a primary regional goods and service centre for the city and surrounding area.

While some decline is anticipated over time in the retail sector with the growth of e-commerce spending (and accelerated in response to COVID-19), other population-related employment such as service and convenience commercial, public administration, health care services and other institutional employment are anticipated to increase with the population. Notably, health care and other services are anticipated to grow due to the aging population.

Based on the City's 2016 Retail Market Analysis, there will be a need for 1.9 million square feet (177,090 square metres) of additional retail and selected service commercial space from 2015 to 2036 and additional 57,900 square feet of additional food store space from 2036 to 2041. If the forecasted trend continues to 2051, the need for additional retail and selected service commercial space may increase to 3.3 million square feet from 2015 to 2051. It is estimated that this is equivalent to approximately 7,000 population-related jobs, not including other types of population-related employment (e.g., health care, education, and government). However, the short- and long-term implications of COVID-19 on projected floor space need, online grocery shopping demand and consumer preferences are not yet fully known.

A conservative assumption is that there will be a modest increase in the proportion of employment land jobs to ensure an adequate quantity of lands for employment area to 2051. This land needs assessment assumes that the growth in employment land jobs represents 30% of new employment, excluding home based employment. Generally, looking forward to 2051, this assessment assumes:

- 1) That there are no drastic changes in the split between the land use-based employment categories;
- 2) That the projected growth and trends in employment land employment falls between the forecasts in the 2020 Technical Report for the Greater Golden Horseshoe Growth Forecasts and 2019 City-Wide Development Charges study, which forecasts growth in non-residential space to 2031; and,
- 3) That the ratio between residents to population-related employment does not shift rapidly over time or decrease indefinitely.

2.2 Component E2: Employment Allocation

The second component requires that jobs be allocated to rural areas, community areas and employment areas.

2.2.1 Rural Area Job Allocation

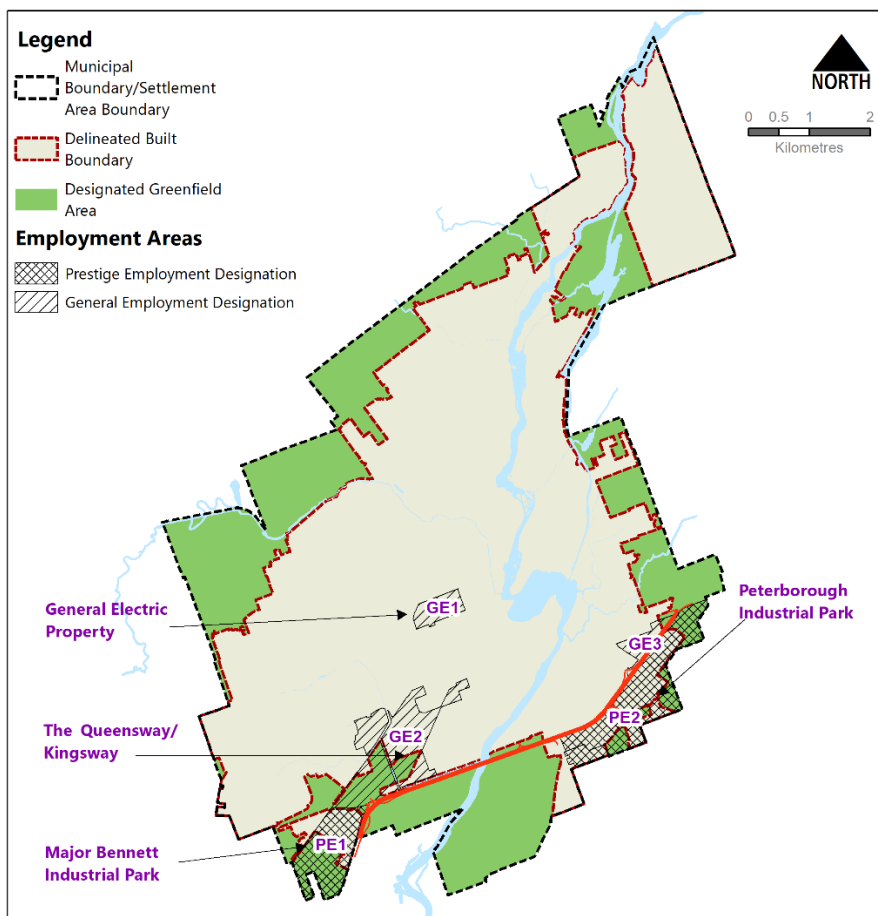
Rural Areas are not applicable within the City of Peterborough.

2.2.2 Employment Area Job Allocation

For this land needs assessment, employment areas include lands designated in the draft new Official Plan as Prestige Employment and General Employment. The proposed Prestige Employment Designation represents the City's large modern business parks and the proposed General Employment Designation represents existing pockets of older industrial development. The proposed Prestige Employment designation is provided a higher level of protection while the proposed General Employment designation offers greater flexibility for land use conversation subject to an Official Plan Amendment. As of 2016, there were four employment areas with a total land area of 420 hectares not including those lands under the Natural Areas designation (i.e., natural heritage system). As shown in Figure 1, these four employment areas are:

- 1) The General Electric Property;
- 2) Major Bennett Industrial Park;
- 3) Peterborough Industrial Park and surrounding area; and,
- 4) The Queensway/The Kingsway and surrounding area.

Figure 1: Existing Employment Areas



The General Electric property is 29 hectares and is less than 200 metres from the boundary of the Urban Growth Centre. The plant ceased manufacturing operations at the end of 2018, resulting in a loss of 358 jobs. About 50 employees remain under the engineering division and a small portion of the property is leased by BWXT Nuclear Energy Canada. BWXT is seeking to renew 10-year license for Class IB nuclear fuel facility operating licence, which expires at the end of 2020. BWXT is also seeking additional flexibility to produce natural uranium pellets. It is not known at this time whether the extension of the licence or pelleting will result in more jobs.

Future use of the General Electric property is uncertain due to potential environmental contamination, cultural heritage value, and other complexities associated with the site. Based on other properties of a similar nature, an assumption of 25+ years for full redevelopment is not unrealistic. However, redevelopment opportunity for future employment use at the site is speculative and will depend on the costs of remediation and redevelopment as well as market demand for employment land. In an optimistic scenario, a small portion of the site could proceed with redevelopment within the planning horizon. As such, only a modest amount of job growth is attributed to the property for the purposes of this land needs assessment.

Peterborough's major industrial parks are the Major Bennett Industrial Park and Peterborough Industrial Park. Both industrial parks are located along the southern portion of the municipal boundary adjacent to Highways 115 and 7. Each industrial park is serviced by one public transit route. Both industrial parks have a wide mix of occupants and industrial uses, including food processing, advanced manufacturing, heavy industry, production, distribution, warehousing, business services, storage and waste management.

CleanTech Commons is a new green technology business park being established by the City in partnership with Trent University. CleanTech Commons is a research and innovation cluster within the community area that is focused on clean technology, water technology, agri-food, and biotechnology. Initial estimates were that 12 acres will be developed in its initial year and three to five acres per year thereon. Even with a more modest build-out rate of 7 acres in the initial year (i.e., 2021) and two acres per year thereon, it is anticipated that the business park will approach build-out by the Growth Plan horizon. While to date there are about 65 acres of developable land area, it is noted that Trent University's 2021 Trent Lands Plan identifies the potential for a revised footprint totaling 85 acres (35 hectares) to offset the 20-25 acres of provincially significant wetland buffers and provincial highway reserve included in the original footprint. It is estimated that the business park may yield anywhere between 2,000 to 4,000 jobs at build-out, depending on the intensity of development, land uses and business needs of the tenants. For this land needs assessment, a conservative estimate of 2,000 jobs is used to consider new employment area land need.

The forecasted location of jobs in 2051 is based on the following assumptions: (1) that 8% of all population-related jobs will be located in employment areas, consistent with 2016 observations; and, (2) that most employment land jobs will occur in employment areas, except for jobs in CleanTech Commons, which is in the community area and delineated built boundary. These assumptions are reflected in Table 5, which also allocates the jobs created by the recently opened Shorelines Casino and Hampton Inn to the employment area. Population-related employment in employment areas typically occur in the form of automobile-focused uses, restaurants, limited retail, and other personal services. Table 6 shows that by 2051, a total of 14,260 jobs are anticipated in employment areas. This figure will be used in a later component to determine employment area land need.

Table 5: Employment in Employment Areas - Share of Total Employment by Type

Planning Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016	0%	8%	76%	0%	23%
2016-2051	0%	11%	65%	0%	
2051	0%	9%	72%	0%	24%

Table 6: Employment in Employment Areas - Employment by Type

Planning Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016	0	2,420	7,420	0	9,840
2016-2051	0	1,190	3,230	0	4,420
2051	0	3,610	10,650	0	14,260

2.2.3 Community Area Job Allocation

As shown in Table 7 and Table 8, all major office employment and the remaining bulk of population-related jobs are allocated to community areas. Community areas are also anticipated to accommodate some employment land jobs due to the development of CleanTech Commons. This growth in employment land employment in the community area is offset however by some potential business relocations to employment areas or job loss/business closures.

Table 7: Employment in Community Area - Share of Total Employment by Type

Planning Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016	100%	92%	24%	0%	77%
2016-2051	100%	89%	35%	0%	
2051	100%	91%	28%	0%	76%

Table 8: Employment in Community Area - Employment by Type

Planning Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016	1,600	28,680	2,300	0	32,580
2016-2051	1,000	9,530	1,770	0	12,300
2051	2,600	38,210	4,070	0	44,880

As described earlier in Component E1, Table 9 allocates home based employment into the community area as population-related employment. This step is required to calculate the overall density in the designated greenfield area and community area land need in Component R5.

Table 9: Employment in Community Area - Employment by Type including Work at Home

Planning Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016	1,600	31,780	2,300	0	35,680
2016-2051	1,000	10,290	1,770	0	13,060
2051	2,600	42,070	4,070	0	48,740

Jobs destined for the community area are then further allocated between the delineated built-up area and designated greenfield area. As shown in Table 10, the bulk of population-related jobs will be directed to the delineated built-up area, where there is greater access to public transit service, major institutions, and public service facilities.

Limited commercial development has occurred to date in the designated greenfield area. The community area job forecast within new greenfield subdivisions are established based on the estimated land base and ratio between the projected proportion of residents to jobs within built/under construction subdivisions to 2051. Another significant component of job growth to 2051 is attributed to Trent University, which owns approximately 120 hectares of gross land area in the designated greenfield area.

Table 10 includes potential job growth at Trent University and considers the University's draft plan for a long-term care facility, retirement residence, student housing and sustainable village. The forecasted total number of jobs in the designated greenfield area will be used in combination with the total population figure in 2051 to determine the density and community area land need to 2051.

Table 10: Community Area Employment by Policy Area

Planning Period	Employment in DGA Community Area	Employment in BUA Community Area	Total
2016	500	35,180	35,680
2016-2051	3,000	10,060	13,060
2051	3,500	45,240	48,740

2.3 Component E3: Existing Employment Area Potential

The purpose of Component E3 is to estimate the minimum number of jobs that may be accommodated in existing employment areas by 2051. Noting the direction in the Growth Plan to make more efficient use of existing underutilized employment areas, job growth in existing employment areas is based on the intensification of developed properties and development of vacant properties. Estimating intensification potential of existing properties is highly speculative as additional floor area need will vary between property owners, tenants and their respective business plans. It is also important to note that planned expansions do not necessarily correspond with plans for new job hires.

For this land needs assessment, intensification potential was estimated based on observed building additions from 2012 to 2019. During that period, building additions created only 2,000 square metres of employment land floor area and 2,200 square metres of population-related floor area. However, it is noted that 13,670 square metres of industrial floor area (largely attributed to the General Electric property) was also demolished during that same 8-year period. The job potential of vacant properties was estimated using either proposed floor areas (where available) or an average floor area ratio of 0.24 and average floor area per employee of 90 square metres per employee.

Table 11 forecasts 10,960 jobs and employment density of 26 jobs per hectare within existing employment areas by 2051. The total number of jobs to be accommodated in existing employment areas is later subtracted from the total forecasted employment land jobs from Component E2 to determine additional employment area land need in Component E4.

Table 11: Total Employment Area Jobs, Land and Density in Built Employment Areas

	2016	2016-2051	2051
Jobs	9,840	1,120	10,960
Land (ha)	420	0	420
Density (jobs/ha)	23	n/a	26

2.4 Component E4: Need for Additional Land

To determine employment area land need, the forecasted number of jobs anticipated in employment areas is subtracted from the number of jobs that may be accommodated within existing employment areas by 2051 then divided by the forecasted density of newly developing employment areas. It is anticipated that any new employment area established within the Growth Plan horizon will accommodate a combination of prestige industrial uses as well as technology and knowledge-based industries. The density of new employment areas is estimated using a weighted average density between Major Bennett Industrial Park, CleanTech Commons and increased warehousing, wholesale and logistics facilities as shown in Table 12. Major Bennett Industrial Park is the more recent of the two industrial parks in the city and contains prestige industrial uses. CleanTech Commons is a new research and innovation park in the community area with a focus on knowledge-based industries. With the continued growth of e-commerce (and intensified by COVID-19), demand for logistics, warehousing and wholesale space is expected to continue, though it is noted that Peterborough businesses have had challenges during the pandemic filling positions in the manufacturing and warehousing/distributions/logistics sectors. Nevertheless, it is important to factor these uses into the density calculation as they occur at a lower job density than other employment land uses. Including these uses will help ensure an adequate supply of land to allow a full range and mix of employment opportunities. Since the forecasted employment area land need is based on this density estimate, it is recommended that the density of employment areas and other employment trends be monitored to ensure no shortfall in employment area.

Table 12: Density Calculation for Newly Developing Employment Areas

Description	Net Land Area (hectares)	2051 Jobs	2051 Density	Weight
Major Bennett Industrial Park	85	2,770	33	70%
CleanTech Commons	33	2,000	61	10%
Increased Warehousing/ Wholesale/Logistics Facilities	-	-	14	20%
Total	118	4,770	30	100%

Using this density, Table 13 shows the need to accommodate an additional 3,300 jobs outside of existing employment areas. This represents a land need of 110 hectares. The identification of new employment area will need to consider a number of factors, including but not limited to: access to servicing, highway visibility and access, proximity to major goods movement facilities and corridors, size and range of sites to meet market choice, and proximity to sensitive uses.

Table 13: Employment Area Forecasts and Land Need

Total Jobs in <i>Employment Areas</i> at 2051	14,260
Total Jobs in Existing <i>Employment Areas</i> at 2051	<u>10,960</u>
Remaining Unallocated <i>Employment Area</i> Jobs at 2051	3,300
Density of Newly Developing <i>Employment Areas</i> (employees per hectare)	30
Additional <i>Employment Area</i> Land Need (hectares)	110

Pursuant to Policy 2.2.5.13 of the Growth Plan, the City is required to establish a minimum density target for all employment areas that reflects the current and anticipated type and scale of employment. Though the calculation of the density target is not required within the land needs methodology, Table 14 summarizes the components for the calculation. Employment areas under the policies of the new Official Plan will need to be planned to achieve a minimum overall density target of 25 jobs per hectare.

Table 14: Employment Area Density Target

Total Employment in Existing <i>Employment Areas</i> at 2051	10,960
Total Employment on Additional Lands	3,300
Total Employment in <i>Employment Areas</i> at 2051	14,260
Land Area in Existing <i>Employment Areas</i> at 2051	421
Land Area of Additional Lands	110
Total Land Area in <i>Employment Areas</i> at 2051	531
Employment Area Density Target	25

The City undertook additional sensitivity analysis with respect to the employment area land need and forecasted growth in employment land jobs. Based on Hemson's 2020 Technical Report for the Greater Golden Horseshoe: Growth Forecasts to 2051, a net increase of only 3,000 employment land jobs was forecasted from 2016 to 2051. This represents only 18% of overall employment growth. This is a large deviation from previous data and reports which anticipated employment land jobs will contribute approximately 40 to 45% to overall employment growth. For example, the 2019 City-Wide Development Charges Study forecasted a net increase of 2,700 employment land-related jobs from 2016 to 2031.

It is not clear whether the employment land employment forecast was constrained due to the City's current lack of supply of employment land. However, it is estimated that if the City were to use Hemson's employment land forecast of 3,000 jobs (instead of the 5,000 net increase reported in Component E1) and maintain all employment land related assumptions, the City would require 50 hectares of additional employment area instead of the 110 hectares described in Table 13.

It is recommended that the City proceed with the results of the employment land focused growth scenario demonstrated in earlier components of this land needs assessment to prevent any shortfall in employment area and to better accommodate a full range and mix of employment opportunities. Further, the employment land focused growth scenario is more aligned with the City's objectives of increasing the supply of employment lands, creating a vibrant and complete community and supporting a diverse economy and attracting a diverse workforce. The employment land focused growth scenario would also support a balanced and healthy activity rate, noting that 86% of those reporting the City of Peterborough as their usual place of work reside in either the City or County of Peterborough and that the City has one of the lowest average commute times in Ontario.

3.0 Community Area Land Need

Community Areas are lands which primarily accommodate residential development and population-related jobs, as well as some office jobs and some employment land jobs. Population-related jobs are jobs that primarily serve the resident population such as, retail, education, health care, government and work-at-home employment. Community areas include both the delineated built-up area and designated greenfield areas but do not include employment areas. Components R1 to R6 of the land needs assessment methodology factors the Growth Plan Schedule 3 population forecast, forecasted community area jobs, minimum annual residential intensification target and greenfield density target to determine community area land need.

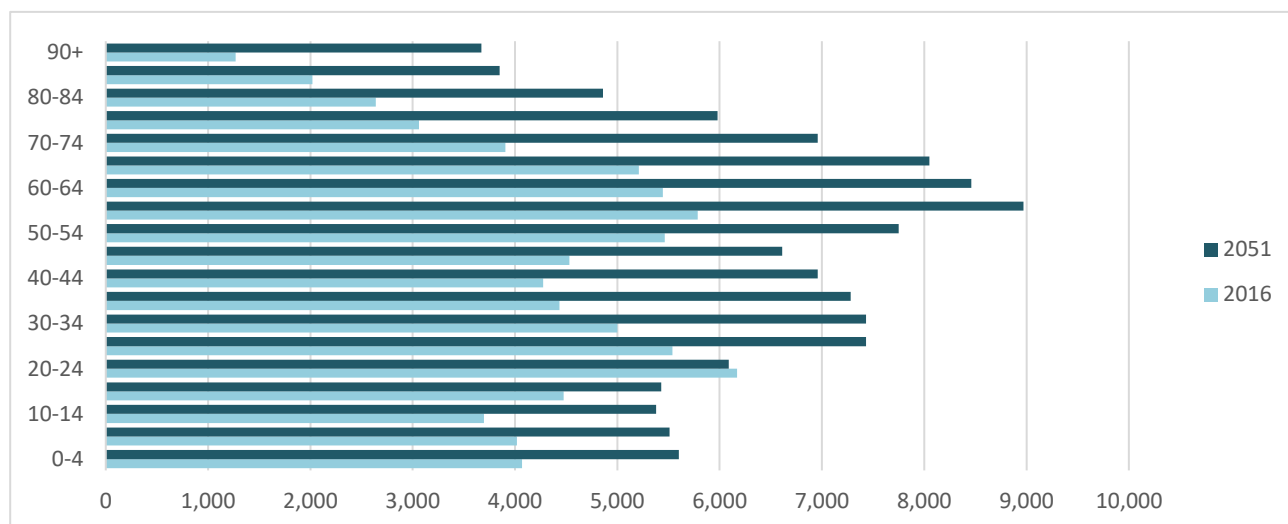
3.1 Component R1: Population Forecasts

Component R1 of the land needs assessment determines the forecasted population growth by 2051. Table 15 provides a breakdown of the census population by household population and non-household population. Typically, the share of non-household population does not change significantly between Census periods and therefore has been held at the 2016 rate for this assessment. The total population is calculated by adjusting for the census net-undercoverage rate. The census net-undercoverage rate of 2.45% is based on the Statistics Canada Annual Demographic Estimates for the 2016 Peterborough Census Division. Figure 2 provides a further breakdown of the census population by 5-year age groups. This step is necessary to forecast the number of households.

Table 15: 2016 and 2051 Population Figures

Population	2016	2051
Total population (including Census net undercoverage)	83,060	125,000
Census net undercoverage rate	2.45%	2.45%
Census Population	81,030	121,940
Household Population	78,530	118,170
Non-household Population	2,500	3,770
Non-household Population Rate	3.09%	3.09%

Figure 2: 2016 and 2051 Population Age Structure



Source: Statistics Canada and Hemson Consulting, Greater Golden Horseshoe: Growth Forecasts to 2051 Technical Report (2020)

3.2 Component R2: Housing Need

Component R2 forecasts the total number of housing units required to 2051. This component is split into two sections to forecast the number of units required for usual residents and units that are not occupied by usual residents (i.e., those who report their permanent residence elsewhere than the City of Peterborough).

3.2.1 Household Growth

Table 16 translates the population forecast into housing units based on 2016 household formation rates by age of the primary household maintainer. There has been a gradual decline in household formation rates over the past two decades; however, these rates cannot continue to decline indefinitely. A conservative and reasonable assumption is that the household formation rates are held constant from 2016 to 2051.

Table 16: Household Forecast by Age of Primary Household Maintainer

Census Age	2016 Population by Age	2016 Households by Age of Primary Household Maintainer	2016 Household Formation Rate	2051 Population by Age	2051 Households by Age of Primary Household Maintainer
15-19	4,475	200	4.5%	5,430	240
20-24	6,170	1,585	25.7%	6,090	1,560
25-29	5,540	2,390	43.1%	7,430	3,210
30-34	5,000	2,560	51.2%	7,430	3,800
35-39	4,435	2,380	53.7%	7,280	3,910
40-44	4,275	2,380	55.7%	6,960	3,870
45-49	4,530	2,580	57.0%	6,610	3,760
50-54	5,465	3,235	59.2%	7,750	4,590
55-59	5,785	3,230	55.8%	8,970	5,010
60-64	5,445	3,310	60.8%	8,460	5,140
65-69	5,210	3,250	62.4%	8,050	5,020
70-74	3,905	2,415	61.8%	6,960	4,300
75-79	3,060	1,940	63.4%	5,980	3,790
80-84	2,640	1,640	62.1%	4,860	3,020
85-89	2,020	1,185	58.7%	3,850	2,260
90+	1,270	425	33.5%	3,670	1,230
Total Households		34,710			54,710

Based on the 2051 household forecast, Table 17 summarizes the household growth from 2016 to the date of the municipal comprehensive review (i.e., 2021) and 2021 to 2051 based on municipal building permit data. The average household growth of 600 units per year from 2021 to 2051 represents a significant increase in the average annual increase in the number of residential units. In comparison, building permits issued from 2007 to 2020 have averaged only 340 units per year.

Table 17: Household Forecast by Forecast Period

Planning Period	Total Households	Planning Period	Household Growth	Average Unit Growth per Year
2016	34,710			
2021*	36,460	2016-2021	1,750	350
2051	54,710	2021-2051	18,250	608
2016-51	20,000			

*anticipated adoption of municipal comprehensive review

Based on the 2016 patterns of age of primary household maintainer by dwelling type observed in Table 18, there continues to be high demand for single-detached dwellings. This market prospect is expected to continue in the future; however, to achieve the density target in the designated greenfield area, new subdivisions will need to plan for fewer single-detached dwellings and more rows and apartments than previously approved subdivisions. In recent years there has been a significant increase in the number of multi-unit development proposals, notably within the delineated built-up area. This trend will need to continue to achieve the annual intensification target of 50% in the delineated built-up area. Therefore, the 2051 projected housing types in Table 19 are adjusted towards more medium and high-density housing forms due to other considerations such as, market conditions, housing affordability, the Growth Plan density targets and policy objectives.

Table 18: 2016 Dwelling by Type and Age Group

Age Groups	Occupied Households	Singles/Semis		Rows		Apartments		Other Dwellings	
		Rate	Units	Rate	Units	Rate	Units	Rate	Units
15 to 24	1,785	27.2%	485	8.7%	155	45.4%	810	18.8%	335
25 to 34	4,950	49.3%	2,440	9.0%	445	30.2%	1,495	11.4%	565
35 to 44	4,760	64.7%	3,080	9.6%	455	18.1%	860	7.5%	355
45 to 54	5,815	70.9%	4,120	6.7%	390	16.3%	945	6.3%	365
55 to 64	6,540	69.3%	4,530	5.9%	385	19.0%	1,245	5.7%	375
65 to 74	5,665	60.2%	3,410	8.4%	475	26.1%	1,480	5.6%	315
75 to 84	3,580	53.9%	1,930	12.0%	430	29.7%	1,065	4.5%	160
85+	1,610	55.3%	890	11.2%	180	31.7%	510	2.2%	35

Table 19: 2051 Dwelling by Type and Age Group, Policy-based Forecast

Age Groups	Occupied Households	Singles/Semis		Rows		Apartments		Other Dwellings	
		Rate	Units	Rate	Units	Rate	Units	Rate	Units
15 to 24	1,800	19.0%	340	10.7%	190	51.7%	930	18.4%	330
25 to 34	7,010	37.7%	2,650	12.2%	850	37.7%	2,640	12.3%	860
35 to 44	7,780	53.1%	4,130	13.9%	1,080	24.2%	1,880	8.6%	670
45 to 54	8,340	60.1%	5,010	10.1%	840	22.4%	1,870	7.5%	620
55 to 64	10,150	58.5%	5,930	8.8%	890	26.2%	2,660	6.8%	690
65 to 74	9,320	48.1%	4,480	11.8%	1,100	34.0%	3,170	6.2%	580
75 to 84	6,810	41.5%	2,820	16.4%	1,110	37.3%	2,540	4.8%	330
85+	3,490	42.7%	1,490	15.3%	530	39.8%	1,390	2.4%	80

Table 20 summarizes the household growth by dwelling type from 2016 to 2051. The proportion of new units show a significant reduction in singles/semis and increase in row and apartment dwellings due to the designated greenfield area density target and delineated built-up area intensification target.

Table 20: Dwelling Type Forecast (excluding Units not Occupied by Usual Residents)

Year	Singles/Semis	Rows	Apartments	Other Dwellings	Total
2016	20,880	2,910	8,420	2,500	34,710
2051	26,600	6,650	17,270	4,190	54,710
2016-51	5,720	3,740	8,850	1,690	20,000
2016-51 %	29%	19%	44%	8%	100%

3.2.2 Units not Occupied by Usual Residents

Next, the housing units not occupied by usual residents are added to establish a forecast of total housing unit growth. The number of new units not occupied by usual residents is estimated based on the number of vacant units, post-secondary students that report their permanent place of residence somewhere other than Peterborough and seasonal/recreational residents, which is negligible within the city. With two post-secondary institutions within city limits (Trent University and Sir Sandford Fleming College) and Seneca College's Peterborough Aviation Campus located just outside of city limits at the Peterborough Municipal Airport, post-secondary students account for most of the units not occupied by usual residents in the City of Peterborough. Most students rent units in the downtown and in proximity to the college and university (i.e., the West end and North end). Since many students report their permanent place of residence elsewhere, they are not included in the Census counts for Peterborough.

It was estimated in 2013 that 4,000 post-secondary students required off-campus housing³. As of 2019, it was estimated that 6,040 post-secondary students were living off-campus in the city and not living with their parents. This estimate is consistent with previous housing needs reports and assumptions. The general assumptions outlined in Table 21 are that 80% of Trent University students live off-campus (30% of which live with their parents or outside the city) and Fleming College students tend to be from the local community and live at home. It is also important to note that the estimate of students living off-campus does not translate into a requirement for 6,040 rental units since many students share accommodation.

Table 21: Estimates of Students Living Off-Campus in City of Peterborough

	Trent University	Fleming College – Sutherland Campus
Post Secondary School Students in Peterborough ⁴	9,000	4,400
Students Not in Student Housing ⁵	7,200	4,000
Less Students Living with Parents or Outside City ⁶	2,160	3,000
Total Students in Private Households	5,040	1,000

Source: UrbanMetrics inc. (2019)

³ Tim Welch Consulting, Greg Suttor Consulting and Deb Ballak. (2013). Housing and homelessness needs assessment: Peterborough City and County.

⁴ Based on information provided by SS Fleming College and Trent University.

⁵ Excludes students living in on-campus student housing. Trent total provided by Trent University. Fleming total estimated based on on-campus student housing spaces.

⁶ Trent figure estimated at 30% and Fleming total estimated at 3,000 based on information contained in June 2013 Background Report for the Peterborough Ten-Year Housing and Homelessness Plan.

Typically, the estimated amount of new student housing required is based on recent construction (i.e., over the last 10 years). The construction of student residences from 2009 to 2019 created approximately 400 beds (i.e., 36 beds per year on average). However, low vacancy rates in Peterborough have created a housing challenge for students as enrolment and the number international students has continued to increase. Concerted efforts by the post-secondary institutions to increase international student enrolment and the associated housing demand have been considered in the forecast. A significant increase was observed from 2015 to 2018 in the total number of international study permit holders reported by Immigration, Refugees and Citizenship Canada for the Peterborough CMA, in which the total annual permit holders increased from 2,105 to 5,090 respectively.

As part of its 2018-2028 Housing Strategy, Trent University has plans to add over 700 residence beds and to start construction in late 2021 (i.e., bringing the city-wide average to 55 new beds per year from 2009 to 2028). It is assumed that the increased rate of 55 beds per year from the observed rate from 2009 to 2019 will address the increased enrolment of international students and student housing challenges.

For most municipalities the rate of units not occupied by usual residents typically falls between 1-2%; however, a rate higher than 2% may occur in a relatively small community with an especially large number of post-secondary students. For Peterborough, the forecasted rate of housing units not occupied by usual residents is based on the rate of student housing constructed over the past 10 years, known student residence construction plans and a vacancy rate of 3% for apartments and 1% for all other dwelling types. The land needs assessment methodology allows for adjustments due to low vacancies at the time of analysis. As such, a higher rate of 3% is applied specifically to apartment units to support the maintenance of a healthy rental vacancy rate over the planning horizon. Table 22 summarizes the growth in units not occupied by usual residents and total housing unit growth by 2051. These units are allocated between the delineated built-up area and designated greenfield area in Component R4.

Table 22: Total Housing Unit Growth by Forecast Period

Planning Period	Household Growth	Growth in Units not Occupied by Usual Residents	Growth in Total Housing Units
2016-2021*	1,750	90	1,840
2021-2051	18,250	1,290	19,540
Total	20,000	1,380	21,380

3.3 Component R3: Allocation of Housing Needs

This component involves the allocation of housing units to lower-tier municipalities and is therefore not applicable to the City of Peterborough as a single-tier municipality.

3.4 Component R4: Housing Supply Potential by Policy Areas

Component R4 requires municipalities to determine the housing supply potential within the delineated built-up area, designated greenfield area and rural area. The growth in housing units are allocated between the delineated built-up area and designated greenfield area based on the 40% minimum annual intensification target in the current official plan to the date of the new official plan and 50% every year thereafter to 2051, as shown in Tables 23 and 24.

Table 23: Forecast Share of Housing Unit Growth by Policy Area

Planning Period	Built-Up Area	Designated Greenfield Area	Rural Area	Total
2016-2021*	40.0%	60.0%	0.0%	100.0%
2021-2051	50.0%	50.0%	0.0%	100.0%
Total	49.1%	50.9%	0.0%	100.0%

Table 24: Forecast Housing Unit Growth by Policy Area

Planning Period	Built-Up Area	Designated Greenfield Area	Rural Area	Total
2016-2021*	740	1,100	0	1,840
2021-2051	9,770	9,770	0	19,540
Total	10,500	10,880	0	21,380

Next, the units not occupied by usual residents are allocated to the delineated built-up area and designated greenfield area (see Table 25). To date, most of the existing units not occupied by usual residents have been observed in the delineated built-up area. However, 44% of new units not occupied by usual residents from 2016 to 2051 are anticipated in the designated greenfield area. This shift is largely due to the university owning approximately 120 hectares of gross land area within the designated greenfield area that are planned to accommodate uses associated with the university, including but not limited to student residences. It is also expected that 3% of apartment units and 1% of all other dwelling type units will be vacant.

Table 25: Forecast Growth in Housing Units Not Occupied by Usual Residents by Policy Area

Planning Period	Built-Up Area	Designated Greenfield Area	Rural Area	Total
2016-2021*	50	60	0	110
2021-2051	720	550	0	1,270
Total	770	610	0	1,380

3.4.1 Housing Supply Potential within the Delineated Built-up Area

The land needs assessment methodology requires that upper- and single-tier municipalities estimate the potential for achieving the intensification target throughout the delineated built-up area. This requires consideration of the housing supply potential in strategic growth areas, such as the urban growth centre where minimum density targets are established in the official plan. The Growth Plan requires that the urban growth centre (i.e., Downtown Peterborough) be planned to achieve 150 residents and jobs per hectare by 2031 or earlier. It is estimated that the current density of the urban growth centre is 110 residents and jobs per hectare. Based on the historic rate of job growth in the urban growth centre, it is expected that residential development will need to address most the shortfall in density by planning to achieve a minimum 1,200 additional units (generally in the form of apartments) by 2031.

Table 26 demonstrates that the 50% intensification target is appropriate based on the estimated intensification unit potential from 2016 to 2051. This estimate is based on issued building permits, current planning applications, secondary suites potential, infill opportunities and redevelopment opportunities in strategic growth areas. Nearly 4,800 units are accounted for through building permits and applications in the planning process, including those at the pre-consultation stage. This represents 45% of the 10,500 total units required to meet the annual intensification target from 2016 to 2051. Of those 4,800 units, 3% are singles/semis, 7% are townhouses and 83% are apartments. Due to the availability of land in the delineated built-up area, it is anticipated that apartments will continue to contribute most of the housing unit growth in the delineated built-up area to 2051.

In May of 2018, the City amended the Official Plan and zoning by-law to permit secondary suites. A total of 50 secondary suites were approved from May 2018 to December 2019 and 90 units in 2020. The anticipated secondary suite growth of 1,300 units in Table 26 is conservative, noting 97% of secondary suites approved from 2018 to 2020 were in the delineated built-up area and properties in the built-up area generally have a higher capability of accommodating up to two additional units (in-home and detached secondary suites). The addition of 1,300 secondary suites to the delineated built-up area represents an annual average of 37 units from 2021 to 2051.

After considering building permit issuances, active development applications/inquiries, and secondary suites, the feasibility of accommodating the remaining 4,400 units from Table 26 in the delineated built-up area was evaluated based on the estimated units from vacant properties, urban design charrette and sites with high redevelopment potential. Based on this review, it is conceivable that the build-out of these sites may yield a net increase between 13,000 to 26,000 units provided adequate servicing capacity is available. However, full build-out of all these sites will likely extend beyond the Growth Plan horizon.

Table 26: Delineated Built-Up Area Intensification Potential

Description	Total Units	Total %
Building Permit Issued	1,050	10.0%
Under Review/Planning Application	3,000	28.6%
Pre-consultation	750	7.1%
Single/Semi-Detached in Neighbourhoods	200	1.9%
Secondary Suites/Additional Residential Units	1,300	12.4%
Student Units	520	5.0%
Townhouses and Apartments in Urban Growth Centre (>90% Apartments)	1,200	11.4%
Townhouses in other Strategic Growth Areas and Vacant/Redevelopment Parcels	700	6.7%
Apartments in other Strategic Growth Areas and Vacant/Redevelopment Parcels	1,780	17.0%
Total	10,500	100.0%

3.4.2 Housing Supply Potential within the Designated Greenfield Areas

Table 27 provides an inventory of the total housing unit potential by dwelling type within the designated greenfield area. The unit forecast by dwelling type for the Vacant/New category is based on achieving an overall minimum density of 50 residents and jobs per hectare by 2051.

Peterborough's delineated built boundary has not been updated by the Minister since it was established in 2008. Accordingly, the designated greenfield area includes some subdivisions that were approved (but not built) prior to 2006 Growth Plan and were therefore built well below the minimum target of 50 residents and jobs per hectare.

To achieve the overall density target, new subdivisions will need to develop at a much higher density than 50 residents and jobs per hectare to compensate for these older, lower density subdivisions. This means that new subdivisions will need to plan for a larger share of townhouses and apartment units than observed in recently approved subdivisions as shown in Table 28. The target density for new subdivisions is calculated in the final component. It is also noted that nearly half of the units allocated to the designated greenfield area from 2016 to 2051 are already accounted for in the under construction, draft approved and under review categories.

Table 27: DGA Inventory and Distribution of Dwelling Units by Type

Status	Singles/ Semis	Rows	Apartments	Other Dwellings	Total Units
Registered/Built/Under Construction	2,520	640	470	0	3,630
Draft Approved	1,750	590	790	0	3,130
Under Review	60	70	120	0	250
Secondary Suites	0	0	0	230	230
Vacant/New (Remaining Unit Growth to 2051)	2,970	1,780	1,190	0	5,930
Total	7,300	3,080	2,570	230	13,170
Total %	55%	23%	20%	2%	100%

Table 28: DGA Housing Unit Growth by Dwelling Type (Occupied by Usual Residents)

Year	Singles/Semis	Rows	Apartments	Other dwellings	Total
2016	1,760	350	180	0	2,290
2051	7,140	2,990	2,340	90	12,560
2016-51	5,380	2,640	2,160	90	10,270

3.4.3 Housing Supply Potential within Rural Areas

As previously mentioned in Component E2, Rural Areas are not applicable within the City of Peterborough.

3.5 Component R5: Community Area Jobs

This component assesses the number of community area jobs to be allocated to the designated greenfield area. This step is required to determine the minimum number of residents and jobs required to meet the density target for the designated greenfield area.

As shown previously in Table 10, over 75% of new population-related jobs will be directed to the delineated built-up area, where there is greater prevalence and access to transit service, major institutions, and public service facilities. The growth of 3,000 population-related jobs from 2016 to 2051 represents a substantial increase from 2016. To date, there has been limited commercial development in the designated greenfield area, despite the availability of commercially zoned sites. In some cases, commercially zoned sites are currently undergoing rezoning to residential.

There are a number of assumptions attributed to the forecasted growth of population-related jobs in the designated greenfield area. First, work at home employment is forecasted based on the projected population. Second, forecasted commercial jobs within subdivisions in the designated greenfield area are established based on the estimated land base and maintaining the general projected proportion of residents to jobs within draft approved subdivisions to 2051. Third, in terms of institutional job growth, there are two planned sites for elementary schools in the draft approved Lily Lake subdivision and proposed plans for a 256-bed long-term care facility. Another significant component of institutional job growth to 2051 is attributed to Trent University, which owns approximately 120 hectares of gross land area in the designated greenfield area. The job forecast for the designated greenfield area therefore accounts for the job potential of the university's lands and associated plans for a long-term care facility, retirement residence, student housing and sustainable village. Table 29 provides a breakdown of the anticipated population-related jobs by type and status.

Table 29: DGA 2051 Population-Related Jobs by Type and Status

Status and Job Type	Jobs	Assumptions
Work at Home		> As a city-wide average, 3.1% of the population work at home for 2051
Built/Under Construction	300	
Draft Approved	240	
Application/Under Review	20	
Other/Growth to 2051	470	
Commercial		> Average population-related employment density is 40 square metres of floor area per employee
Built/Under Construction	330	
Draft Approved	100	
Application/Under Review	0	
Other/Growth to 2051	600	
Institutional		> Elementary schools occupy 2-3 hectare sites within the city and employ approximately 40 workers at each school site on average > Secondary schools occupy 6-8 hectare sites and employ 80 to 110 people at each school site on average. There are currently no sites identified for future secondary schools within the DGA
Built/Under Construction	150	
Draft Approved	90	
Application/Under Review	330	
Other/Growth to 2051	870	
Employment Land	0	> Average employment land employment density is 90 sqm/job
Rural	0	> n/a - only applies to jobs outside settlement areas
Total	3,500	

3.6 Component R6: Need for Additional Land

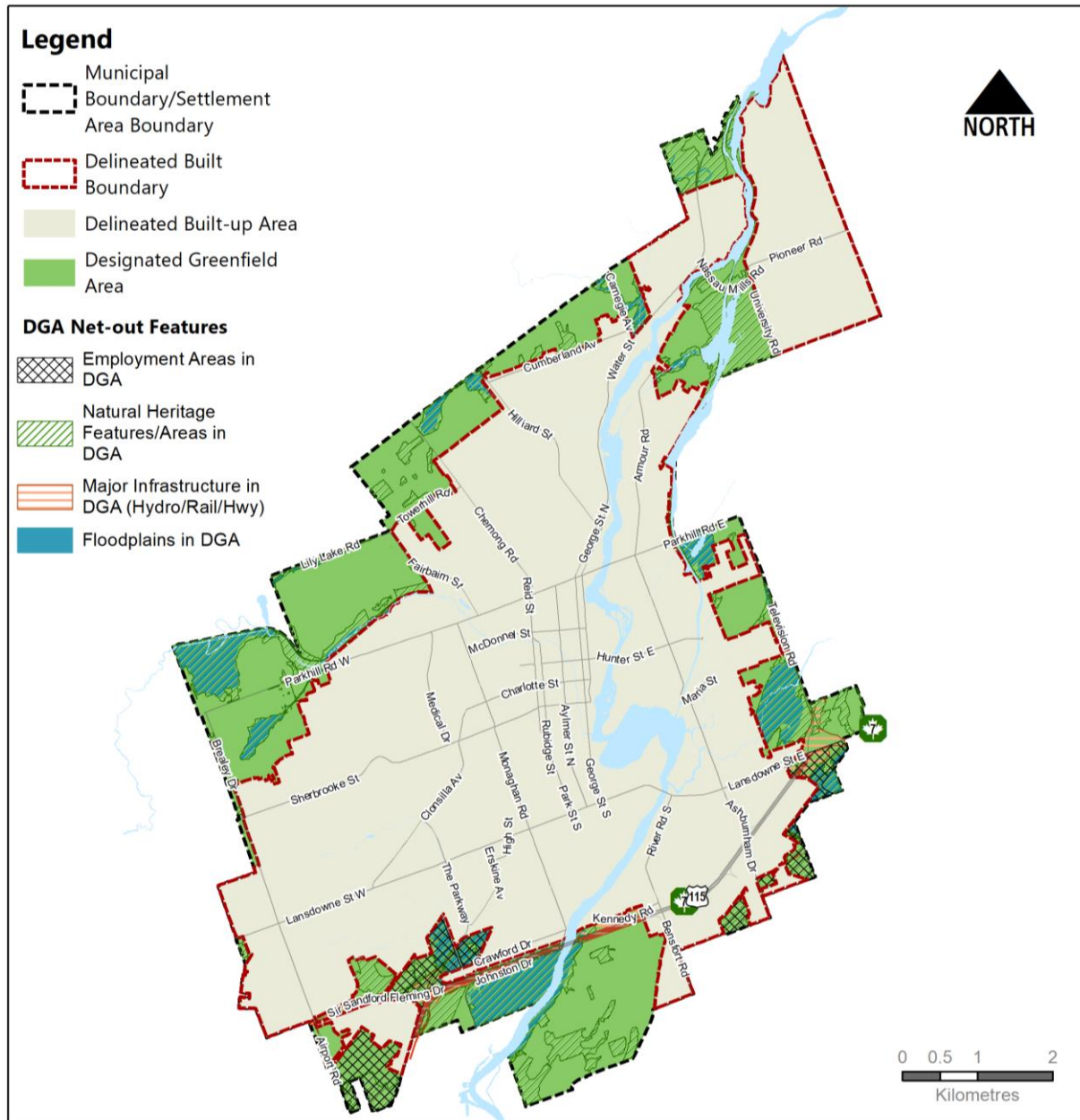
The last component determines the amount of land required to accommodate the forecasted housing units and community area jobs to 2051. This component will also conclude whether there are excess lands (i.e., lands that are not required to accommodate growth and therefore prohibited from development to 2051) or identify the need for a settlement area boundary expansion to accommodate growth. This component will also determine the appropriate density of new development in the designated greenfield area and ensure the minimum density target of 50 residents and jobs per hectare is achieved by the Growth Plan horizon.

Pursuant to Section 2.2.7.3 of the Growth Plan, the density is measured over the entire designated greenfield area excluding natural heritage features and areas, floodplains, rights-of-way for selected infrastructure, employment areas and cemeteries. The net-out features encompass over 46% of the designated greenfield area (see Table 30 for land areas and Figure 3 for mapping). The existing designated greenfield area is 1,060 hectares subtracting the net-outs prescribed in Section 2.2.7.3 of the Growth Plan. Due to the overlap of some net-out features, the total land area for the designated greenfield area is not equal to the sum of the listed net-out land areas. For the purposes of the land needs assessment, lands under both the Prestige Employment and General Employment designations under the new Official Plan are captured under the employment area net-outs. Both residential uses and major institutional uses are not permitted in either designation. The development of major retail facilities or major office uses in either designation will avoid or where avoidance is not possible, minimize and mitigate adverse impacts on industrial, manufacturing or other uses that are particularly vulnerable to encroachment in accordance with Provincial guidelines and Growth Plan Policy 2.2.5.8.

Table 30: Designated Greenfield Area Net-out Calculation

Description/Net-out Feature	Land Area (ha)
Designated Greenfield Area - Gross Land Area	1,971
Less Natural Features and Areas and Floodplains	-770
Less Applicable Infrastructure Rights-of-way	-96
Less Employment Areas	-192
Less Cemeteries	null
Designated Greenfield Area - Net Land Area	1,060

Figure 3: Designated Greenfield Area Net-Out Features



Two different methods have been used to calculate the community area land need. The first method ensures the total density of the designated greenfield is brought to 50 residents and jobs per hectare by the Growth Plan horizon based on the forecasted unit growth by dwelling type from Table 28. Population figures are established for each dwelling type based on the persons per unit (PPU) rate of 2.9 for singles/semis, 2.5 for rows, 1.7 for apartments and 1.5 for accessory units/secondary suites.

As mentioned in Component R4, new subdivisions would need to develop at a much higher density than 50 residents and jobs per hectare to compensate for the older, lower density subdivisions. It is estimated in Table 32 that new subdivisions would need to be planned to achieve a minimum density of 60 residents and jobs per hectare to increase the overall average to 50 residents and jobs per hectare. The total population includes the household population, non-household population and census net-undercoverage rate of 2.45%. It is noted that units not occupied by usual residents are not included in the total population since only residents may be considered for the purpose of achieving the minimum designated greenfield target density target as per Policy 2.2.7 of the Growth Plan. Under these assumptions, it is estimated that 300 hectares of the designated greenfield area are excess of what is required to accommodate community area land need to 2051.

Table 31: Method #1: Total Land Area Based on Planned DGA Density

Status	Total Population	Total Employment	Land Area (ha)
Built/Registered	9,650	780	269
Draft Approved	7,790	430	180
Under Review	800	340	19
Secondary suites	140	0	n/a
New/Vacant	15,740	1,950	290
Total	34,120	3,500	760

Table 32: Method #1 DGA Summary

Description	Land Area (ha)
Community Area Excess Land (hectares)	-300
Density (New/Vacant) (residents + jobs per hectare)	60
Overall DGA Density (residents + jobs per hectare)	50

The second method calculates the community area land need by applying a gross density to each dwelling unit type and population-related employment as described in Table 33. The gross land density accounts for roads, public service facilities, and other uses such as stormwater management facilities. Using this method, 300 hectares are excess of what is required to accommodate community area land need to 2051 and new subdivisions would need to be planned to achieve a minimum density of 60 residents and jobs per hectare (see Table 34).

Table 33: Method #2: Total Land Area Based on Gross Density

Unit Type/Jobs	Units/Job Growth	Gross Density	Land Area (ha)
Singles/Semis	2,970	23 units per net ha - plus 40% for gross density	180
Rows	1,780	40 units per net ha - plus 40% for gross density	60
Apartments	1,190	75 units per net ha - plus 40% for gross density	20
Other dwellings	230	n/a (accommodated in single/semis and rows category)	0
Jobs	1,480	30% building coverage and 40 sqm floor area per employee - plus 25% for gross density	30
Total (new/vacant)	7,650		290

Table 34: Method #2 DGA Summary

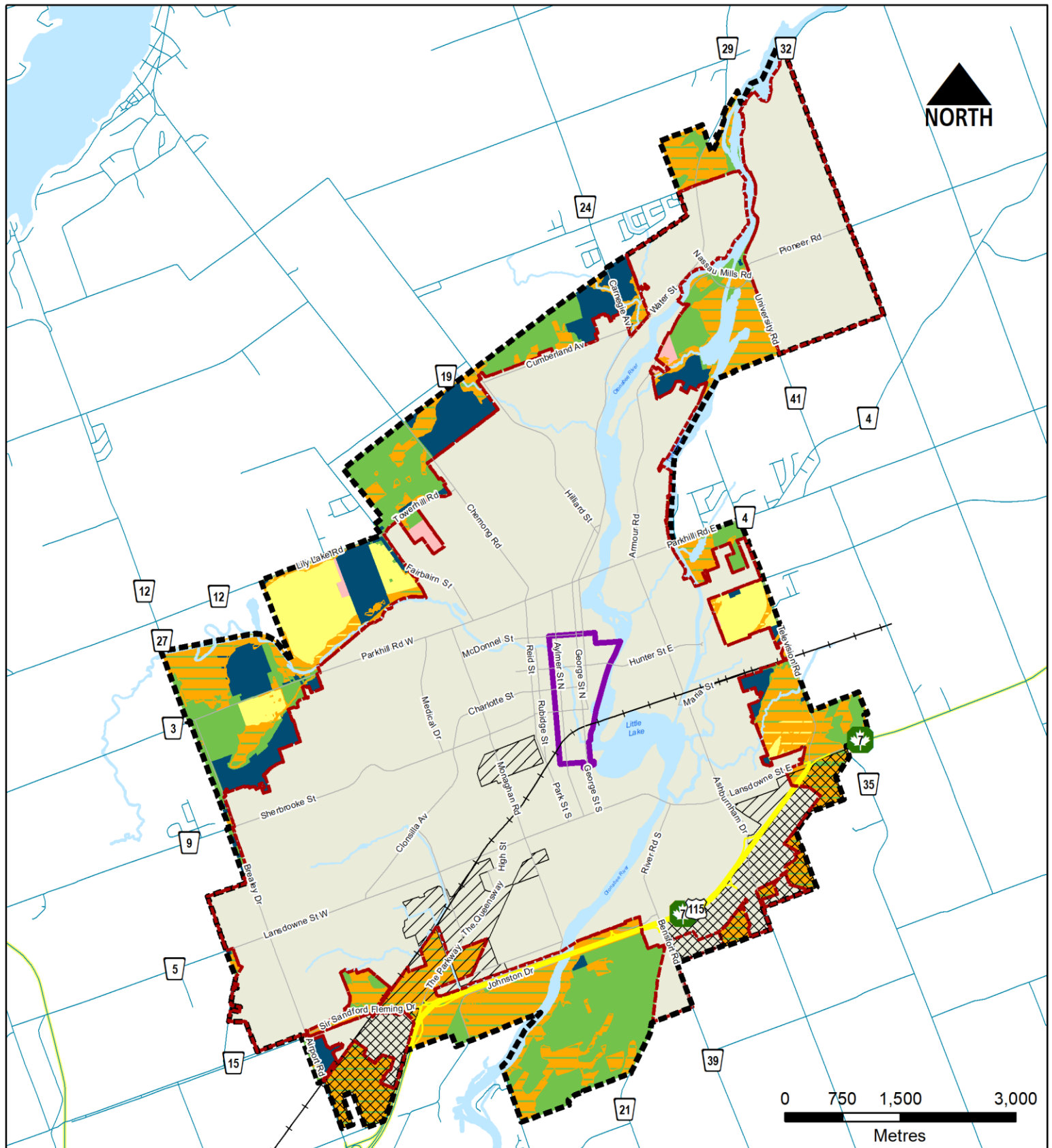
Description	Land Area (ha)
Total Land Area (built, draft approved + new/vacant) (hectares)	760
Community Area Excess Land (hectares)	-300
Density of New/Vacant (residents + jobs per hectare)	60
Overall DGA Density (residents + jobs per hectare)	50

Based on both methods, there are 300 hectares of community area in the designated greenfield area that may be identified as excess lands if new subdivisions in the designated greenfield area be planned to achieve a minimum density of 60 residents and jobs per hectare and an overall density of 50 residents and jobs per hectare is achieved. However, 110 hectares are required for new employment area (Component E4). As such, there are 190 hectares considered excess in the settlement area boundary.

4.0 Conclusion

Based on the land needs methodology outlined by the Province, there are approximately 190 hectares of land in the designated greenfield area considered excess and will not be required to accommodate growth to 2051. This figure accounts for the 290 hectares of community area land need in the designated greenfield area and 110 hectares of land need for employment area. These land need figures require that the designated greenfield area be planned to achieve an overall minimum density of 50 residents and jobs per hectare and employment areas be planned to achieve a minimum density of 25 jobs per hectare.

The reliability of the conclusions from the land needs assessment are contingent on the accuracy of the data inputs over the long term. As such, the City will need to periodically monitor several data figures required for this land needs assessment throughout the Growth Plan horizon – notably, units not occupied by usual residents, post-secondary student enrolment and housing need, job counts, employment land use split, density of employment areas and forecasted change in employment land jobs. It is also noted that lands that have not yet been identified as habitat for endangered and threatened species, wildlife habitat, having archaeological potential, natural heritage feature minimum vegetation protective zones, or other development constraints may also have potential implications on the availability of developable lands to 2051.



Appendix 1: Land Needs Assessment Supplementary Map

	Delineated Built Boundary		Delineated Built-up Area	DGA Status		Draft Plan Approved
	Municipal Boundary/Settlement Area Boundary		Urban Growth Centre		Registered/Built/Under Construction	
	General Employment Designation		Designated Greenfield Area		Under Review	
	Prestige Employment Designation		Designated Greenfield Area Net-Out Features			
				Major Transportation		
					Railway	
					Provincial Highway	
					Highway Ramp	
					City Arterial & Collector Roads	
					County Roads	

Last Revised: June 2021