

City of Hamilton Land Needs Assessment to 2051
Technical Working Paper – Summary of Results
March 2021

Contents

Introduction	2
Growth Context to 2051	10
Community Area Land Need	17
Employment Area Land Need	36
Conclusions	57

Section 1: Introduction

The Land Needs Assessment and 'GRIDS 2'

The City of Hamilton has retained Lorius and Associates, in association with Hemson Consulting Ltd., to prepare an assessment of urban land needs over the period to 2051. The Land Needs Assessment (LNA) is required to support the update of the Growth Related Integrated Development Strategy (the GRIDS 2 update) and the Municipal Comprehensive Review (MCR) for the period to 2051.

The LNA has been prepared in accordance with the *Growth Plan for the Greater Golden Horseshoe: A Place to Grow (Growth Plan, 2020)* and updated method for completing the analysis set out in the report: *Land Needs Assessment Methodology for the Greater Golden Horseshoe (2020)* (the "Provincial method" or "mandated method"). The mandated method (2020) replaces the previous 2018 version. In accordance with the new Provincial method, the LNA for the City of Hamilton includes:

- A forecast of population, housing and employment by type to 2051;
- Housing market and trends analysis;
- Residential intensification market demand analysis;
- Employment and economic analysis; and
- Designated Greenfield Area (DGA) analysis.

The LNA is undertaken based on the results of the above technical inputs, *Growth Plan* policy directions and required components of the mandated method for analysis. The results are summarized in this Technical Working Paper. The City of Hamilton continues to engage with Provincial staff to review the results of the GRIDS 2 update. A process of public consultation will also be undertaken as part of the approval process for the MCR and implementing official plan amendment(s)(OPA).

As a result, the results of the LNA may be subject to revision depending on feedback received through the process of public consultation and Provincial review. The results may also need to be revisited at the MCR OPA stage to update for new information such as building permits, housing completions, employment land conversions or other economic factors that may have changed.

Section 1: Introduction

Economic and demographic context for analysis

Positive Long-Term Economic Outlook for the GGH

1

- Notwithstanding the short-term impacts of the COVID-19 Pandemic, the long-term economic outlook for the Greater Golden Horseshoe (GGH) is positive.
- The Greater Toronto and Hamilton Area (GTHA) will continue to attract international migrants that drive population growth.
- Rates of long-term economic growth will be generally sufficient to absorb the expanding labour force through migration.

Shifts in the Housing Market to Higher Density Forms

2

- Several factors have led to a sharp rise in housing prices over the last decade.
- A corresponding shift has occurred in the proportion of people living in denser and more affordable housing forms.
- Intensification has become more prevalent throughout the GTHA, including in the City of Hamilton, though more working from home may affect the demand for smaller living spaces going forward.

Changes in the way Office Space is Being Used

3

- Increased mixing of work activities, office sharing and automation are changing the way office space is being used.
- 'Offices' are increasingly occupying non-office forms: "flex space", co-working and industrial multiples.
- Trends are blurring the lines between traditional industrial and office use with implications for density and land use within employment areas.

Continued Demand for Greenfield Employment Land

4

- The economic outlook anticipates greater success in accommodating employment land activities through intensification.
- However, the availability of greenfield sites with good highway access will continue to be the primary driver of demand.
- Growth in e-commerce and weaknesses in global supply chains revealed by COVID-19 will support demand for local manufacturing, storage, distribution and logistics space.

Section 1: Introduction

Approach to the analysis

The assessment of urban land needs is undertaken by comparing a forecast of future demand for housing and employment to the current land supply. Within the context of PPS and *Growth Plan* policy directions to encourage a more compact urban form, conclusions are then drawn on the need, if any, for additional lands over the forecast horizon. Land needs are assessed for two key areas:

- **Community Areas** – where the vast majority of housing required to accommodate forecasted population will be located, as well as the majority of population-related jobs, most office jobs and some employment land employment jobs. Community areas include the Delineated Built-up Areas and the Designated Greenfield Area (excluding employment areas); and
- **Employment Areas:** where most of the employment land employment (employment in industrial-type buildings) jobs are, as well as some office jobs and some population-related jobs, particularly those providing services to the employment area. Employment Areas may be located in both delineated built-up areas and the designated greenfield area.

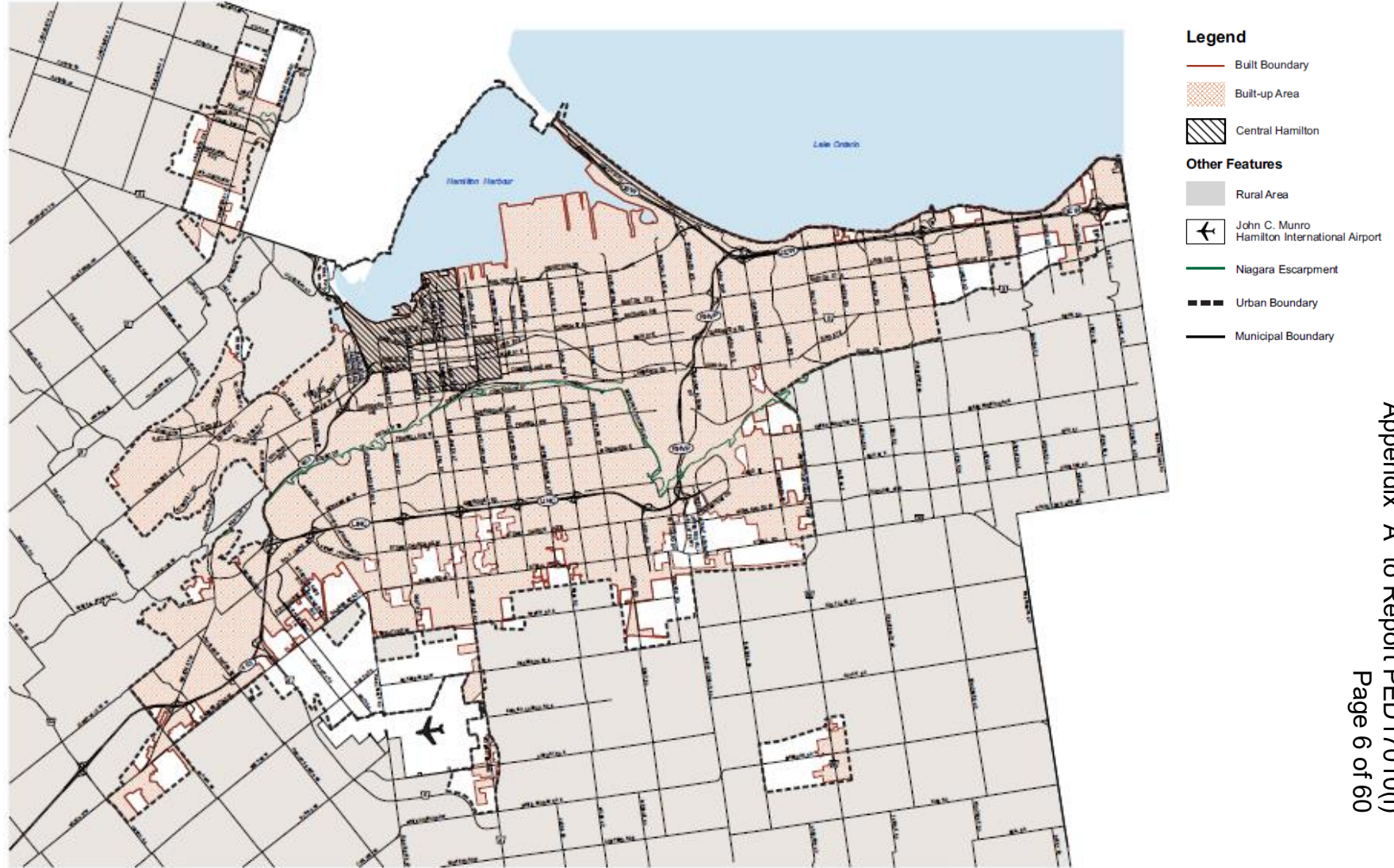
Important Terminology for Understanding the Approach

The **Delineated Built-up Area** is defined as the area that was already built when the 2006 *Growth Plan* first came into effect and is illustrated on the map on the following page. The **Designated Greenfield Area** is defined as lands within settlement areas (lands within the urban boundary) but outside of delineated built-up areas, designated in an official plan for development and required to accommodate growth over the planning horizon. The **Rural Area** is all lands outside the urban boundary, including Prime Agricultural Areas and existing employment land uses: the **Hamilton International Airport (HIA) facility** is located within the City's Rural Area.

The starting point for the analysis is the population and employment forecasts for the upper- and single-tier municipalities that are shown in **Schedule 3 of the *Growth Plan (2020)***. These are the minimum population and employment **forecasts that must be used** for long-range planning and growth management by all municipalities in the GGH, including the City of Hamilton. Higher forecasts may be considered as part of the MCR, however lower forecasts are not permitted.

Section 1: Introduction

The Built-Up Area

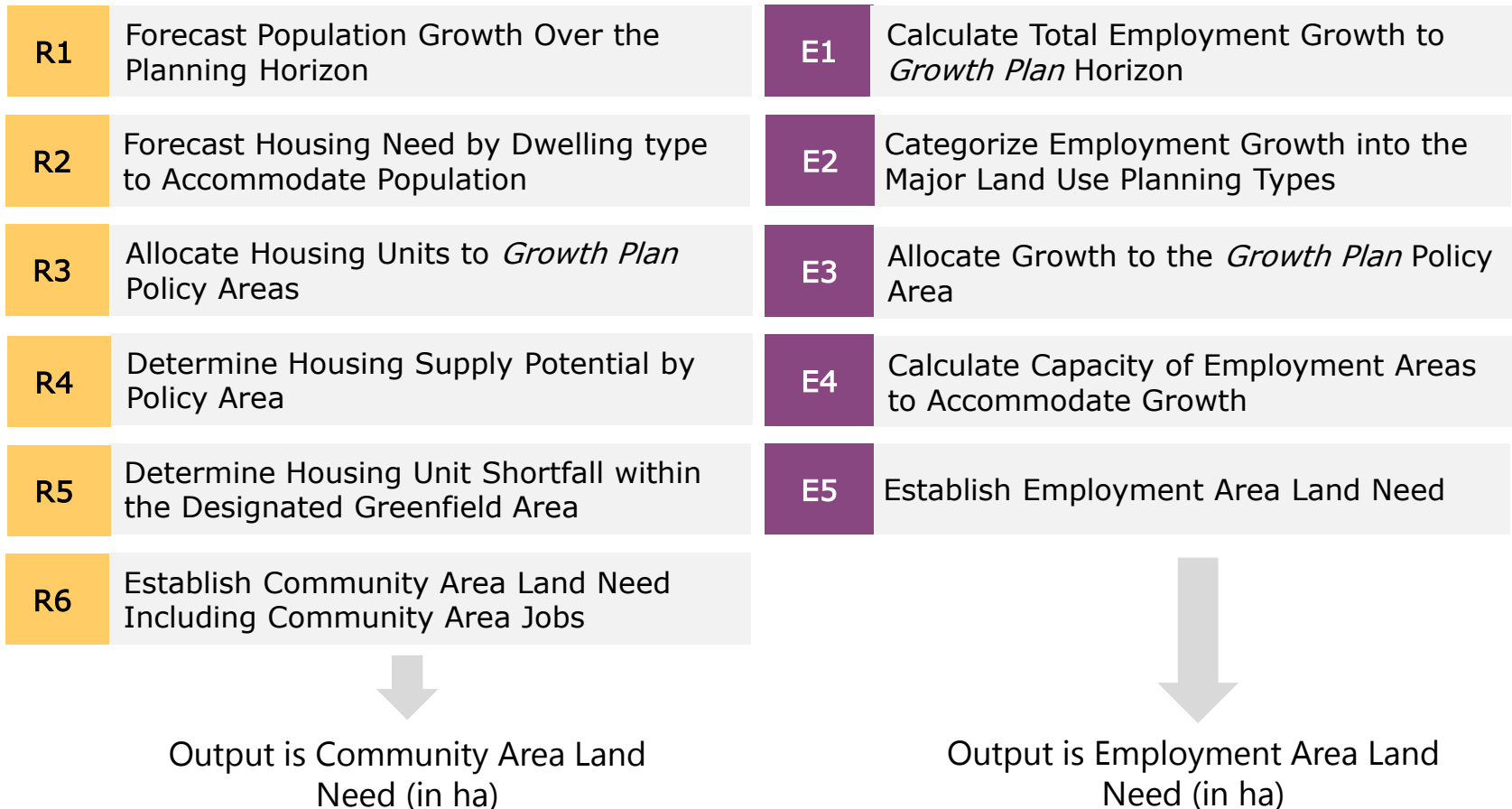


Source: Urban Hamilton Official Plan Appendix G - Boundaries Map

Section 1: Introduction

Method for land needs assessment

The analysis is undertaken according to the key components involved in the Provincial method for Community Area and Employment Area land need assessment. As described in the Provincial method report, there can be flexibility in the sequence of the LNA analysis as long as all components are completed. The sequence taken in this report is summarized below for Community (R1-R6) and Employment (E1 –E5) areas.



Section 1: Introduction

Key influences on land need under the *Growth Plan*

Within a *Growth Plan* policy context, there are two key influences on land needs. The first relates to the minimum proportion of future growth that is to be accommodated through **intensification**. The second relates to the **density of new development** to be anticipated in greenfield locations.

The 50% Intensification Target

The *Growth Plan* requires that by 2015 and each year thereafter, “a minimum of 50% of all residential development occurring annually... will be within the built up area” (Section 2.2.2.1a). This policy provides direction on the minimum proportion of new residential development to occur through intensification and refers to a **total number of new units added**, but not number of people, overall density, specific unit types or units gained or lost through changes in occupancy of the existing stock. The **intensification target has a strong influence** on the LNA results because it limits both the balance of units (and associated land) allocated to the DGA and the different types of units available to satisfy demand to 2051.

The Greenfield Density Target (50 Residents and Jobs Combined per ha)

The *Growth Plan* states that the minimum density target applicable to the DGA of each upper-and single-tier municipality...is not less than 50 residents and jobs combined per ha” (Section 2.2.7.2). Under the new LNA method, the **greenfield density target is no longer a policy input**, but a minimum threshold for conformity purposes. The density target is measured over the entire DGA of each upper- or single-tier municipality excluding natural features identified in local or Provincial plans, applicable rights-of-ways and cemeteries. The target does not include the designated Employment Areas, which are treated separately.

No Mandated Density and Intensification Targets for Employment Areas

Under the Provincial method, Employment Area land needs are based on an analysis of the economic activities likely to locate on those lands and approximate densities at which they are anticipated to develop. A **market-based approach is taken** to recognize the importance of economic activities to the development of ‘complete communities’ and the challenges associated with changing the pattern of employment growth through *Growth Plan* and associated planning policy directives.

Section 1: Introduction

Scenarios provide a range of future land need

Three scenarios of land need have been prepared. The scenarios are varied by changing the *Growth Plan* intensification target and density of new development by unit type, which are the primary determinants of land need. It is worth reiterating that the under the new Provincial LNA method, **the greenfield density target is an output of the LNA** depending on the intensification rate and unit densities applied to the analysis. The land need scenarios and results are summarized below.

<p><i>Growth Plan Minimum</i></p> <p>The <i>Growth Plan Minimum</i> scenario is based on applying the minimum intensification target in the <i>Growth Plan</i>, which is at the high end of the range of market demand. It is considered to be a suitable aspirational goal.</p>	<p><i>Increased Targets</i></p> <p>The <i>Increased Targets</i> scenario is based on achieving even higher rates of intensification and greenfield density. It may be a challenge to meet all segments of housing demand towards the end of planning horizon to 2051.</p>	<p><i>Ambitious Density</i></p> <p>The <i>Ambitious Density</i> scenario is based on achieving still higher rates of intensification and greenfield density. This scenario would require careful monitoring and reporting on progress to ensure a balanced housing supply to 2051.</p>
<p>50% Intensification to 2051 2,190 gross ha required = 65 residents & jobs/ha in new greenfield areas</p>	<p>50% Intensification to 2031, 55% to 2041, 60% to 2051. 1,630 gross ha required = 75 residents and jobs/ha</p>	<p>50% Intensification to 2031, 60% to 2041, 70% to 2051. 1,340 gross ha required = 77 residents and jobs/ha</p>



To provide further context for the scenarios, a “Current Trends” analysis has also been prepared to show the results of a 40% intensification target, consistent with the approach taken in the *Residential Intensification Market Demand Analysis* (December 2020). The results indicate an even higher land need – **3,440 gross ha** – and would require that the City request an alternative target under the *Growth Plan*. Employment Area land need (mainly industrial and business park development lands) is held constant for all the scenarios since it is primarily the pattern of housing growth that the *Growth Plan* seeks to change through policy.

Section 1: Introduction

Structure of this report

The report that follows provides the results of the analysis, including Community Area and Employment Area land need, in accordance with the mandated Provincial method. It is structured as five sections:

- **Section 1 sets out the purpose** of the assignment, approach taken to the analysis and the key influences on land need under the *Growth Plan*;
- **Section 2 provides the growth context**, including the population and housing unit growth anticipated, the role of residential intensification, the employment outlook and trends in land and building space requirements, especially office and industrial-type uses;
- **Section 3 summarizes the results of the Community Area LNA** according to the mandated method for analysis. A minimum of 1,340 gross developable ha is required to accommodate growth over the period to 2051.
- **Section 4 summarizes the results of the Employment Area LNA**. The analysis shows that land supply and demand are largely in balance, with no additional lands required for current planning purposes. This result is due largely to the unanticipated lag in employment growth experienced across the GTHA over the 2011 – 2016 period. Employment growth had been accelerating in the post-2016 period until the COVID-19 Pandemic began, leading to significant job losses in early 2020; and
- **Section 5 provides our conclusions**, including a summary of total urban land needs over the period to 2051 and implications for the current UHOP, GRIDS 2 and the MCR process.

Growth Plan (2020)

The Provincial vision for growth is that Hamilton will play an **expanded economic and demographic role** within the regional metropolitan area (GGH) over the planning horizon to 2051

Community Area Land Needs

Under the mandated method for analysis a **minimum of 1,340 gross developable ha** (*Growth Plan* definition) is required depending on the unit density and intensification targets involved.

Employment Area Land Need

No additional lands are required. Forecast demand and land supply are largely in balance. A small surplus is shown over the planning horizon to 2051.

Section 2: Growth Context to 2051

Population forecast to grow significantly

The *Growth Plan (2020)* sets out the Provincial vision for growth in the GGH, including: a strong economy, cleaner natural environment and the achievement of complete communities with access to transit. A key element of the Provincial vision is a **set of forecasts that must be used**, at a minimum, for planning and growth management in the GGH, including Hamilton (Section 5.2.4). The historic and forecast minimum *Growth Plan* population forecast for 2051 is shown below in Table 1.

Table 1

City of Hamilton Historic and Forecast Population

Components of Population	2001	2011	2021	2031	2041	2051
Total Population (with undercount)	510,140	535,000	584,000	652,000	733,000	820,000
Growth last 20 years (2001-2021)			73,860			
Growth next 20 years (2021-2041)					149,000	
Growth next 30 years (2021-2051)						236,000

Source: Hemson Consulting Ltd. based on Statistics Canada Census data and *Growth Plan* Schedule 3 forecasts for 2051. Figures for 2001, 2011, 2021, 2031 and 2041 are from the base forecast models used by Hemson Consulting Ltd. to prepare the report: *Greater Golden Horseshoe: Growth Forecasts to 2051* (the "Hemson forecast report", August 2020). Figures include the Census undercount: i.e. those people that are missed in the Census, or counted twice, or otherwise should not have been counted.

As shown in Table 1, under the *Growth Plan* the City of Hamilton is forecast to achieve a total population of 820,000 in 2051. This forecast is for a significant amount of growth relative to the past: **twice as much over the next 20 years** than the last 20 years, and beyond to 2051. The reason is that, from a regional planning perspective, the *Growth Plan* anticipates an expanded economic and demographic role for the City of Hamilton over time, along with other priority centres in the western GGH.

As described in the updated *Growth Plan* forecast report, the **long-term growth outlook remains positive** notwithstanding the impacts of the COVID-19 Pandemic. In general, both the GTHA and Outer Ring are anticipated to experience rates of long-term economic growth sufficient to absorb the expanding labour force created through migration. This expectation is consistent with the Ministry of Finance's *Ontario's Long Term Report on the Economy (2017)* which remains a sound economic outlook.

Section 2: Growth Context to 2051

Forecast translates into significant new housing units

The *Growth Plan* population forecast translates into significant demand for new housing units, as shown in Table 2 below. In accordance with the mandated method, the housing forecast is based on applying household formation rates to the forecast of population growth by age cohorts as well as age-specific propensities to occupy different housing unit types. The overall housing forecast associated with the *Growth Plan* population forecast to 2051 is shown below in Table 2.

Table 2

City of Hamilton Historic and Forecast Housing Growth

Components of Housing	2001	2011	2021	2031	2041	2051
Occupied Housing Units	188,140	203,800	222,540	258,100	295,170	332,860
Growth last 20 years (2001-2021)			34,400			
Growth next 20 years (2021-2041)					72,630	
Growth next 30 years (2021-2051)						110,320

Source: Hemson Consulting Ltd. based on Statistics Canada Census data and *Growth Plan* Schedule 3 forecasts for 2051. Figures for 2001, 2011, 2021, 2031, 2041 and 2051 are from the base forecast models used by Hemson Consulting Ltd. to prepare the report: *Greater Golden Horseshoe: Growth Forecasts to 2051* (August 2020). Figures are units occupied by usual residents, which is different than the “undercount” noted in Table 1 and distinct from “Total Private Dwellings” reported by the Census that includes vacant units, seasonal and recreational units and/or units occupied by students that report themselves as living elsewhere.

As shown in Table 2, and similar to population, the housing forecast is for a significant amount of growth relative to the past. Under the *Growth Plan*, the City of Hamilton is forecast to grow to a total of 332,860 housing units in 2051. This forecast translates into more than **twice the number of new units** over the next 20 years than were completed in the last 20 years, and beyond to 2051. Again, this outlook reflects *Growth Plan* expectations for an expanded economic and demographic role for the City of Hamilton over the planning horizon. More specifically, the *Growth Plan* forecasts are structured as a share of the GGH housing market taking into account land supply, especially in southern Halton and Peel regions where rapid growth continues. Over time, as the supply of available development lands in these locations becomes increasingly constrained, Hamilton will be effectively drawn ‘closer’ to these established communities in the GTA-west and demand for housing will increase considerably.

Section 2: Growth Context to 2051

Outlook for residential intensification is bright

Housing Market has Shifted to Smaller and More Affordable Options

As described in more detail in the *Residential Intensification Market Demand Analysis* report (December 2020) some important shifts have occurred in the pattern of housing demand across the GGH, especially related to demand by unit type. A combination of market, pricing and policy-based factors has led to serious affordability challenges and, in turn, a shift to denser and more affordable housing forms within the GTHA combined with increased demand for new housing in less expensive markets in the Outer Ring and beyond.

Large-Scale Intensification is Emerging in other GTHA Municipalities

The shift towards more affordable housing forms, combined with emerging trends in lifestyle and employer preferences, among other factors, is one of the major reasons for the well-documented surge of new development in central Toronto. Consistent with long-standing demographic patterns, the City of Toronto will continue to play a major role in accommodating apartments: however, it is no longer the only part of the market. Large-scale intensification has started to emerge outside Toronto in more urbanized areas such as southern York and Halton Regions and the City of Hamilton.

Growth Plan Target Represents a Rapid and Substantial Increase in Intensification

As noted, under the *Growth Plan*, municipalities in the GGH are required to plan for a minimum proportion of future growth through intensification: 50% of new housing units in the case of the City of Hamilton and other major urban centres in the GGH such as the Cities of Barrie, Brantford and Guelph.

There is no question that recent housing market trends point to a strong future for intensification. And it is also clear that the City of Hamilton is in an attractive position to shift historic patterns of growth towards denser and more urban forms. However, it is important to understand that the *Growth Plan* target embodies a major shift in the nature of housing demand that will be a challenge for most municipalities to achieve, including Hamilton. So although characterized as “minimum”, the *Growth Plan* target is at the **high end of the range of demand** from a market perspective. For the City of Hamilton it represents a rapid and significant increase in the amount of growth to occur through intensification and a substantial change to the profile of future housing demand in favour of apartments.

Section 2: Growth Context to 2051

Long-term economic outlook is positive

Notwithstanding the current COVID-19 Pandemic situation the broad economic outlook for the GGH remains positive. As described in the updated *Growth Plan* forecast report, overall growth is anticipated to return to pre-pandemic expectations within three years along with associated growth in employment and income. The employment forecast for the City of Hamilton within this context is shown below in Table 3.

Table 3

City of Hamilton Historic and Forecast Employment

Components of Employment	2001	2011	2021	2031	2041	2051
Total Employment	205,100	216,900	238,000	271,000	310,000	360,000
Growth last 20 years (2001-2021)			32,900			
Growth next 20 years (2021-2041)					72,000	
Growth next 30 years (2021-2051)						122,000

Source: Hemson Consulting Ltd. based on Statistics Canada Census data and *Growth Plan* Schedule 3 forecasts for 2051. Figures for 2001, 2011, 2021, 2031 and forecast to 2051 are from the base forecast models used by Hemson Consulting Ltd. to prepare the report: *Greater Golden Horseshoe: Growth Forecasts to 2051* (August 2020). Employment includes usual place of work, work at home and no fixed place of work employment.

As discussed in the *Residential Intensification Market Demand Analysis* report (December 2020) the prior *Growth Plan* forecasts prepared in 2012 overestimated population and employment growth in Hamilton as well as all other upper and single-tier municipalities, except the City of Toronto. The main reason for the shortfall in growth is that the forecasts prepared for 2011 to 2016 did not anticipate the degree of out-migration to western Canada from Ontario or Ontario's decline in its national share of immigration.

In the post-2016 period, however, migration patterns had returned to historic averages and growth was accelerating until the COVID-19 Pandemic began in early 2020. For Hamilton, the employment forecast is for **a total of 360,000 jobs in 2051**. The growth outlook is predicated on continued diversification of the local economy, the revitalization of central City employment areas and the emergence of small major office clusters supported by well-located and extensive employment areas throughout the City.

Section 2: Growth Context to 2051

Outlook structured by major land use planning types

The approach taken to forecasting employment growth for the purposes of the LNA is based on four land use planning-based types: population-related, major office, employment land and rural-based employment. The four employment types are described below.

Population-Related Employment	Major Office Employment	Employment Land Employment	Rural-based Employment
Jobs that exist primarily to serve the resident population, including retail, education, health care, local government and work-at-home employment, the vast majority of which are located in community areas.	Jobs contained within free-standing buildings more than 20,000 net square feet (1,858 m ²) in size. This definition differs from the size threshold of 4,000 m ² used in <i>Growth Plan</i> policy for other planning purposes.	Jobs accommodated primarily in industrial-type buildings. The vast majority are located within business parks and industrial areas. However, some jobs can be found in older community areas and rural locations.	Jobs scattered throughout rural lands that typically include agriculture-related uses, small manufacturing or construction businesses run from rural properties and some associated retail, service or commercial uses.

From an employment perspective, most of the lands required to accommodate growth will be for employment land employment. The **LNA term “Employment Area” is different**, and refers to the geographic areas typically planned to be occupied by, but not necessarily used exclusively for, employment land employment. Employment Areas tend to be where most employment land employment (i.e. jobs in industrial-type buildings) are located but also contain limited major offices, in some cases, and population-related employment, particularly those providing services to the designated Employment Area.

Population-related employment tends to be accommodated in existing locations (such as the Downtown and other nodes) and through the normal course of secondary planning for new residential communities. Major office employment occurs under a unique market dynamic and at extremely high densities, so requires very little urban lands. Rural-based employment, while an important part of the City’s economy, is a relatively small part of the employment base and forecast to grow marginally over the planning horizon.

Section 2: Growth Context to 2051

Land and building space requirements are evolving

From a land needs perspective, there have been some relevant trends in the recent pattern of land use and real estate development, especially for major office and industrial-type buildings. Some of these trends have been accelerated by the COVID-19 Pandemic in the short-term, however the extent to which these represent a permanent shift remains unclear.

Market Shift for Major Office Development to Downtown Toronto

One of the key features of recent growth in the GTHA has been the surge of major office development in downtown Toronto. This concentration of offices generally had the effect of reducing new space demand in other parts of the GTHA. Notwithstanding current COVID-19 effects, the short-term attraction of downtown Toronto is likely to remain. Over the longer term, however, the major office market is expected to cycle back to a more even balance between Toronto and established suburban nodes in southern York, Peel and Halton regions as well as emerging markets in Durham and Hamilton.

Office Work Increasingly Occupying Non-Office Forms

Partly in response to the recent concentration (and rising cost) of major office space, an emerging trend in many communities outside the City of Toronto has been a broadening of the built forms in which office uses are choosing to locate, including co-working, flex space and industrial multiples. The prevalence of this type of space has become more widespread across the GTHA, including Hamilton, and may be accelerated by the COVID-situation as users explore new office models. This trend along with the attraction of suburban office markets from a real estate cost perspective bodes well for the future of office growth.

Pattern of Change in Employment Areas More Complex

Trends in the locational preference of office use are 'blurring' the lines between traditional industrial and major office uses, with resulting impacts on density and land needs. While densities in some areas may increase as a result of the growing integration of different functions, this effect is being tempered by more land-extensive development elsewhere, particularly in newer employment areas focussed on the fulfilment and distribution of e-commerce activity. For the City of Hamilton, the overall density impacts depend on the nature of the individual area and types of economic activities being carried out.

Section 2: Growth Context to 2051

Demand for Employment Areas will remain strong

Notwithstanding recent shifts in the pattern of development, significant growth is still anticipated for the range of economic activities typically accommodated in Employment Areas. And although the structure of employment in the GTHA and City of Hamilton continues to shift gradually away from traditional economic sectors, Employment Areas are still required to accommodate new development.

Grown in 'E-commerce' Driving Demand for Warehousing and Distribution Facilities

Growth in e-commerce has driven a surge in demand for warehouse, distribution and logistics space. There is no evidence this pattern will change and has been accelerated by the COVID-19 Pandemic. These trends are driving demand for increasingly larger, land-extensive and low-density facilities in greenfield locations (sometimes referred to as "Big Bomber" warehouses). Although the LNA anticipates some greater success in accommodating employment land growth through intensification, the availability of large sites with good transportation access, especially 400-series highways, will remain the primary driver of demand.

Many Service Sector Uses Also Occupy Industrial Space

Contrary to popular perception, not all Employment Areas are dominated by the goods-producing sector. Recent years in the GTHA have seen significant growth in service-type activities within Employment Areas, reflected in part by the rise of the 'flex' space market and adaptive re-use in older more mature industrial areas. As these sectors grow there will be continued demand for space in Employment Areas beyond the 'traditional' manufacturing and distribution typically associated with industrial buildings.

Manufacturing will Continue to Play a Role

In our view, manufacturing will continue to play a role in new building space requirements, although the overall amounts are unclear. Some sectors have the potential to outpace expectations, especially as rates of technology adoption and the economics of small-scale local production improve. Two of the more likely outcomes arising out of the COVID-19 Pandemic are: first, a reshoring of some industries (medical supplies for instance); and second, increased automation to lower production costs and limit vulnerability to health risks. The outlook for the goods producing sector is more positive under this scenario, but likely with fewer employees (and therefore at lower densities) relative to the past.

Section 3: Community Area Land Need

Overview of mandated steps in the analysis

This section summarizes the results of Community Area land need analysis, within the broad growth context described in Section 2. The analysis is undertaken according to the mandated components of the Provincial method, shown again below for convenience. Key data sources and inputs to the analysis are summarized at right, with additional notes and commentary provided for the tables that follow.

Key Data Sources and Inputs

1. 2016 base population and household information are from Statistics Canada, including net under-coverage and non-household population rates. Total 2051 population is the *Growth Plan* forecast (2020).
2. Estimated 2021 housing units and population and forecast total housing units to 2051 are provided by Hemson Consulting Ltd. based on Statistics Canada and Canada Mortgage and Housing Corporation (CMHC) housing market information.
3. The allocation of housing units by *Growth Plan* policy area is based on a typical housing mix inside and outside the built-up area and the specific intensification target applied to the analysis.
4. Housing supply potential is based on information from the City of Hamilton Geographic Information System (GIS), land use and building permit tracking systems.
5. The housing unit shortfall within the DGA is determined based on a comparison of housing supply (R4) to forecast housing demand (R3) by unit type.
6. Community Area land need is determined by applying appropriate density factors to the unit shortfall by type and taking into account population-related employment, in accordance with the mandated method for analysis. Total DGA density is estimated based on PPU factors from the 2019 Development Charge (DC) Background Study prepared by Watson & Associates.

R1	Forecast Population Growth Over the Planning Horizon
R2	Forecast Housing Need by Dwelling type to Accommodate Population
R3	Allocate Housing Units by <i>Growth Plan</i> Policy Area
R4	Determine Housing Supply Potential by Policy Areas
R5	Determine Housing Unit Shortfall within the Designated Greenfield Area
R6	Establish Community Area Land Need Including Community Area Jobs

Section 3: Community Area Land Need

R1

Step R1 Forecast population growth over the planning horizon

The first component in the assessment of Community Area Land Need is the forecast of population over the period to 2051, shown previously in Table 1. In accordance with the *Growth Plan* Schedule 3 forecasts (2020) Hamilton is forecast to achieve a **2051 population of 820,000** including the Census net undercoverage.

Step R2 Forecast Housing Need by Dwelling Type

R2

The *Growth Plan* population forecast translates into demand for approximately **110,320 new housing units** over the 2021-2051 period, shown previously in Table 2. In accordance with the mandated method, the housing forecast is based on applying household formation rates to the forecast of population growth by age cohorts as well as age-specific propensities to occupy the four main housing unit types established in the updated *Growth Plan* forecasts: single and semi detached, rowhouse, accessory and apartment units. The result is a **market-based housing need forecast by dwelling type** shown below in Table 4, with single-family dwellings (single and semi detached) the predominate form at 50% of the forecast growth.

Table 4

City of Hamilton Market-Based Housing Unit Need by Dwelling Type

Census Year	Single and Semi	Rows	Accessory Units	Apartment Building	Total
2021	135,360	29,370	3,940	53,880	222,540
2031	154,120	37,780	4,750	61,450	258,100
2041	173,180	47,110	5,680	69,200	295,170
2051	191,370	56,970	6,700	77,820	332,860
Growth 2021-2051	56,020	27,600	2,760	23,940	110,320
Share	50%	25%	3%	22%	100%

Source: Hemson Consulting Ltd. based on Statistics Canada Census, Annual Demographic Estimates and the *Growth Plan* Schedule 3 forecasts for 2051. "Single and Semi" includes single detached and semi detached houses as well as movable dwellings as defined by Statistics Canada. Rows are rowhouses as defined for the Census. Accessory units are apartment units added to an existing single or semi-detached house, either attached or not to the existing dwelling. Apartments comprise all apartment buildings whether greater than or less than 5 storeys in height.

Section 3: Community Area Land Need

Step R2 Forecast Housing Need by Dwelling Type

R2

As shown in Table 4, the market-based mix of housing is characterized largely by ground-related units; defined as single and semi-detached units and rowhouses. As summarized in Table 5 below, roughly three quarters of the forecast housing growth is for ground-related versus apartment units. Accessory units are apartments added to an existing single, semi-detached or rowhouse rather than duplex units as defined by the Census. This change was introduced in the updated *Growth Plan* forecasts to more accurately reflect how these units are treated from a land use planning perspective.

Table 5

City of Hamilton Ground-Related versus Apartment Unit Growth

Census Year	Ground-Related	Accessory Units	Apartment Building	Total
2021	164,730	3,940	53,880	222,540
2051	248,340	6,700	77,820	332,860
Growth 2021-2051	83,610	2,760	23,940	110,320
Unit Mix 2021-2051	75%	3%	22%	100%

Source: Hemson Consulting Ltd. based on Statistics Canada Census, Annual Demographic Estimates and *Growth Plan* Schedule 3 forecasts for 2051. Figures may not add due to rounding. Forecast housing mix by dwelling type varies slightly from the *Greater Golden Horseshoe: Growth Forecasts to 2051* report, the basis for the 2020 Schedule 3 to the *Growth Plan*.

As noted, the *Growth Plan* mandates the minimum target for intensification to be 50% of new units inside the built boundary over the period to 2051. The 'market-based' unit mix shown in Table 4 and Table 5, however, is not consistent with *Growth Plan* objectives to encourage a shift to higher density forms. As a result, the forecast housing mix needs to be adjusted to reflect *Growth Plan* objectives and allocate the forecast housing units by *Growth Plan* policy areas. This adjustment and allocation of housing units to the *Growth Plan* policy areas is undertaken in step three of the analysis (Step R3).

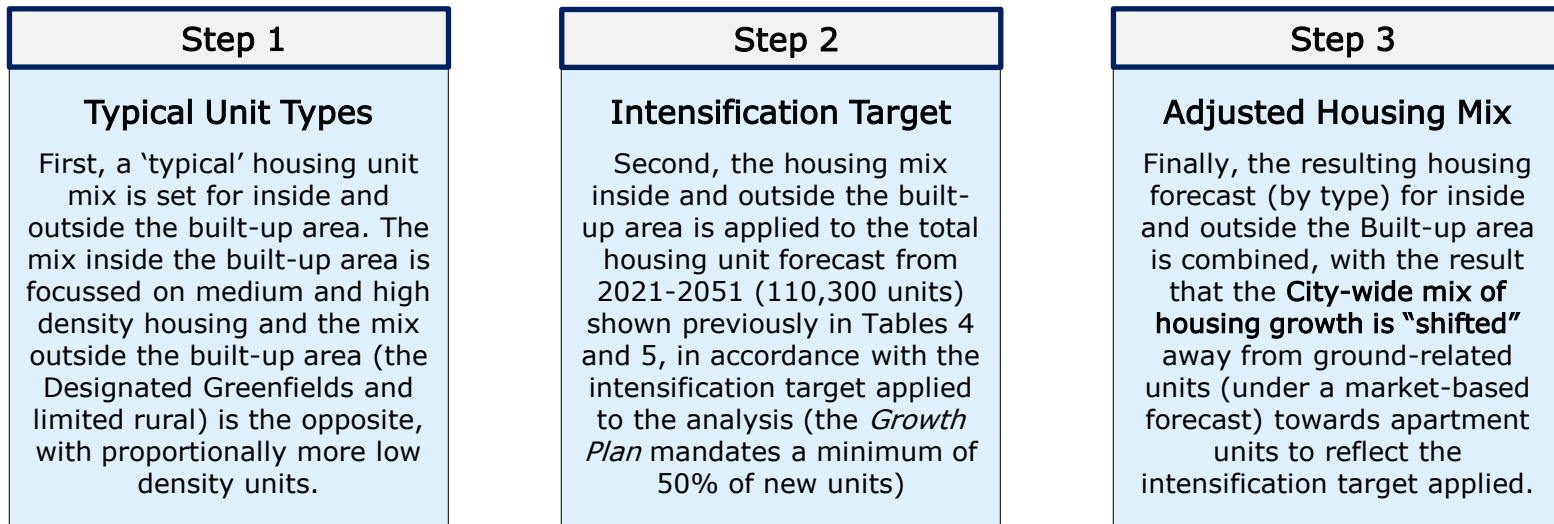
Appendix "A" to Report PED17010(i)
Page 20 of 60

Section 3: Community Area Land Need

Step R3 Allocate housing units by *Growth Plan* policy area

The third step in the analysis is to assess how the housing growth projected in Step R2 will be allocated to address *Growth Plan* requirements to direct specific shares of housing growth between the delineated built-up area, rural area and the DGA. The analysis is undertaken from an estimated 2021 base to incorporate the most recent available information and serve as the effective date of the MCR completion.

Of particular relevance is the allocation to the DGA, which forms the basis for the comparison of supply and demand (Step R4) to determine housing unit shortfalls by unit type (Step R5) and, ultimately, Community Area land need (Step R6). As described in the *Residential Intensification Market Demand Analysis* report (December 2020), the vacant land supply for ground-related housing within the City’s Built-up Area is almost fully developed. As a result, there are not enough sites to accommodate the full range of housing growth. Accordingly, **demand must be redistributed to higher density apartment unit and row housing forms** that can be accommodated through intensification. There are three steps to the redistribution:



Section 3: Community Area Land Need

R3

Step R3 Allocate housing units by *Growth Plan* policy area

The effect of the housing mix adjustment is to “shift” housing units out of the ground-related category to apartment units to achieve *Growth Plan* policy goals, specifically the intensification target. The degree of the shift depends on the intensification target applied to the scenarios: with lower targets requiring a less dramatic shift than higher targets. For example, the shift and resulting allocation of housing units for the *Growth Plan Minimum* scenario is illustrated below in Table 6.

Table 6

City of Hamilton Allocation of Housing Units by *Growth Plan* Policy Area

Housing Mix by Policy Area – <i>Growth Plan Minimum</i> Scenario (50% Intensification)	Ground-Related	Accessory Units	Apartment Building	Total
Mix Inside the Built-up Area	20%	4%	76%	100%
Mix in DGA and Rural	94%	1.5%	4.5%	100%
Units – Inside the Built-up Area (50% of growth)	11,030	2,210	41,920	55,160
Units - DGA and Rural (50% of growth)	51,850	830	2,480	55,160
Policy-based Growth 2021 – 2051	62,880	3,030	44,400	110,320
Market-Based Growth (from Table 5)	83,610	2,760	23,940	110,320
Policy-based Growth (above)	62,880	3,030	44,400	110,300
Difference Market vs. Policy-based	(20,730)	+270	+20,460	0
“Shifted” Share of Market-Based Growth (from Table 5)	25%	10%	85%	0

Source: Hemson Consulting Ltd. forecast models. May not add due to rounding.

As shown shaded in Table 6, to achieve an intensification rate of 50% approximately 20,730 new households that would otherwise occupy ground-related housing units are ‘shifted’ to apartments. This represents a share of about 25% of the ground-related housing growth from 2021-2051 of approximately 83,610 units under the market based forecast as shown previously in Table 5.

Section 3: Community Area Land Need

R3

Step R3 Allocate housing units by *Growth Plan* policy area

For context, the shift to apartments is lower under a “Current Trends” analysis, as described in more detail in the *Residential Intensification Market Demand Analysis* report (December 2020). The Current Trends forecast still embodies a shift in housing demand towards apartments though to a lesser extent than the *Growth Plan Minimum* scenario. The shift and resulting allocation of housing units for the *Current Trends* scenario is illustrated below in below in Table 7.

Table 7

City of Hamilton Allocation of Housing Units by *Growth Plan* Policy Area

Housing Mix by Policy Area – <i>Current Trends</i> Scenario (40% Intensification)	Ground-Related	Accessory Units	Apartment Building	Total
Mix Inside the Built-up Area	20%	4%	76%	100%
Mix in DGA and Rural	94%	1.5%	4.5%	100%
Units – Inside the Built-up Area (40% of growth)	8,830	1,760	33,540	44,130
Units - DGA and Rural (60% of growth)	62,220	990	2,980	66,190
Policy-based Growth 2021 – 2051	71,050	2,760	36,520	110,320
Market-Based Growth (from Table 5)	83,610	2,760	23,940	110,320
Policy-based Growth (above)	71,050	2,800	36,520	110,320
Difference Market vs. Policy-based	(12,570)	-	12,570	0
“Shifted” Share of Market-Based Growth (from Table 5)	15%	0	53%	0

Source: Hemson Consulting Ltd. forecast models. May not add due to rounding.

As shown shaded in Table 7, to achieve an intensification rate of 40% approximately 12,570 new households that would otherwise occupy ground-related housing units are ‘shifted’ to apartments. This represents a share of about 15% of the ground-related housing growth from 2021-2051 of approximately 83,610 units under the market based forecast as shown previously in Table 5.

Section 3: Community Area Land Need

R3

Step R3 Allocate housing units by *Growth Plan* policy area

The required shift in demand to apartments is greater, however, under the *Increased Targets* and *Ambitious Density* scenarios because they are based on higher rates of intensification. The resulting allocation and City-wide unit mix for the three main scenarios is summarized below in Table 8.

Table 8

City of Hamilton Allocation of Housing Units by *Growth Plan* Policy Area

Housing Mix by Policy Area – <i>Allocation of units by Land Need Scenario</i>	Ground-Related	Accessory Units	Apartment Building	Total
<i>Growth Plan Minimum</i> (50% Intensification)				
Units – Inside the Built-up Area	11,030	2,210	41,920	55,160
Units - DGA and Rural	51,850	830	2,480	55,160
Growth 2021 – 2051	62,880	3,030	44,400	110,320
Unit Mix 2021-2051	57%	3%	40%	100%
<i>Increased Targets</i> (50%/55%/60% Intensification)				
Units – Inside the Built-up Area	12,140	2,430	46,120	60,680
Units - DGA and Rural	46,660	750	2,230	49,640
Growth 2021 – 2051	58,800	3,170	48,350	110,320
Unit Mix 2021-2051	53%	3%	44%	100%
<i>Ambitious Density</i> (50%/60%/70% Intensification)				
Units – Inside the Built-up Area	13,240	2,650	50,300	66,190
Units - DGA and Rural	41,480	660	1,990	44,130
Growth 2021 – 2051	54,720	3,310	52,290	110,320
Unit Mix 2021-2051	50%	3%	47%	100%

Source: Hemson Consulting Ltd. base forecast models. May not add due to rounding.

Section 3: Community Area Land Need

R4

Step R4 Determine Housing Supply Potential

After determining the allocation of housing units by *Growth Plan* policy area, the next step is to determine the supply potential to accommodate forecast growth. Of particular relevance to the LNA is the supply potential in the DGA since this provides the basis for determining housing unit shortfalls by unit type in the next step (R5), and ultimately Community Area land need in the final step of the analysis. The City's year-end 2019 housing supply potential within the DGA is summarized below in Table 9.

Table 9

City of Hamilton Designated Greenfield Area Housing Unit Potential

Local Community Data for Year-end 2019	Single and Semi	Rows	Apartment Building	Total
Ancaster	646	406	260	1,312
Dundas	1	0	0	1
Flamborough	1,051	599	3,215	4,865
Glanbrook	1,826	1,864	125	3,815
Hamilton	1,213	689	461	2,363
Stoney Creek	499	1,373	3,135	5,007
Fruitland-Winona	1,012	3,157	1,138	5,307
Total Greenfield Supply Potential	6,248	8,088	8,334	22,670

Source: City of Hamilton Vacant Urban Residential Land (VRL) Inventory for December 2019. Housing supply potential includes all vacant lands subject to registered, draft approved or pending plans of subdivision and estimates of unit potential on lands not yet subject to plan. Virtually all of the DGA supply is subject to active development plans.

City staff have determined that there is an ample supply of potential sites to accommodate intensification within the Built-up Area (see *Residential Intensification Supply Update, 2020*, City of Hamilton). Within the City's Rural Area, there is a large number of legal lots of record as well as Rural Settlement Areas (RSA) that have the potential for future infill development. However, from an LNA perspective only a very small proportion of growth is allocated to the rural area given *Growth Plan* and City planning policies to direct growth to urban settlement areas with full municipal services.

Section 3: Community Area Land Need

R4

Step R4 Determine Housing Supply Potential

As noted in Step R3, the Community Area LNA is undertaken from an estimated 2021 base to incorporate the most recent available information and serve as the effective date of the MCR completion. The City's most recent housing supply information, however, is year-end 2019 as shown previously in Table 9. In order to properly compare supply and demand over the 2021-2051 period, the City's year-end 2019 supply must be adjusted. The adjustment is made by removing a share of known completions for 2020 from CMHC housing market data and an estimate of units that will be completed from year-end 2020 to mid-year 2021. The adjusted DGA unit supply potential is summarized below in Table 10.

Table 10

City of Hamilton Designated Greenfield Area Housing Unit Potential

Components of DGA Housing Unit Supply Potential	Single and Semi	Rows	Apartment Building	Total
DGA Unit Supply Potential, Year-End 2019 (Table 9)	6,248	8,088	8,334	22,670
Estimated Completions Year-end 2019 to mid-year 2021				
City-wide estimated Completions	910	1,220	1,200	3,330
Share Designated Greenfield Area Completions	75%	80%	20%	57%
Estimated DGA Completions to mid-year 2021	680	970	240	1,890
DGA Unit Supply Potential 2021-2051	5,570	7,120	8,090	20,780

Source: Hemson Consulting Ltd., estimates of housing completions by type for the 2016 to 2021 period based on CMHC completed and under construction housing data, City of Hamilton VRL Inventory December 2019 and Geographic Information System (GIS) and Building Permit Tracking system data for residential construction to December 2020. Totals rounded.

The estimated share of DGA completions to mid-year 2021 is based on City of Hamilton building permit data for January to December 2020, which shows a pattern one would expect based on the land supply situation discussed previously. Most of the ground-related housing activity (Singles and Semis and Rows) is occurring in the DGA (roughly 75%) whereas most apartment building activity is occurring inside the Built-up area through redevelopment and intensification. This pattern is continued. The result is an adjusted supply potential for mid-2021 that is approximately 1,900 units less than for year-end 2019.

Section 3: Community Area Land Need

R5

Step R5 Determine Housing Unit Shortfall

The next step is to determine the housing unit shortfalls by comparing housing demand (Step R3) to housing supply potential (Step R4). The demand side of the comparison is the forecast housing unit growth in the DGA over the 2021-2051 period, excluding the **very small share of growth (0.5%) allocated to the Rural Area** to account for limited infill in the RSAs over time. Accessory units are also included in the Apartment Building category for the purposes of the LNA, as shown below in Table 11.

Table 11

City of Hamilton Designated Greenfield Area Housing Demand

Land Need Scenario – Housing Demand for DGA Only (no Rural units)	Single and Semi	Rows	Apartment Building	Total
<i>Current Trends (40% Intensification)</i>				
Unit Growth 2021-2051 DGA	41,030	20,980	3,970	65,980
Housing Mix of Growth	62%	32%	6%	100%
<i>Growth Plan Minimum (50% Intensification)</i>				
Unit Growth 2021-2051 DGA	32,350	19,320	3,310	54,980
Housing Mix of Growth	59%	35%	6%	100%
<i>Increased Targets (50%/55%/60%)</i>				
Unit Growth 2021-2051 DGA	28,010	18,500	2,980	49,490
Housing Mix of Growth	57%	37%	6%	100%
<i>Ambitious Density (50%/60%/70%)</i>				
Unit Growth 2021-2051 DGA	23,670	17,670	2,650	43,990
Housing Mix of Growth	54%	40%	6%	100%

Source: Hemson Consulting Ltd. base forecast models. May not add due to rounding. A very small share (0.5%) of the City-wide demand for single and semi-detached units is allocated to the rural area. No growth in apartments or rows are allocated to the rural area. DGA housing demand for each scenario translates to approximately 99.7% of the total DGA and Rural demand from Table 8.

Section 3: Community Area Land Need

R5

Step R5 Determine Housing Unit Shortfall

The comparison of supply (from Table 10) to demand (from Table 11) indicates a housing unit shortfall in the DGA for only ground-related units as shown in Table 12 below. There is a surplus of apartment unit supply so this category is shown as not applicable (“n/a”) in terms of housing unit shortfall.

Table 12

City of Hamilton Designated Greenfield Area Housing Unit Shortfall

Land Need Scenario – Calculation of Housing Unit Shortfall or Surplus	Single and Semi	Rows	Apartment Building	Total
<i>Current Trends (40% Intensification)</i>				
Unit Growth 2021-2051 DGA (Table 11)	41,030	20,980	3,970	65,980
DGA Unit Supply Potential (Table 10)	5,570	7,120	8,090	20,780
Unit (Shortfall) or Surplus	(35,460)	(13,860)	n/a	n/a
<i>Growth Plan Minimum (50% Intensification)</i>				
Unit Growth 2021-2051 DGA (Table 11)	32,350	19,320	3,310	54,980
DGA Unit Supply Potential (Table 10)	5,570	7,120	8,090	20,780
Unit (Shortfall) or Surplus	(26,780)	(12,200)	n/a	n/a
<i>Increased Targets (50%/55%/60%)</i>				
Unit Growth 2021-2051 DGA (Table 11)	28,010	18,500	2,980	49,490
DGA Unit Supply Potential (Table 10)	5,570	7,120	8,090	20,780
Unit (Shortfall) or Surplus	(22,440)	(11,380)	n/a	n/a
<i>Ambitious Density (50%/60%/70%)</i>				
Unit Growth 2021-2051 DGA (Table 11)	23,670	17,670	2,650	43,990
DGA Unit Supply Potential (Table 10)	5,570	7,120	8,090	20,780
Unit (Shortfall) or Surplus	(18,110)	(10,550)	n/a	n/a

Source: Lorius and Associates based on information from Hemson Consulting Ltd. May not add due to rounding.

Section 3: Community Area Land Need

Step R5 Determine Housing Unit Shortfall

R5

A summary is provided in Table 13 below. As can be seen, there is a shortage of ground-related housing supply for all scenarios. The largest shortage is shown for the *Current Trends* scenario because it has the lowest intensification target and associated shift in ground-related demand to apartment units. The housing unit shortfall is progressively reduced in the other land need scenarios as the intensification target is increased. There is no shortage of Apartment Building supply under any scenario.

Table 13

City of Hamilton Designated Greenfield Area Housing Unit Shortfall

Land Need Scenario – Summary DGA Supply Shortfall 2021-2051	Single and Semi	Rows	Apartment Building	Total
<i>Current Trends</i> (40% Intensification)				
Unit (Shortfall) or Surplus	(35,460)	(13,860)	n/a	n/a
<i>Growth Plan Minimum</i> (50% Intensification)				
Unit (Shortfall) or Surplus	(26,780)	(12,200)	n/a	n/a
<i>Increased Targets</i> (50%/55%/60%)				
Unit (Shortfall) or Surplus	(22,440)	(11,380)	n/a	n/a
<i>Ambitious Density</i> (50%/60%/70%)				
Unit (Shortfall) or Surplus	(18,110)	(10,550)	n/a	n/a

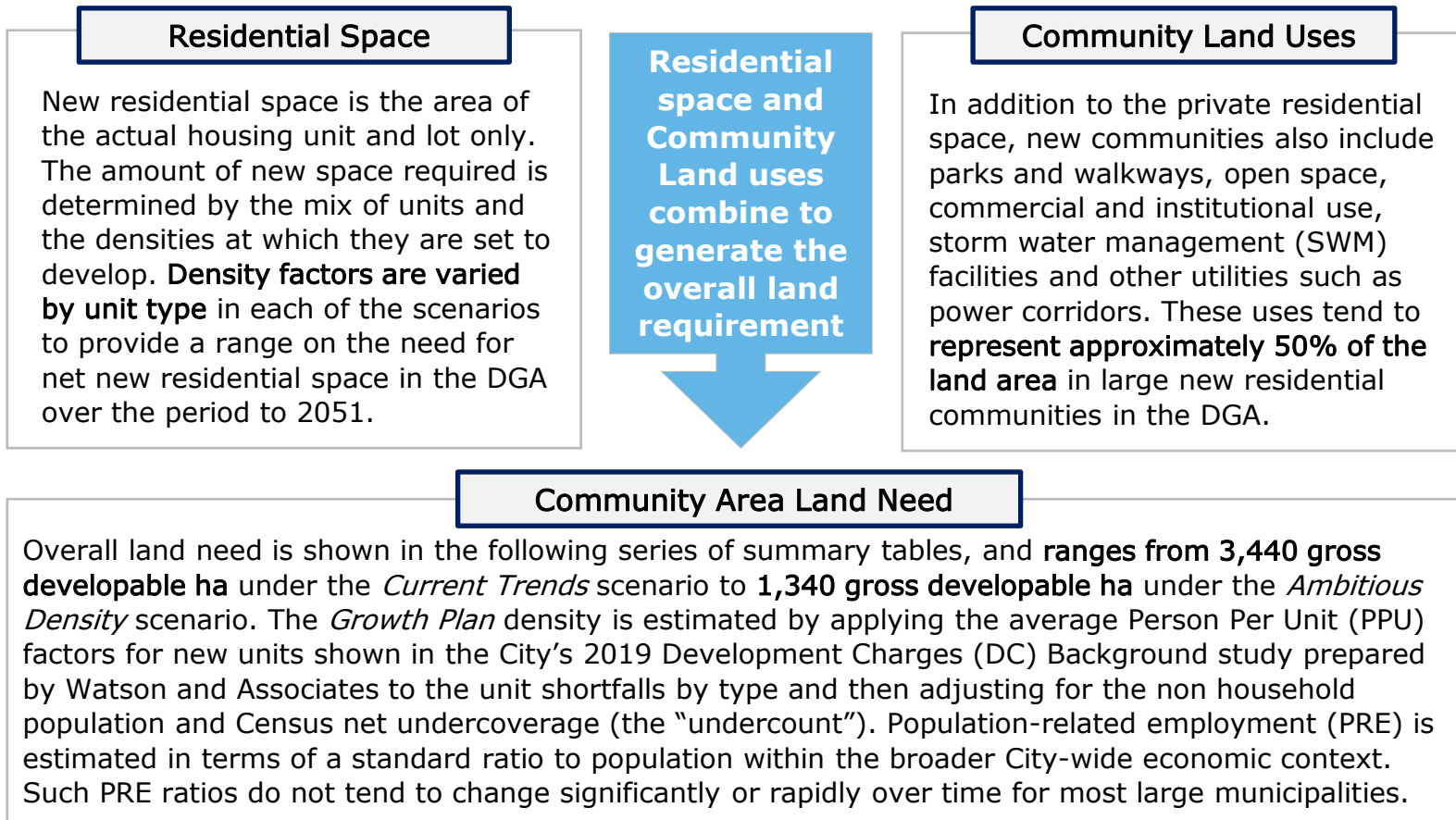
Source: Lorius and Associates based on information from Hemson Consulting Ltd. May not add due to rounding.

The shortfalls shown above represent the additional housing units that are required beyond the existing supply. In accordance with the new Provincial LNA method, these **additional units are to be provided through settlement area expansion**. The additional housing demand by type is converted to a land requirement in the final Step (R6) by applying density factors and taking into account population-related employment and other community land uses such as roads, schools, open space and utilities.

Section 3: Community Area Land Need

Step R6 Establish Community Area land need

The final step in the Community Area LNA is to convert the housing unit shortfall into a land requirement. In the DGA, Community Area land requirements comprise two components: the private residential space (the net area of the actual housing unit and lot): and supporting community land uses such as open space, walkways, commercial and institutional use, roads and local infrastructure. The need for residential space and supporting community land uses combine to generate the overall land requirement.



Section 3: Community Area Land Need

Step R6 Community Area land need – *Current Trends*

A summary of Community Area land need for the *Current Trends* scenario is shown below in Table 14. The housing unit shortfall translates into a net residential land need of approximately 1,720 net ha. Accounting for additional Community Land uses at a typical rate of 50% (i.e. 50% of the total new lands required are in non-residential use) results in a **total land need of 3,440 gross ha**. Estimated *Growth Plan* density is approximately **53 residents and jobs combined per ha**.

Table 14

City of Hamilton Community Area Land Need to 2051

Scenario Summary LNA Results	Single and Semi	Rows	Apartment Building	Total
<i>Current Trends (40% Intensification)</i>				
<i>Ground-Related</i>				
Unit (Shortfall) or Surplus (Table 13)	(35,460)	(13,860)	n/a	(49,320)
Density Factors (Units per net ha)	25	46	n/a	29
Land Need for Residential Space (net ha)	1,420	300	n/a	1,720
Factor to account for Community Land Use				50%
Community Area Land Need (gross ha)				3,440 ha
<i>Growth Plan</i> density (residents+jobs per ha)				53 rjha

Source: Lorus and Associates based on information from Hemson Consulting Ltd. and City of Hamilton. *Growth Plan* density estimated by applying PPU factors for new units from the 2019 DC Background Study to the DGA shortfall (3.405 for Low Density and 2.437 for Medium Density) and adjusting for the non-household population (at a rate of 1.67%) and undercount (at a rate of 2.8%) based on 2016 Census information. Population-related employment is estimated at a rate of 1 job per 8.0 new residents. For LNA purposes apartments are not included with the result that net and *Growth Plan* density are somewhat understated.

The density factors applied to the ground-related housing unit shortfall under the *Current Trends* scenario are measured from a sample of residential subdivisions from 2017-2020 in the Hamilton DGA. The density for single and semi-detached units (**25 units per net ha**) represents, on average, between a 45 ft. and 50 ft. lot frontage. Similarly, the density for rows (**46 units per net ha**) is based on a sample of developments from 2017-2020 including traditional “street” or block townhouses and higher density forms such as back-to-back townhouses. “Stacked” townhouses are considered apartment units as defined for the Census.

Section 3: Community Area Land Need

R6

Step R6 Community Area land need – *Growth Plan Minimum*

A summary of Community Area land need for the *Growth Plan Minimum* scenario is shown below in Table 15. The housing unit shortfall translates into a net residential land need of approximately 1,095 net ha. Accounting for additional Community Land uses at a typical rate of 50% results in a **total land need of 2,190 gross ha**. The estimated *Growth Plan* density is approximately **65 residents and jobs combined** per ha.

Table 15

City of Hamilton Community Area Land Need to 2051

Scenario Summary LNA Results	Single and Semi	Rows	Apartment Building	Total
<i>Growth Plan Minimum</i> (50% Intensification)				
<i>Ground-Related</i>				
Unit (Shortfall) or Surplus (Table 13)	(26,780)	(12,200)	n/a	(38,980)
Density Factors (Units per net ha)	30	60	n/a	36
Land Need for Residential Space (net ha)	890	205	n/a	1,095
Factor to account for Community Land Use				50%
Community Area Land Need (gross ha)				2,190 ha
<i>Growth Plan</i> density (residents+jobs per ha)				65 rjha

Source: Lorus and Associates based on information from Hemson Consulting Ltd. and City of Hamilton. *Growth Plan* density estimated by applying PPU factors for new units from the 2019 DC Background Study to the DGA shortfall (3.405 for Low Density and 2.437 for Medium Density) and adjusting for the non-household population (at a rate of 1.67%) and undercount (at a rate of 2.8%) based on 2016 Census information. Population-related employment is estimated at a rate of 1 job per 8.0 new residents. For LNA purposes apartments are not included with the result that net and *Growth Plan* density are somewhat understated.

The density factors applied to the ground-related housing unit shortfall under the *Growth Plan Minimum* scenario reflect a smaller lot pattern of development. The density for single and semi-detached units (**30 units per net ha**) represents a 40ft. lot frontage on average. The density for Rows (**60 units per net ha**) represents newer block towns with a 20 ft. lot frontage. Higher density rows, such as smaller lot street towns (15 to 18 ft. lot frontage) and back-to-back units, are introduced into the mix for the *Increased Targets* and *Ambitious Density* scenarios at an average of 80 units per net ha.

Appendix "A" to Report PED17010(i)
Page 32 of 60

Section 3: Community Area Land Need

R6

Step R6 Community Area land need – *Increased Targets*

A summary of Community Area land need for the *Increased Targets* scenario is shown below in Table 16. The housing unit shortfall translates into a net residential land need of approximately 815 net ha. Accounting for additional Community Land uses at a typical rate of 50% results in a **total land need of 1,630 gross ha**. The estimated *Growth Plan* density is approximately **75 residents and jobs combined** per ha.

Table 16

City of Hamilton Community Area Land Need to 2051

Scenario Summary LNA Results	Single and Semi	Rows	Apartment Building	Total
<i>Increased Targets (50%/55%/60%)</i>				
<i>Ground-Related</i>				
Unit (Shortfall) or Surplus (Table 13)	(22,440)	(11,380)	n/a	(33,820)
Density Factors (Units per net ha)	35	65	n/a	41
Land Need for Residential Space (net ha)	640	175	n/a	815
Factor to account for Community Land Use				50%
Community Area Land Need (gross ha)				1,630 ha
<i>Growth Plan</i> density (residents+jobs per ha)				75 rjha

Source: Lorus and Associates based on information from Hemson Consulting Ltd. and City of Hamilton. *Growth Plan* density estimated by applying PPU factors for new units from the 2019 DC Background Study to the DGA shortfall (3.405 for Low Density and 2.437 for Medium Density) and adjusting for the non-household population (at a rate of 1.67%) and undercount (at a rate of 2.8%) based on 2016 Census information. Population-related employment is estimated at a rate of 1 job per 8.0 new residents. For LNA purposes apartments are not included with the result that net and *Growth Plan* density are somewhat understated.

The density factors applied to the ground-related housing unit shortfall under the *Increased Targets* scenario are increased further. The density for single and semi-detached units (**35 units per net ha**) represents still smaller lot units (on average a 36 ft. lot frontage). The density for Rows (**65 units per net ha**) represents a blended rate of 80% “street” or traditional block towns with a 20 ft. lot frontage (as per the *Growth Plan Minimum* scenario) and 20% higher density rows at an average of 80 units per net ha. For the *Ambitious Density* scenario, the share of higher density rows is increased further within the housing mix.

Appendix "A" to Report PED17010(i)
Page 33 of 60

Section 3: Community Area Land Need

R6

Step R6 Community Area land need – *Ambitious Density*

A summary of Community Area land need for the *Ambitious Density* scenario is shown below in Table 17. The housing unit shortfall translates into a net residential land need of approximately 665 net ha. Accounting for additional Community Land uses at a typical rate of 50% results in a **total land need of 1,340 gross ha**. The estimated *Growth Plan* density is approximately **77 residents and jobs combined** per ha.

Table 17

City of Hamilton Community Area Land Need to 2051

Scenario Summary LNA Results	Single and Semi	Rows	Apartment Building	Total
<i>Ambitious Density (50%/60%/70%)</i>				
<i>Ground-Related</i>				
Unit (Shortfall) or Surplus (Table 13)	(18,110)	(10,550)	n/a	(28,660)
Density Factors (Units per net ha)	35	70	n/a	43
Land Need for Residential Space (net ha)	520	150	n/a	670
Factor to account for Community Land Use				50%
Community Area Land Need (gross ha)				1,340 ha
<i>Growth Plan</i> density (residents+jobs per ha)				77 rjha

Source: Lorus and Associates based on information from Hemson Consulting Ltd. and City of Hamilton. *Growth Plan* density estimated by applying PPU factors for new units from the 2019 DC Background Study to the DGA shortfall (3.405 for Low Density and 2.437 for Medium Density) and adjusting for the non-household population (at a rate of 1.67%) and undercount (at a rate of 2.8%) based on 2016 Census information. Population-related employment is estimated at a rate of 1 job per 8.0 new residents. For LNA purposes apartments are not included with the result that net and *Growth Plan* density are somewhat understated.

The density factors applied to the ground-related housing unit shortfall under the *Ambitious Density* scenario are increased still further. The density for single and semi-detached units (**35 units per net ha**) is maintained to represent small lot units (a 36 ft. lot frontage on average). However, the density for rows (**70 units per net ha**) is increased to a blended rate 50% “street” or traditional block towns with a 20 ft. lot frontage at an average of 60 units per net ha and 50% higher density rows at an average density of 80 units per net ha.

Appendix "A" to Report PED17010(i)
Page 34 of 60

Section 3: Community Area Land Need

Step R6 Community Area land need Scenario Summary

A summary is provided in Table 18 below. As shown, Community Area land need is greatest for the *Current Trends* scenario because it has the lowest intensification target and associated densities of ground-related housing development. Land need is reduced as the intensification target is increased and a steadily 'denser' pattern of ground-related housing development is incorporated into the analysis. These results are also reflected in the estimated *Growth Plan* density, which increases in a similar fashion.

Table 18

City of Hamilton Community Area Land Need to 2051

Summary of results 2021-2051 by Land Need Scenario	Community Area	<i>Growth Plan</i> Density
<i>Current Trends</i> (40% Intensification)	3,440 ha	53 rjha
<i>Growth Plan Minimum</i> (50% Intensification)	2,190 ha	65 rjha
<i>Increased Targets</i> (50%/55%/60%)	1,630 ha	75 rjha
<i>Ambitious Density</i> (50%/60%/70%)	1,340 ha	77 rjha

Source: Lorus and Associates based on information from Hemson Consulting Ltd. and City of Hamilton

As shown above, the *Growth Plan* density target of 50 residents and jobs per ha is achieved for all land need scenarios. From a market perspective, achieving both the *Increased Targets* and *Ambitious Density* scenarios may be a challenge, but only towards the end of the planning horizon to 2051 as the available greenfield supply becomes constrained. As noted in the *Residential Intensification Market Demand Analysis* report (December 2020) Hamilton is in an attractive position to shift the historic pattern of growth towards denser and more compact urban forms: but there are limits to the level of change that can be reasonably achieved. As such, careful monitoring and reporting on progress would be required to ensure a balanced land supply is available to accommodate growth under the higher-density land need scenarios.

Section 3: Community Area Land Need

R6

Step R6 Community Area land need Scenario Summary

The City’s analysis of greenfield density confirms that the existing DGA also exceeds the required *Growth Plan* density of 50 residents and jobs per ha, as summarized below in Table 19. Accordingly, all Community Area land need scenarios conform to the *Growth Plan* density requirements. As noted however, the *Current Trends* scenario would require that the City request an alternative intensification target.

Table 19

City of Hamilton Density of Existing and New DGA at Build-Out

Component of Calculation	Results
Total Population (including Census net undercoverage)	114,710
Total Employment (not including designated Employment Areas)	13,270
Total DGA Capacity (residents + jobs) at Build-out	127,980
Ratio of Total DGA Employment to Population (1 job per 8.6 residents)	8.6
Total Designated Greenfield Area (all figures in ha)	4,231
Less Natural Features area (<i>Growth Plan</i> definition)	305
Less Applicable Infrastructure Rights of Way	0
Less designated Employment Areas	1,780
Less Cemeteries	5
Existing Designated Greenfield Area (in ha) net of allowable take-outs	2,141
Density in Residents + Jobs per ha of Existing DGA at Build-out	60 rjha
Density in Residents + Jobs per ha of LNA Scenarios to 2051	53 rjha to 77 rjha

Source: City of Hamilton information from *Existing Designated Greenfield Density Analysis* (December 2020).

The next component of the LNA is **Employment Areas**: where most employment land employment (employment in industrial-type buildings) is accommodated as well as a limited amount of major office and population-related jobs, particularly those providing services to the employment area. The Employment Area land needs analysis is described in the next section, beginning with an overview of the approach taken to the analysis.

Section 4: Employment Area Land Need

Overview of mandated steps in the analysis

This section summarizes the results of Employment Area land need analysis, within the broad growth context described in Section 2. The analysis is undertaken according to the mandated components of the Provincial method, shown again below for convenience. Key data sources and inputs to the analysis are summarized at right, with additional notes and commentary provided for the tables that follow.

E1	Calculate Total Employment Growth to <i>Growth Plan</i> Horizon
E2	Categorize Employment Growth into the Major Land Use Planning Types
E3	Allocate Growth to the <i>Growth Plan</i> Policy Area
E4	Calculate Capacity of Employment Areas to Accommodate Growth
E5	Establish Employment Area Land Need

Key Data Sources and Inputs

1. Total employment is based on data from the 2016 Census and includes usual place of work, work at home and no usual place of work, in accordance with the *Growth Plan* Schedule 3 forecast definition.
2. Employment growth by type is based on 2016 Census employment by economic sector (NAICS), data from the City's employment survey and available information on the inventory of major office buildings. Population-related employment is based on a ratio to population. Such ratios do not tend to shift rapidly for most communities and have proven to be a sound basis for forecasting.
3. Allocation of employment is based on an analysis of rural employment including rural population-related employment, the Hamilton International Airport (HIA) facility and other City and Census information on the distribution of employment by economic sector.
4. The capacity of existing Employment Areas is based on current density factors derived from the City's GIS system and other data sources to inform expectations about the pattern of future economic activity.
5. Land need (E5) is calculated as the difference between the current employment area capacity and forecast employment at 2051.

Section 4: Employment Area Land Need



Step E1 Calculate total employment growth to *Growth Plan* horizon

Similar to the Community Area component of the LNA, the first step in the assessment of Employment Area land need involves the calculation of employment growth to the *Growth Plan* horizon (2051). In accordance with the *Growth Plan* Schedule 3 forecasts (2020) Hamilton is forecast to achieve a **2051 employment of 360,000**. Total employment includes usual place of work, work at home and no usual place of work (often called “no fixed” place of work). The five-year growth from a **2016 base** to the estimated 2021 employment and forecast for the periods to 2031 and 2051 is shown in Table 20 below.

Table 20

City of Hamilton 2016, 2021 and Forecast 2051 Employment

Component of Census Employment	2016	2021	2031	2051
Usual Place of Work	187,540	194,600	221,600	294,300
Work at Home	15,790	16,400	18,600	24,800
No Fixed Place of Work	26,040	27,000	30,800	40,900
Total Employment	229,370	238,000	271,000	360,000
Growth by Census Period		8,630	33,000	89,000

Source: 2016 Usual Place of Work and Work at Home employment is from Statistics Canada. No Fixed Place of Work employment is from Hemson Consulting Ltd., based on the redistribution of this component in similar economic sectors within a common labour market area. Forecast 2021, 2031 and 2051 are from the *Greater Golden Horseshoe: Growth Forecasts to 2051* (August 2020). For illustrative purposes, employment by Census component for the estimated 2021 and forecast 2031 and 2051 employment totals is maintained at shares calculated from the 2016 Census figures.

The *Growth Plan* employment forecast for Hamilton takes into account the City’s growing role in the regional metropolitan area and the evolving regional land supply situation, especially in southern Halton and Peel Regions where employment has been growing steadily for decades. Similar to housing, as the supply of development lands in these locations is increasingly constrained, the City of Hamilton will be effectively drawn ‘closer’ to established communities in the GTA-west and demand for employment area lands will increase.

Appendix "A" to Report PED17010(i)
Page 38 of 60

Section 4: Employment Area Land Need

Step E2 Categorize employment growth by major type

The total Census employment and *Growth Plan* Schedule 3 forecasts to 2051 must then be categorized into the major land use planning-based types discussed in Section 2. The four employment types are: **Major Office, Employment Land, Population-Related and other Rural-based employment**. The approach taken to categorizing current employment and forecast growth to the *Growth Plan* horizon is summarized below.

Analysis of Rural Employment

An analysis of rural employment is undertaken to assess the total number of jobs and composition of rural economic activity. This analysis is required to inform the estimate of the amount and location of job growth by major type and location on a City-wide basis. An estimate of employment at the Hamilton International Airport (HIA) facility is included. Although in the rural area, the HIA facility accommodates economic activity that is considered employment land employment, so must be taken into account in the LNA.

Analysis of 2016 Census Employment by Sector

An analysis of 2016 Census employment by North American Industry Classification System (NAICS) sector is undertaken to prepare a preliminary distribution of employment to the major planning types. The results are then “reality checked” iteratively with other available information such as the inventory of major office space, employment land densities and ratios of population-related employment. Adjustments are made to ensure the final distribution is reasonable and supportable within a broader City-wide context.

Categorization of Growth Over the Period to 2051

The forecast to 2051 is prepared by assigning shares of employment growth by type to the *Growth Plan* policy areas including the designated Employment Areas, Community Area and Rural area. The shares of growth are based on the types of economic activity anticipated over the *Growth Plan* horizon, their likely location within the community and, in the case of the designated Employment Areas, the approximate densities at which they are anticipated to develop. The City of Hamilton’s well-documented resurgence as a significant economic and cultural centre within the GGH provides much of the longer-term context for this analysis: particularly its expanding role in research and development, technology and creative industry sectors.

Section 4: Employment Area Land Need

Step E2 Categorize employment growth by major type

The categorization of Census 2016 employment into the major land use types is shown below in Table 21. The largest share is population-related (55%) followed by employment land (28%) and major office jobs (15%). Other rural-based employment is a small part of the City-wide employment base.

Table 21

City of Hamilton 2016 Employment by Type

Employment Type	2016	Share
Major Office (jobs in freestanding buildings more than 20,000 sq.ft.)	33,700	15%
Population-Related (jobs that serve the resident population)	126,500	55%
Employment Land (jobs in industrial and business park developments)	63,570	28%
Other Rural-based (primary, recreation and rural employment land-type jobs)	5,600	2%
Total Employment	229,370	100%

Source: Statistics Canada NAICS data, City of Hamilton Employment Survey and information on the major office inventory provided by Costar, Blair Blanchard Stapleton Limited and City staff. Other Rural-Based employment, by type, does not include population-related or urban employment land-type uses: these jobs are allocated to the Rural area later in the analysis.

For the purposes of **City-wide employment by major type**, “Other Rural-based” employment includes agriculture, aggregates, recreation-based and other scattered uses that might typically be found in urban employment areas, but are located on rural employment lands. Population-related and urban employment land jobs (the HIA facility) are allocated to the Rural area in a later step to estimate total rural employment.

Major Office employment is based on an analysis of the economic sectors that tend to occupy office space, cross-referenced with an estimate of employment in the City’s occupied office space. Similarly, 2016 population-related employment is an estimate of retail, education, health care and public administration, as well as ‘work at home’ employment, cross-referenced with the ratios in other comparable communities in the GGH. Employment land employment is calculated as the residual of the other types, adjusted iteratively for consistency with the City’s 2016 land supply and employment survey information for the designated employment areas.

Section 4: Employment Area Land Need

Step E2 Categorize employment growth by major type

The City-wide categorization of the 2016 and forecast 2051 employment by type is shown below in Table 22. Growth is forecast for all the major types, except for the “Other Rural-based” category. Population-related employment accounts for the most (52%) of total 2051 employment, reflecting the significant population growth forecast under the *Growth Plan* (2020) as discussed in Sections 2 and 3.

Table 22

City of Hamilton 2016 and Forecast 2051 Employment by Type

Employment Type	2016	Share	2051	Share
Major Office (s)	33,700	15%	68,400	19%
Population-Related	126,500	55%	187,810	52%
Employment Land	63,570	28%	98,190	27%
Other Rural-based	5,600	2%	5,600	<2%
Total Employment	229,370	100%	360,000	100%

Source: Statistics Canada Census data, City of Hamilton Employment Survey and information on the major office inventory provided by Costar, Blair Blanchard Stapleton Limited and other information from the City of Hamilton.

Growth in employment land employment will be the key driver of demand for new employment areas, along with limited growth in major office and population-related employment. Employment land employment includes growth associated with the Hamilton International Airport (HIA) facility (approximately 2,000 jobs to 2051). It is important to note that this is not an allocation of employment to the Airport Employment Growth District (AEGD), but rather an expectation of growth at the HIA facility itself.

Other Rural-based employment is stable to 2051: including scattered employment land-type activities that might typically be found in urban employment areas, but are located in rural areas. Employment that exists in response to the resident population (population-related employment) as well as urban employment land jobs (in this case, the HIA facility) are both allocated to the rural area in a later step (E3) of the analysis.

Section 4: Employment Area Land Need

Step E2 Categorize employment growth by major type

A summary of growth by type to 2051 is provided in Table 23 below. As noted, the analysis is undertaken from a 2016 base. This approach is different that the calculation of Community Area land needs, which is based on the growth increment over the 2021-2051 period. A 2016 base is suitable for estimating Employment Area land needs because the analysis is focussed on total employment at the *Growth Plan* horizon (2051) rather than the growth increment over the period from 2021 to 2051.

Table 23

City of Hamilton Forecast Employment Growth By Major Type

Period	Major Office	Population Related	Employment Land	Other Rural Based	Total
2016 Census	33,700	126,500	63,570	5,600	229,370
2016-2051 Growth	34,700	61,310	34,620	0	130,630
2051 total	68,400	187,810	98,190	5,600	360,000

Source: Statistics Canada Census data, City of Hamilton Employment Survey information, *John C. Munro Hamilton International Airport Economic Impact Analysis* (2014 and 2018 reports) and *Growth Plan* Schedule 3 forecasts. May not add due to rounding.

The analysis is also undertaken from a 2016 base because the **estimated distribution of employment by type can be based on known information** regarding economic conditions at that time including the 2016 Census employment, City of Hamilton employment survey and other data sources. Although shifts among the various land use-based categories do not tend to occur quickly, the 2016 distribution is nevertheless considered to be more reliable as a foundation for analysis than 2021 estimates, especially in light of the substantial and **complex economic impacts caused by the COVID-19 Pandemic**. This situation is unlike the 2021 housing and population figures, discussed previously in Section 3, which are much better known because they are estimated from actual unit completions and units under construction since Census day 2016.

Section 4: Employment Area Land Need

Step E2 Categorize employment growth by major type

The outlook for the three other major employment types is based on recent and emerging growth trends, in particular the City's well-documented resurgence as a significant cultural and economic centre within the GGH. Notwithstanding the short-term impacts of the COVID-19 Pandemic, the City has become a much more attractive location for investment, including business park and industrial-type uses and new office space. The burgeoning innovation, technology-related and creative industry sectors are of particular note in this latter regard.

Major Office Employment

As shown in Table 22, the outlook is for an increase in share from 15% to 19% of the total employment, which may seem modest. However, the associated employment growth and space demand is substantial. At a rate of 230 sq.ft. per worker (Hemson forecast report, 2020, GFA basis) 34,700 major office jobs translates into **nearly 8 million sq. ft. of new office space**. Some of this space has already been built as part of recent heritage adaptive reuse projects in downtown Hamilton since 2016. For context, the forecast demand to 2051 is approaching triple the size of the current office inventory of the City of Burlington: approximately 3.2 million sq. ft..

Population-related Employment

As noted, population-related employment is forecast in terms of a ratio to population. The estimated employment for 2016 shown in Table 21 translates into a ratio of roughly 1 job for every 4.4 residents, **consistent with other central places** such as the City of Toronto, Barrie and Brantford that provide services to a surrounding regional area. For the LNA, 2051 population-related employment is based on maintaining the 2016 rate of 4.4 residents per job to reflect the City's continued growth and economic role as a regional service centre.

Employment Land Employment

Similar to the 2016 base, growth in employment land employment is calculated as the residual of the other types within the context of broader growth trends. In our view, the outlook remains positive. Demand for large-scale distribution and logistics facilities shows no signs of slowing rapidly or significantly. Manufacturing will continue to play a role in new space demand, just with **fewer workers (and more automation)** relative to the past. Industrial-type buildings will also accommodate a portion of the professional service and technology-related activities that are anticipated to grow strongly over the period to 2051.

Section 4: Employment Area Land Need

Step E3 Allocate employment growth to *Growth Plan* policy areas

With the outlook for employment established, the next step is to allocate growth by major land-use category to the applicable *Growth Plan* policy areas: the Community Area, Employment Area and areas outside settlement areas (the Rural area). The allocation is required primarily to determine how many jobs will be located in the designated Employment Areas, but also how many jobs will be accommodated in the Community Area and included in the *Growth Plan* density requirement. A brief summary of the expectations for employment by *Growth Plan* policy area is provided below and discussed in more detail in the following sections.

Rural Area

- No major office employment exists or expected to 2051.
- Marginal population-related employment growth due to limited infill and population growth in the RSAs.
- Some growth in employment land employment allocated to the Airport facility (HIA) to account for its role in City-wide employment.
- Employment in other rural-based agriculture, aggregates, recreation and scattered employment land-type uses set to remain stable.

Employment Area

- Stable share of major office growth, reflecting the current market and policy objectives to focus offices in transit-supportive locations such as the downtown UGC.
- Some growth in population-related employment as older employment areas age and accommodate a wider range of economic use.
- All of the employment land employment growth, due to the locational and built form requirements of industrial-type development.

Community Area

- Most of the major office growth, in accordance with market expectations and City policy objectives.
- Most of the population-related employment growth, reflecting the role of the downtown, major retail centres, health care and post-secondary education institutions.
- Gradual decline in the limited amount of scattered older industrial-type uses through economic change or residential intensification to 2051.

Section 4: Employment Area Land Need

Step E3 Allocate employment growth to Rural Area

E3

The analysis of rural employment indicates a total of 15,110 jobs for 2016, as shown below in Table 24. The allocation of growth by type is based on City and Statistics Canada data for the Rural Area and expected ratios of jobs to population within the control total of the 2016 Census rural employment.

Table 24

City of Hamilton Allocation of Employment by Type – Rural area

Period	Major Office	Share of City total	Pop-Related	Share of City total	Emp Land	Share of City total	Other Rural	Share of City total	Area Total	Share of City total
2016 Base	0	0%	7,590	6.0%	1,920	3%	5,600	100%	15,110	7%
2016-2051 Growth	0	0%	860	1.5%	2,010	6%	0	100%	2,870	2%
2051 total	0	0%	8,450	4.5%	3,930	4%	5,600	100%	17,980	5%

Source: Statistics Canada Census data, City of Hamilton Employment Survey, information on the major office inventory provided by Costar, Blair Blanchard Stapleton Limited, and *John C. Munro Hamilton International Airport Economic Impact Analysis* (2014 and 2018 reports) and *Growth Plan* Schedule 3 forecasts. May not add due to rounding. Includes employment at the HIA facility.

There are no major offices (buildings greater than 1,858 m² in size) currently or anticipated in the Rural Area. 2016 Population-related employment is estimated at approximately 7,590 jobs and forecast to grow marginally to 2051. As discussed in Section 2, only a very small share of population growth (and therefore population-related employment) is allocated to the Rural Area. Similarly, other Rural-Based employment (mainly primary industry, recreation and scattered employment land-type uses) is anticipated to remain stable.

Employment at the Hamilton International Airport (HIA) facility is estimated to be approximately 2,000 jobs in 2016 and forecast to roughly double over the period to 2051. This expectation is based on the historic rates of employment growth at the airport facility shown in the economic impact studies noted above and other sources. It should also be reiterated that this is not an allocation of growth to the Airport Employment Growth District (AEGD), nor a detailed forecast of airport economic activity, but rather a small allocation of urban employment land employment to the HIA facility for the purposes of the LNA.

Section 4: Employment Area Land Need

E3

Step E3 Allocate employment growth to Employment Areas

The allocation of employment growth by major type to the Employment Areas is shown below in Table 25. As discussed previously, these are the geographic areas in Hamilton planned to be predominantly occupied by, but not exclusively used for, employment land employment.

Table 25

City of Hamilton Allocation of Employment by Type – Employment Area

Period	Major Office	Share of City total	Pop-Related	Share of City total	Emp Land	Share of City total	Other Rural	Share of City total	Area Total	Share of City total
2016 Base	4,040	12%	6,960	5.5%	54,350	86%	0	0%	65,350	28%
2016-2051 Growth	4,170	12%	8,070	13%	34,510	100%	0	0%	46,740	36%
2051 total	8,210	12%	15,030	8.0%	88,860	91%	0	0%	112,090	31%

Source: Statistics Canada Census data, City of Hamilton Employment Survey information and information on the major office inventory provided by Costar, Blair Blanchard Stapleton Limited and *Growth Plan* Schedule 3 forecasts. May not add due to rounding.

Employment Land Employment comprises most (86%) of the City-wide 2016 total, with a limited amount in the Rural Area (3% at the HIA facility) and the balance scattered throughout the Community Area as discussed in a subsequent step. All of the net future Employment Land Employment growth (100%) is allocated to the urban Employment Areas. The share of major office employment in 2016 is estimated based on available information on office space in the Employment Areas and held constant over the forecast period. The result is only a limited allocation of growth in major office jobs to the designated Employment Areas to 2051.

Population-related employment is estimated from the City's 2016 Employment Survey, which shows a total of approximately 7,000 jobs in the retail, healthcare, education, arts and accommodation and food sectors. These jobs are expected to gradually increase over time. This growth, however, is not anticipated to be "major retail" employment, but rather smaller-scale retail, personal services and restaurants catering to the existing business park employees. Many of these functions are already being provided within the City's older employment areas in central locations proximate to existing concentrations of jobs and residents.

Section 4: Employment Area Land Need

Step E3 Allocate employment growth to the Community Area

The allocation of employment growth by major type to the Community Area is shown below in Table 26. As described in Section 1, Community areas include delineated built-up areas and the Designated Greenfield Area (excluding employment areas). A component of Community Area population-related employment growth is allocated to the DGA as the 'jobs' in the 'jobs + residents' figure shown in Table 18.

Table 26

City of Hamilton Allocation of Employment by Type – Community Area

Period	Major Office	Share of City total	Pop-Related	Share of City total	Emp Land	Share of City total	Other Rural	Share of City total	Area Total	Share of City total
2016 Base	29,660	88%	111,950	88.5%	7,300	11%	0	0%	148,910	65%
2016-2051 Growth	30,540	88%	52,390	85.5%	(1,900)	(6%)	0	0%	81,020	62%
2051 total	60,190	88%	164,340	87.5%	5,400	5%	0	0%	229,930	64%

Source: Statistics Canada Census data, City of Hamilton Employment Survey information and information on the major office inventory provided by Costar, Blair Blanchard Stapleton Limited and Growth Plan Schedule 3 forecasts. May not add due to rounding.

The majority of current and future major office employment (88%) is allocated to the Community Area. This outlook is based on maintaining the current market and policy focus of the City's office market in the Urban Growth Centre (UGC). Population-related employment growth is also concentrated in the Community Area, reflecting the role of the downtown, major retail centres, health care and post-secondary education institutions in providing goods and services to both local and broader regional market areas.

There is also a small amount of scattered employment land-type uses. According to the City's 2016 Employment Survey, there are 7,400 jobs in the construction, manufacturing, wholesale trade and transportation sectors outside the UGC and designated Employment Areas. These jobs are in the form of older industrial uses in more mature parts of the Community Area. The amount is anticipated to gradually decline over time, as a result of economic change and/or redevelopment to non-employment uses. This expectation is consistent with the pattern of change observed in other GTHA communities.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

Steps E1 to E3 so far in the analysis have: calculated total employment growth to 2051, growth by major land use type to the *Growth Plan* horizon and allocated the forecast growth – by type – to the *Growth Plan* policy areas. To summarize, Employment Areas are forecast to accommodate a total of **112,090 jobs in 2051**, as shown previously (outlined 2051 total) in Table 25.

The next step is to assess the capacity of existing Employment Areas to accommodate this growth forecast and, in turn, the need for additional lands over the planning horizon. The assessment of land supply is organized into three major categories; Built Employment Areas, Newly Developing Employment Areas and Employment Areas outside the current settlement area boundary.

Built Employment Areas

Employment Areas that are fully developed, or almost fully developed, inside the current settlement area including the Bayfront Industrial Area and other central employment areas

Newly Developing Areas

Employment Areas that are unbuilt or largely unbuilt, inside the current settlement area, including the AEGD, Red Hill, Ancaster and Flamborough Employment Areas

Outside Settlement Areas

Existing areas located outside the settlement areas, in this case the HIA facility. While not a 'designated employment area' within the meaning of the UHOP, it must be taken into account.

The purpose of this step is to estimate the total jobs that can be accommodated in existing Employment Areas at the *Growth Plan* horizon. For the City of Hamilton, these areas are designated "Employment Area" within the Urban Hamilton Official Plan (UHOP) and include the Bayfront Industrial Area and other central industrial areas as well as greenfield business parks such as the AEGD, Red Hill north and south and the Ancaster and Flamborough Employment Areas. The estimated capacity of these areas to accommodate growth provides the basis for determining Employment Area land need in a subsequent step of the analysis. Based on preliminary analysis, approximately 40 ha of employment area lands are identified for conversion as part of the City's draft Employment Land Review. This amount does not materially affect the results of the LNA. However if the amount of conversion sites increases, there may be a need to offset this loss by providing additional lands to ensure the City's ability to accommodate growth to 2051.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

The City of Hamilton's Employment Area supply is made up of a system of industrial and business park lands including developed industrial areas along the waterfront and vacant greenfield business parks to the south. To reflect variations in the age and character of the different areas, the land supply is further distinguished into five sub-areas:

1. The **HIA Airport facility**, which is located in the Rural Area, outside the designated settlement area. Although not a designated Employment Area within the UHOP, it accommodates employment land employment that must be accounted for;
2. The **Bayfront Industrial Area**, which is treated as a special case given its unique economic base, very low density and potential to distort City-wide averages if not addressed independently;
3. Other **Central Urban Areas**, that are built or largely built including the Stoney Creek Business Park, the East Hamilton, Dundas and Hester Industrial areas and West Hamilton Innovation District (WHID);
4. The **Developing Greenfield Areas**, including the Red Hill, Ancaster and Flamborough Business Parks; and
5. The **Airport Employment Growth District (AEGD)**; which is the City's major greenfield growth area. It is expected to develop at relatively low employment densities given the strong demand for logistics and distribution facilities. Although the AEGD may have been constrained by servicing to date, strategies to resolve this challenge have been put in place. As an ideal business park location, and with the servicing issues resolved, the AEGD is expected to grow much more rapidly than it has in the past.

The developed industrial areas play a significant role in Hamilton's economic base, especially the Steel Cluster and associated manufacturing activity. The vacant business park locations in Red Hill, the AEGD and other growing greenfield areas will accommodate the bulk of new industrial development over the planning horizon. The approach to estimating the capacity of these areas to accommodate growth is described next, followed by a series of tables setting out the results of the analysis.

E4

HIA Airport Facility
Outside settlement area

Bayfront Industrial Area
Large, very low density

Central Urban Areas
Established and building out

Developing Greenfields
Established and growing

AEGD
The City's major new greenfield growth area

Appendix "A" to Report PED17010(1)
Page 49 of 60

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

The capacity of existing Employment Areas is estimated by first establishing the 2016 employment base as well as the vacant and occupied land supply available to accommodate growth. The outlook for growth, by area, is determined through a combination of economic analysis and *Growth Plan* policy direction to make more efficient use of vacant and underutilized employment lands. The result is an estimate of the total amount of employment that can be accommodated in existing areas at 2051, which is then compared to the forecast jobs to determine land need. This approach is explained in more detail below.

Five-Step Approach to Estimating Capacity of Existing Employment Areas

- 1. Estimate 2016 Employment.** Employment in the City's Employment Areas for 2016 is estimated based on information from the City's employment survey, adjusted to align with the 2016 Census employment total and City-wide estimates of employment by type. As discussed, the categorization of employment by type and allocation to *Growth Plan* policy areas is an iterative process.
- 2. Determine Land Supply.** The occupied and vacant land supply for each Employment Area is estimated based on information from the City's GIS database. The occupied land supply is required to calculate the 2016 employment area density. The vacant land supply is where most of the designated Employment Area growth will occur, especially in the City's developing greenfield areas and the AEGD. Figures are shown in terms of the **net land area**, based on the City's GIS parcel fabric.
- 3. Calculate Current Density.** The net density for each Employment Area is calculated from the 2016 land supply and employment estimated in the previous steps (Table 25);
- 4. Establish Growth Outlook.** For built areas (the Bayfront and other central Urban Areas) density is set to increase in accordance with *Growth Plan* policy directions. For newly developing areas (the developing greenfield areas and AEGD) density is set to reflect the types of economic activity anticipated over the horizon to 2051. Growth at the HIA is an allocation to the facility itself, not to the AEGD.
- 5. Determine Employment Capacity.** Employment capacity is calculated by applying the density factors in 2051 to the net vacant and occupied land supply. The density of employment area job growth over the 2016 to 2051 period is an output of this calculation.

The results are summarized in the data tables in the following pages.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

E4

The estimated 2016 employment by area and LNA category is shown in Table 27 below.

Table 27

Step 1: Estimated 2016 Employment by Area

LNA Category		Employment	Share
1. Outside Settlement Area	<i>Airport Facility (HIA)</i>	2,000	3%
2. Bayfront Industrial Area	<i>Bayfront Industrial Area</i>	20,430	31%
3. Central Urban Areas	East Hamilton Industrial Area	5,500	8%
	Stoney Creek Business Park	15,640	24%
	West Hamilton Innovation District (WHID)	2,920	4%
	Dundas Industrial Area	770	1%
	Hester Industrial Area	130	<1%
	<i>Total Central Urban Areas</i>	24,960	38%
4. Developing Greenfield Areas	Ancaster Business Park	4,620	7%
	Flamborough Business Park	1,700	3%
	Red Hill North Business Park	8,150	12%
	Red Hill South Business Park	2,470	4%
	<i>Total Developing Areas</i>	16,940	26%
5. Airport Emp. Growth District	<i>AEGD Employment Area</i>	1,030	2%
Employment Areas Total	City-wide Total from Table 25 (2016 Base)	65,350	100%
	City-wide Urban Total excluding HIA facility	63,350	97%

Source: Lorius and Associates estimate, based on City of Hamilton 2016 Employment Survey information for designated Employment Areas and Statistics Canada information on employment by NAICS sector. Employment Area totals are adjusted upwards to a 2016 Census base to account for existing businesses that are 'missed' by the survey. A small additional adjustment is made to account for private contractors (mainly truck drivers and construction workers). May not add due to rounding.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

E4

The estimated 2016 land supply is shown in Table 28 below. The 2016 supply for the Bayfront Industrial area does not include intensification potential on the Stelco lands, which is added in the next step.

Table 28

Step 2: Estimated 2016 Land Supply by Area (Net ha)

LNA Category	All figures in net ha	Occupied	Vacant	Total	%Built
1. Outside Settlement Area	<i>Airport Facility (HIA)</i>	560	n/a	560	n/a
2. Bayfront Industrial Area	<i>Bayfront Industrial Area</i>	1,340	40	1,380	97%
3. Central Urban Areas	East Hamilton Industrial Area	150	10	160	95%
	Stoney Creek Business Park	515	85	600	86%
	WHID	35	10	45	79%
	Dundas Industrial Area	20	0	20	100%
	Hester Industrial Area	5	0	5	100%
	<i>Total Central Urban Areas</i>	725	105	830	88%
4. Developing Greenfield Areas	Ancaster Business Park	100	105	205	48%
	Flamborough Business Park	65	70	135	48%
	Red Hill North Business Park	150	70	220	69%
	Red Hill South Business Park	105	175	280	37%
	<i>Total Developing Areas</i>	420	420	840	50%
5. Airport Emp. Growth District	AEGD Employment Area	125	725	850	15%
Employment Areas Total	City-wide total	3,160	1,290	4,460	n/a
	City-wide Urban excluding HIA	2,600	1,290	3,900	67%

Source: Lorus and Associates estimate, based on City of Hamilton GIS Parcel fabric. Occupied supply is net parcel area. Vacant land supply is adjusted (the "gross-to-net adjustment") at 92.5% for Developing Greenfield Areas and 80% for the AEGD Employment Area. No adjustment is applied to the Bayfront or Central Urban Areas vacant supply (100% parcel).

Section 4: Employment Area Land Need

E4

Step E4 Calculate capacity of existing Employment Areas

The estimated 2016 employment density is shown in Table 29 below. The 2016 density for the Bayfront Industrial area does not include intensification potential on the Stelco lands, which is added in the next step.

Table 29

Step 3: Estimated 2016 Employment Density by Area

LNA Category		Occupied ha (Table 28)	Employment (Table 27)	Density (jobs/ha)
1. Outside Settlement Area	<i>Airport Facility (HIA)</i>	560	2,000	3.6
2. Bayfront Industrial Area	<i>Bayfront Industrial Area</i>	1,340	20,430	15.3
3. Central Urban Areas	East Hamilton Industrial Area	150	5,500	37
	Stoney Creek Business Park	515	15,640	30
	WHID	35	2,920	82
	Dundas Industrial Area	20	770	45
	Hester Industrial Area	5	130	23
	<i>Total Central Urban Areas</i>	725	24,960	34.6
4. Developing Greenfield Areas	Ancaster Business Park	100	4,620	47
	Flamborough Business Park	65	1,700	26
	Red Hill North Business Park	150	8,150	54
	Red Hill South Business Park	105	2,470	24
	<i>Total Developing Areas</i>	420	16,940	40.5
5. Airport Emp. Growth District	AEGD Employment Area	125	1,030	8.1
Employment Areas Total	City-wide total	3,160	65,350	n/a
	City-wide total excluding HIA	2,600	63,350	24.3

Appendix "A" to Report PED17010(i)
Page 53 of 60

Source: Lorus and Associates estimate, based on City of Hamilton 2016 Employment Survey information for designated Employment Areas and Statistics Canada information on employment by NAICS sector. May not add due to rounding.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

The next step in the analysis is to forecast growth for the Employment Areas by LNA category, as summarized below. The outlook is based on *Growth Plan* policy directions to increase the density of existing built areas and an expectation of the types of economic activity anticipated in the newly developing areas to 2051. The broad outlook for each of the LNA Employment Area categories is provided below.

Outlook Based on *Growth Plan* Policy and Expectations of Future Economic Activity

- 1. Airport Facility (HIA).** Employment at the HIA facility (which is separate from the AEGD) is anticipated to double from roughly 2,000 jobs in 2016 to 4,000 jobs in 2051 for the purposes of the LNA. These jobs are not included in the assessment of urban employment area land needs.
- 2. Bayfront Industrial Area.** The outlook for the Bayfront area includes the intensification potential of the nearly 800 acre (310 ha) Stelco lands for a mix of new employment, continued growth at the Port of Hamilton facility and the evolution of the existing economic base. Total employment is forecast to increase (on a net basis) by approximately 5,000 jobs to 2051.
- 3. Central Urban Areas.** As shown in Table 28, the Central Urban employment areas are nearly fully built-out at 88% occupied. Overall density is set to increase slightly over the forecast period as these areas age and accommodate a wider range of use, and in accordance with *Growth Plan* policy directions to make more efficient use of existing employment areas and increase employment densities;
- 4. Developing Greenfield Areas.** The developing greenfield areas are anticipated to build-out at current levels of density, reflecting continued demand for the range and profile of new industrial-type use and economic activities shown by the existing pattern of development. The pattern of new development varies from the redevelopment or reuse of space in older employment areas, which is more complex.
- 5. Airport Employment Growth District (AEGD).** The AEGD is anticipated to develop at relatively low densities in a City-wide context over the period to 2051, informed by input from the City's economic development team on recent development activity. The outlook is based on the expectation of demand for increasingly larger and land-extensive goods movement facilities to support the needs of e-commerce, as well as new manufacturing jobs: but with more automation and fewer workers compared to the past.

The results for the LNA categories are discussed in more detail in the sections that follow.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas



The current and forecast density factors are summarized below in Table 30. As shown, overall City-wide density increases from an estimated 24.3 jobs/ha in 2016 to 29.4 jobs/ha in 2051.

Table 30

Estimated 2016 and Forecast 2051 Employment Area Density

LNA Category (density figures in jobs per net ha)	2016	2016-2051	2051
1. Employment Areas Outside Settlement Area (HIA)	3.6	n/a	7.2
2. Bayfront Industrial Area	15.3	n/a	18.4
3. Central Urban Areas	34.6	38.0	35.0
4. Developing Greenfield Areas	40.5	41.5	41.0
5. Airport Employment Growth District	8.1	33.8	30.0
City-Wide Employment Area Total (excluding HIA)	24.3	39.5	29.4

Source: City of Hamilton 2016 Employment Survey and land supply information. Density figures shown for the 2016-2051 reflect density of growth on new lands so are not shown for the HIA or Bayfront, where growth is all intensification.

Density for the Bayfront Industrial area increases from 15.3 jobs/ha to 18.4 jobs/ha as a result of the nearly **5,000 net new jobs added** to reflect the potential for redevelopment on the Stelco lands and continued growth at the Port of Hamilton. The density of the Central Urban Areas is set to increase, in accordance with *Growth Plan* directions for employment intensification. The density of Developing Greenfield Areas is set to remain essentially stable, increasingly marginally over the period to 2051.

The density for the AEGD reflects a pattern of development characterized by large distribution and logistics facilities along with some manufacturing uses. A density of 30 jobs/ha translates into an average of 140m² per employee at between 35-40% site coverage, with very limited office and population-related employment. This distribution is in accordance with the AEGD Secondary Plan policy directions to support the downtown UGC as the City's pre-eminent centre for commercial and office development. A lower average space per employee rate (i.e. higher density) is used for the City's 2019 DC work (1,200 sq.ft. or 110m² per employee) because it includes all types of industrial employment on a City-wide basis.

Section 4: Employment Area Land Need

Step E4 Calculate capacity of existing Employment Areas

The resulting capacity estimates for the existing Employment Areas are shown in Table 31 below. On a City-wide basis, the current land **supply can support approximately 114,420 jobs at full built-out** (excluding the HIA facility). No long-term vacancy factor has been explicitly incorporated into the analysis.

Table 31

Estimated 2051 Capacity of Existing Employment Areas

LNA Category	2016	2016-2051	2051
1. Employment Areas Outside Settlement Area	2,000	2,000	4,000
2. Bayfront Industrial Area	20,430	4,960	25,390
3. Central Urban Areas	24,960	3,910	28,870
4. Developing Greenfield Areas	16,940	17,640	34,570
5. Airport Employment Growth District	1,030	24,560	25,590
City-Wide Employment Area Total (2016 base from Table 25)	65,350	53,070	118,420
City-wide total excluding HIA	63,350	51,070	114,420

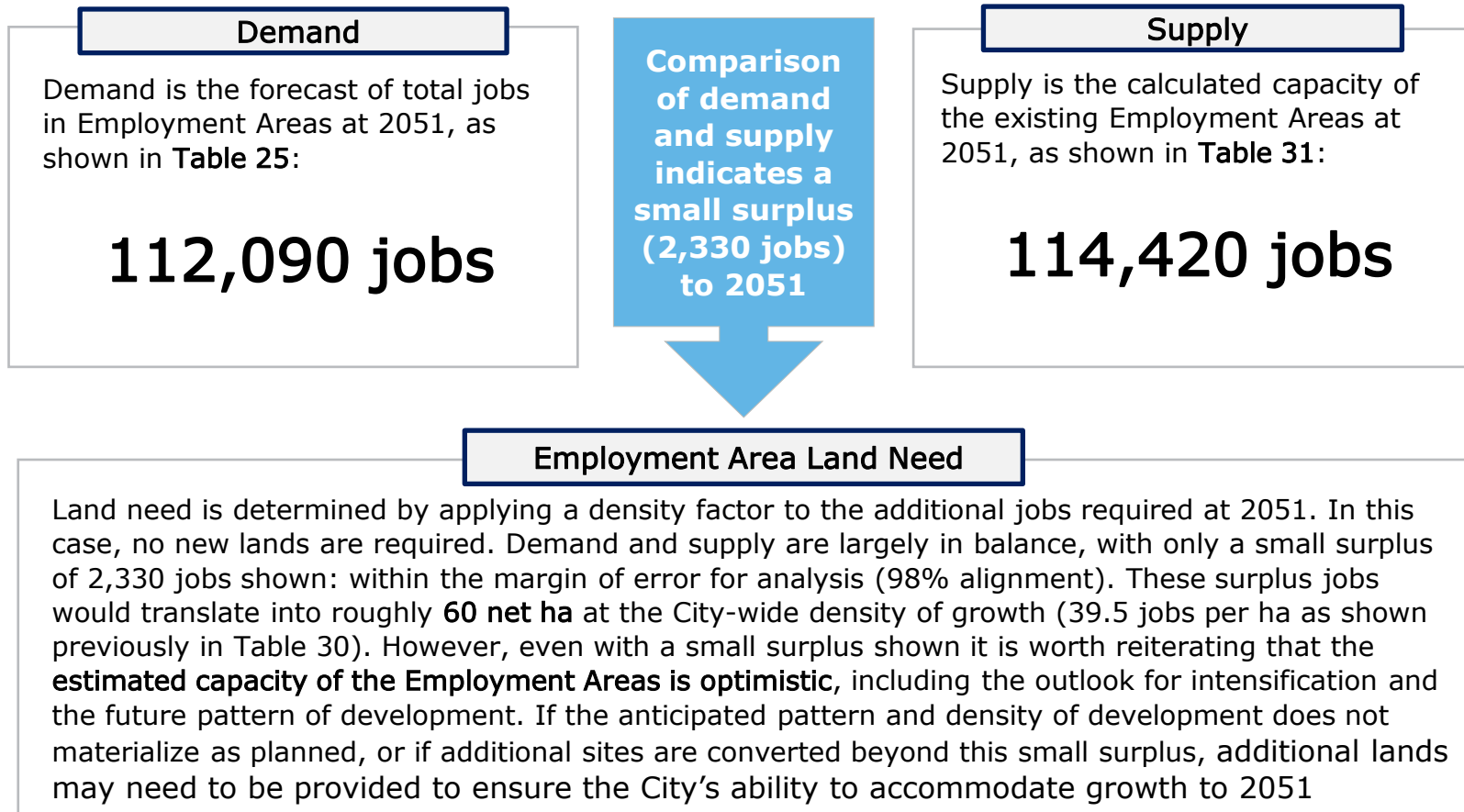
Source: Lorius and Associates estimate, based on City of Hamilton 2016 Employment Survey information for designated Employment Areas and Statistics Canada information on employment by NAICS sector. May not add due to rounding. Employment for areas outside settlement areas is rounded and shown for illustrative purposes only.

The estimated capacity of existing Employment Areas shown above is optimistic. The outlook for the Bayfront anticipates net new job growth after accounting for declines in the existing base. The almost fully-developed Central Urban Areas are set to grow in employment whereas the experience of most other communities (except the City of Toronto) has been one of stability to decline over time. New jobs are added, but others are lost due to economic change and redevelopment to non-employment uses. As such, the analysis implicitly incorporates a certain amount of employment intensification. The analysis also assumes the full use of the designated land supply: 100% development, which is aggressive from a market perspective. As such, the above analysis anticipates a very efficient use of the employment area land and building supply over time, in accordance with the broad economic outlook and *Growth Plan* policy directions to increase employment densities.

Section 4: Employment Area Land Need

Step E5 Establish Employment Area land need

Similar to Community Area land need, forecast demand and calculated supply are brought together in the final step of the analysis for Employment Area land needs. The output is a conclusion as to whether there is a sufficient amount of land in settlement areas to accommodate forecast growth to the *Growth Plan* horizon at 2051. In this case, supply and demand are in balance over the period to 2051.



Section 5: Conclusions

Reconciling results of the analysis

As discussed in Section 3, the Community Area analysis shows a range of land need depending on the intensification target and density factors applied to the scenarios. Land need is highest under the *Current Trends* and *Growth Plan Minimum* scenarios and land need is lower under the *Increased Targets* and *Ambitious Density* scenarios. As discussed in Section 4, the Employment Area analysis shows that supply and demand are in balance over the period to 2051, with only a small surplus shown.

Community Area 1,340 to 3,440 ha Required

Community Area land need ranges from **1,340 ha** under the *Ambitious Density* scenario to **3,440 ha** in the *Current Trends* scenario. A land need of **1,630 ha** is shown for the *Increased Targets* scenario, which envisions a denser pattern of new residential development while still maintaining an aggressive target for intensification.

Employment Area No New Lands Required

Supply and demand for Employment Area lands are in balance, with no additional lands required for current planning purposes. Comparing a total **demand of 112,090 jobs** to a calculated capacity of **114,420 jobs** suggests a small surplus over the period to 2051; approximately 60 net ha or 150 net acres.

These results are best estimates based on available information and the mandated method for the LNA set out by the Province. The results could change based on new information or a different approach to the analysis. And, as noted in the introduction, the City of Hamilton continues to engage with Provincial staff to review the results of the GRIDS 2 update. A process of public consultation will also be undertaken as part of the approval process for the MCR and implementing OPA(s). As a result, the results of the LNA summarized in this Technical Working paper may be subject to revision depending on the feedback received through the process of public consultation and Provincial review. In particular, the results may need to be revisited at the MCR OPA stage to update for new information such as building permits, housing completions or other economic factors that may have changed. However, under any of the land need scenarios, some level of greenfield expansion will be required to 2051.

Section 5: Conclusions

Consultation, review and next steps

The purpose of this Technical Working Paper is to provide the results of our assessment of urban land needs over the period to 2051. The analysis has been undertaken in accordance with the *Growth Plan* (2019, as amended) and mandated Provincial method for completing the analysis. Depending on the scenario that is ultimately endorsed by Council, further analysis will need to be undertaken by the City to implement the associated greenfield density and intensification figures.

The *Increased Targets* and *Ambitious Density* scenarios, in particular, are based on elevated intensification targets (beyond the minimum *Growth Plan* requirement) and a progressively denser pattern of ground-related housing over the planning horizon. From a market perspective, both scenarios may be a challenge to achieve towards the end of the period to 2051 as the supply of greenfield lands become increasingly constrained. As such, careful monitoring and reporting on progress will be required to ensure a balanced housing supply is made available to accommodate all housing market segments.

Further analysis will also be required from an employment perspective, especially in light of the conclusion that no additional lands are required. Rather than determining the preferred location of a new employment area, the strategic objective under these circumstances is to encourage the most efficient use of the existing land base. To encourage the most efficient use of the occupied supply, intensification must be facilitated especially in the developed central urban employment areas. To encourage an efficient use of the vacant land supply, higher intensity employment uses must be encouraged through a combination of land use planning permissions and incentives for new users to adopt high quality building standards. This objective will be a particular challenge to achieve in the AEGD, where demand is expected to be strong for relatively low-density goods movement and logistics facilities, along with some new manufacturing uses.

Through the upcoming process of review and consultation, it is also likely that additional questions will arise and further information requests will be made regarding the LNA and its implications for the MCR and GRIDS2. The City will have the opportunity to address these and other land needs-related matters as it moves forward with the process of consultation and Provincial review.

