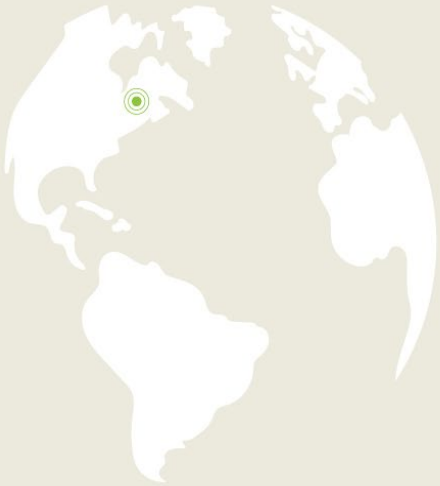
Industrial & Logistics Land Strategy for the New Official Plan



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Introduction

The new Official Plan is a strategic document that describes how the city will grow over time, where we will place major infrastructure, how we will achieve our greenhouse gas emission targets, and guide the development and evolution of communities. On December 11, 2019, Council adopted new growth projections for population, housing and employment. A series of policy directions for the new Official Plan was also adopted, establishing the framework and direction for managing projected growth throughout the 25-year period of the new Official Plan. In addition, the Provincial Policy Statement (PPS) also provides policy direction on land use planning in Ontario, including employment growth.

The growth projections to the year 2046 anticipate more population growth annually than seen in the past, primarily based on increases in immigration, both international and domestic. This population growth has a direct impact on the employment growth, which includes the work force that lives in Ottawa along with commuters from the city of Gatineau and outlying communities and persons with more than one job. By 2046 the projected employment is estimated to be 827,000 jobs, a growth of 189,400 jobs representing a 30 per cent increase from 2018.

These 189,400 jobs will come from a variety of sectors such as the Federal government, health, education, high-tech, tourism, general retail, agriculture, resource extraction, and industrial and logistics. This document presents a strategy that primarily focusses on the latter sectors of industrial and logistics to ensure sufficient lands are designated and preserved for the needs of the local population and help balance the local economy.

In the past, this study would have been called an *Employment Land Review*, referring to the PPS definition of *employment areas* to calculate the amount of land required for designation throughout the time period of an Official Plan. The term *employment* in the context of this study is planning jargon and is meant to capture a set of specific land uses and occur within business parks and industrial subdivisions, rather than the broader and more general use of the term. To further clarify, this strategy intends to scope the analysis of land requirements to the specific land uses as defined by the PPS, being industrial and logistics uses. The Industrial and Logistics Land Strategy is therefore a land budget for the industrial and logistics job component that is a part of the overall city-wide employment growth to 2046. All of the other jobs will be accommodated in the other designations and special districts of the Official Plan through infill, reuse, redevelopment, additions to existing buildings, or as part of the community land need on greenfield lands.

The strategy starts with some background for the designations in the new Official Plan that correspond to *employment areas* as defined by the PPS. The policy context of the PPS, the new Official Plan policy directions, and the history of *employment lands* and their associated Official Plan designations in past plans will then be considered alongside contemporary trends influencing the need and configuration for these uses. An estimate of the industrial and logistics job component of the employment growth will establish the general demand to the year 2046 and a review of existing industrial and logistics areas will establish the existing supply. Recommendations will follow on strategic locations for future industrial and logistics lands and how they may be incorporated into the new Official Plan.

Section 1: Background and History

1.1 Purpose of Employment Area designations

Municipalities in Ontario are directed by the 2020 Provincial Policy Statement (PPS) to designate, in their official plans, enough lands to accommodate population growth and provide for a range and mix of land uses, including lands for employment purposes, up to a 25-year horizon. Planning for employment in this time horizon includes providing defined *employment areas* designated in municipal official plans. *Employment areas* defined in the PPS include “clusters of business and economic activities including, but not limited to, manufacturing, warehousing, offices, and associated retail and ancillary facilities”.

Despite the generic label of “employment areas”, the definition focusses on specific employment land uses. These *employment areas* recognize the needs of specific land-uses, and do not include all areas where jobs occur within a municipality. For example, although office clusters, such as downtowns or central business districts, may appear to be an *employment area* as defined by the PPS, these areas typically receive other designations such as *mixed-use centres* or *urban growth centres* and are less about preserving office space and more about creating vibrant areas and permitting a variety of uses. In contrast, *employment area* designations typically focus on large industrial subdivisions and business parks. To differentiate from the more generic commercial employment areas, italicized *employment areas* or *employment lands* in this document intends to reference the specific limited uses defined by the PSS.

Employment area designations intend to preserve land for uses that have three broad needs:

1. Protection of their ability to operate and expand
2. Provision of land for uses that would otherwise be unable to compete for such lands in the open market against uses with higher-rents
3. Preservation of lands at strategic locations that ensure the efficient movement of supplies, materials or goods

Uses intended for *employment areas* have the potential to create adverse impacts (like noise, emissions, or traffic) on more sensitive institutional or residential uses. By strategically identifying and protecting *employment areas* from the encroachment of more sensitive land uses, the continued operation and expansion of the intended primary uses, particularly manufacturing and industrial uses is secured.

Protected *employment areas* also allow for the establishment of uses that would otherwise be unable to compete for land in the open market with other more lucrative uses, such as stand-alone retail, are typically able to afford higher land costs or market rents. By limiting the range of permitted uses and restricting the ability to convert *employment areas* to other functions without substantial justification in a comprehensive review of Official Plan policy (as required under the PPS, Section 1.2.2), municipalities can support and strategically direct the location of uses intended for *employment areas* to parts of the city able to meet their requirement for large land bases and relatively lower-cost lands.

Finally, many uses directed to *employment area*s have specific requirements relating to transportation and other physical infrastructures associated with transportation and heavy vehicles. The PPS provides additional protection for *employment areas* situated in proximity to what are termed *Major Goods Movement Facilities and Corridors*, being major highways and intermodal routes required for the movement of goods. This protection is intended to minimize conflicts due to the frequent loading, unloading, and heavy truck traffic associated with warehousing, manufacturing, and logistics uses. One of the major trends identified in Ottawa’s 2019 Goods Movement Backgrounder was the expansion of a range of new, large scale distribution centres requiring direct highway access. This shift is attributed to the increasing importance of e-commerce and changes in retail that are de-emphasizing the importance of physical store locations. Protection of *employment lands* along goods movement corridors enables

industrial-related uses to cluster around good quality transportation infrastructures, minimizing conflict associated with transportation and maximizing the potential for these *employment areas* to succeed.

1.2 Employment Areas since Amalgamation

As the seat of Canada's Federal Government, the Federal bureaucracy has a disproportionate impact on the employment landscape within the City of Ottawa. Historically, this has been recognized in successive Official Plans of the former Regional Municipality of Ottawa-Carleton and of the amalgamated City of Ottawa after 2001.

In past Regional Plans, an emphasis was made on economic activities served by a well-connected road and transit system in "relatively few concentrated locations" in the then-developing suburbs. This followed the pattern of concentrated major office campuses established by the Federal Government throughout Ottawa in areas like Tunney's Pasture and Confederation Heights. The Regional Official Plan immediately prior to amalgamation designated *Town Centres* in suburban areas, and *Primary Employment Centres* and *Business Parks* throughout the Plan. The former two were intended for a wide mix of land uses. *Business Parks* most closely aligned with more recent *employment area* designations and were associated with more impactful manufacturing and logistics uses requiring variable degrees of separation from more sensitive uses.

From amalgamation and the subsequent adoption of a new Official Plan in 2003, policies continued to emphasize large-scale mixed employment concentrations. *Mixed-use Centre* designations generally incorporated the former *Primary Employment Centre* and *Town Centre* designations. *Mixed-use Centres* often coincided with major federal office clusters. They were targeted for a broad range of uses including institutional, retail and service uses in clusters of 5,000, or up to 10,000 jobs as *Town Centres* in suburban communities. The former Regional Official Plan *Business Park* designation was split into new *Enterprise Area* and *Employment Area* designations. These areas were intended for a large number of jobs and corresponded to *employment areas* under the present and past Provincial Policy Statements.

Employment Area and *Enterprise Area* designations were clusters large enough to support at least 2,000-jobs accommodating noxious and otherwise impactful uses, or alternately, to enable "prestigious uses", combinations of office and low-impact "clean" industrial uses with a desire to cluster with similar uses. These prestige uses are associated with the high-technology industry, with its most established cluster in Kanata North. *Enterprise Area* designations were uniquely intended to accommodate housing at medium or higher densities, balanced with possibly equal proportions of less impactful uses associated with the technology industry. This designation was a departure from the strict definition of *employment areas* in the PPS. *Enterprise Area* designations marked an intent to allow for better integration of lands protected for employment purposes with the surrounding built environment, inheriting the campus-type concentrations of employment found across Ottawa.

Official Plan Amendment #180 to the 2003 Official Plan was adopted by City Council and approved by the Ministry of Municipal Affairs in 2017. Amongst wide ranging changes, urban *employment lands* were consolidated into a singular *Urban Employment Area* designation. The allowance for residential uses in former *Enterprise Area* designations were removed from the new *employment area* designation but were recognized in some instances through a site-specific exception. When residential development did occur on *Enterprise Area* designations, they clustered into one area rather than being mixed throughout the designation. The goal of integrating residential and employment uses was never realized and led to the dissolution of the unique designation. The new Official Plan designations described in Section 3.2 of this document demonstrate a continued desire to establish a finer grain of uses within *employment areas* and integrate certain uses into the urban fabric building on the experiences of the *Enterprise Area* designation.

Employment land strategies in Ottawa are distinct in comparison to other Ontario municipalities. The lack of differentiation between different scales of potentially noxious, industrial or manufacturing uses, and in the prior allowances for residential uses in *employment areas* are unique Ottawa policies[1].The lack of differentiation between *employment areas* based on degrees of impact on other uses is associated with the predominance of low-impact office employment in Ottawa and the proportionally small area and impact of the industrial, manufacturing, and logistics uses that do exist. As compared to other parts of the Province, particularly the more industrialized Greater Toronto Area, the smaller scale and less impactful nature of *employment area* uses in Ottawa have not warranted a series of designations to regulate a range of highly impactful and noxious industrial functions.

Employment Areas in the rural area of the 2003 Official Plan were limited to a single, if expansive area to the west of the urban portion of the city. The *Carp Road Corridor Rural Employment Area* designation, was associated with a wide variety of *employment area* uses and large rural parcels. Following passage of Official Plan Amendment #180, this area was designated as a *Rural Employment Area* along with three other rural business parks at strategic locations or with a significant number of existing jobs. This new designation helped focus employment growth outside of villages rather than scattering throughout the rural area.

1.3 Focusing Employment Areas on Industrial and Logistics

In the past, land budgets for *employment areas* would have been referred to as "*employment land reviews*", as was the case in the previous Official Plan review. Focussing on areas for industrial activities and an emerging trend in distribution centres warrants a label that more accurately describes the types of business clusters to be designated than "*employment areas*", which is a specific and defined term for land use planning. The more generic use of the word "employment" can imply any type of employment and economic development more broadly, which is not the intention of this land budget. This Industrial and Logistics Land Strategy intends to provide enough lands for industrial-related jobs that is a component of the overall city-wide job growth to 2046. The term "industrial and logistics" intends to convey the specific uses that these lands are reserved for, rather than any other employment that could locate in other parts of the city.

[1] Hemson and Urban Strategies, 2016. *Ottawa Employment Land Review Final Report. 2036 Employment Projection Update.* Planning Committee, November 22, 2016.

Section 2: Trends and Drivers of Change

Planning for the future of industrial and logistics lands should consider current trends in the sector along with what drivers could change or be disruptive to the sector. As Ottawa grows into a larger city it will become more integrated into networks from regional to international scales. This in turn generates new opportunities for improved connections, as a larger city increases its power of attraction and presence in a variety of markets. On February 27, 2019 Ottawa Council adopted the report *Ottawa Next: Beyond 2036* as the work program for the new Official Plan[2]. This was a scenario-based document that explored the forces that will shape Ottawa over the next century. Three scenarios were considered: a government focussed economy, a boom from a knowledge-based employer with 100,000 new jobs, and a mega-region with enhanced connections with Toronto and Montréal. These scenarios helped develop the drivers of change and considerations for economic development and planning for *employment areas*:

- Understanding how technology can be implemented to the benefit and in support of the City's goals and objectives
- Maintaining non-technological functionality for key functions to be resilient and prepared for emergencies
- Creating and strengthening urban environments that are supportive of a knowledge-based work force
- Determining the future role of the airport for Ottawa and as part of a mega-region
- Emphasizing the importance of business linkages and relationships with Toronto and Montréal
- Becoming a hub for eastern Ontario/western Québec
- Strengthening linkages of ground and air transportation networks
- Facilitating cross-pollination between sectors, entrepreneurs, government and not-for-profit

Employment areas in Ottawa should then become diverse to be resilient to unknown changes in the economy. Some areas may be ready to evolve to become more diverse environments that support a knowledge-based work force, while others should focus on strengthening freight-transportation linkages so that collectively these areas help establish Ottawa as a hub in eastern Ontario and western Québec.

Before examining some of the trends and potential longer-term drivers of change in the industrial and logistics sector, the impact of the recent pandemic in the shorter-term should be considered.

2.1 COVID-19 Implications

Ontario declared a state of emergency in response to the spread of the Novel Coronavirus (COVID-19), including the closure of all business activities deemed non-essential, on March 23rd, 2020. This included a vast range of businesses, including most retail, restaurants, personal services, arts and culture, hospitality and office establishments. From spring to summer, businesses gradually re-opened allowing for some resumption of in-person operations in line with evolving public health guidelines. During the fall however, restrictions returned in locations with escalating cases of COVID-19, including Ottawa.

The impact to the economy and business operations experienced in 2020 will not likely continue to the same degree after a vaccine has been distributed to the general population. While the business and activity restrictions have been disruptive, assuming a continuation of the current restrictions over the long-term would result in significant economic impacts to 2046 and is not a prudent or practical assumption for long-term land use planning.

[2] City of Ottawa et al, 2019. *Ottawa Next: Beyond 2036. Draft Final Report. Scenarios, Change Drivers, and Planning Considerations.* Planning Committee, February 14, 2019.

The long-term effects of a prolonged closure of the economy are difficult to predict, as impacts are ongoing, and have been unevenly distributed across various sectors. Retail, accommodation and food services have been most impacted as they are largely dependent on in-person operations and discretionary spending[3]. In response, Ottawa is deploying numerous economic recovery initiatives in partnership with a range of stakeholders to support local retail and food services business, amongst others. Restriction of in-person activities has increased the use of e-commerce by consumers. Though e-commerce and the pressure placed on bricks and mortar retail on our main streets was a trend in place well before the pandemic, e-commerce has since helped many stay in business. The pandemic, early lockdown and subsequent phased reopening has increasingly influenced consumer habits and required all businesses to have an effective online presence as well as to pivot or adapt their offerings.

Some sectors in Ottawa have not been as impacted by the pandemic. In addition to the more well-known public administration, health and education sectors, the high-tech and industrial sectors have also been able to progress through the pandemic. Ottawa has a strategic location between Montréal and Toronto and is benefitting from the development of multiple large, modern distribution centres. Highly automated, these centres enable the rapid ordering and delivery of goods from many retailers directly to the consumer. In terms of existing lands, industrial real estate vacancies in Ottawa decreased by the second quarter of this year at the height of the initial lockdown following an increase in supply earlier in the year. Valuation of industrial lands (at the per square foot rental rate) has declined for the first time in Ottawa since 2018. This decline is credited with available lands being lower quality rather than a decrease in demand[4].

The performance of the industrial sector through the pandemic is not isolated to Ottawa. Data on manufacturers' sales and values of inventory by sector from Statistics Canada show little impact on raw materials, finished goods or goods in process at the national level. From March to May there was a drop in the values of new orders and the sales of goods manufactured but these rebounded back to pre-COVID levels throughout July to September[5], summarized in Figure 1.

[3] City of Ottawa, 2020. *COVID-19 Recovery Update*. Finance and Economic Development Committee, September 1, 2020.

[4] CBRE, 2020. *Canada Q2 2020 quarterly statistics.* https://www.cbre.ca/en/research-and-reports/Canada-Office-and-Industrial-Quarter-Stats-Q2-2020

[5] Statistics Canada. Table 16-10-0047-01 Manufacturers' sales, inventories, orders and inventory to sales ratios, by industry (dollars unless otherwise noted)

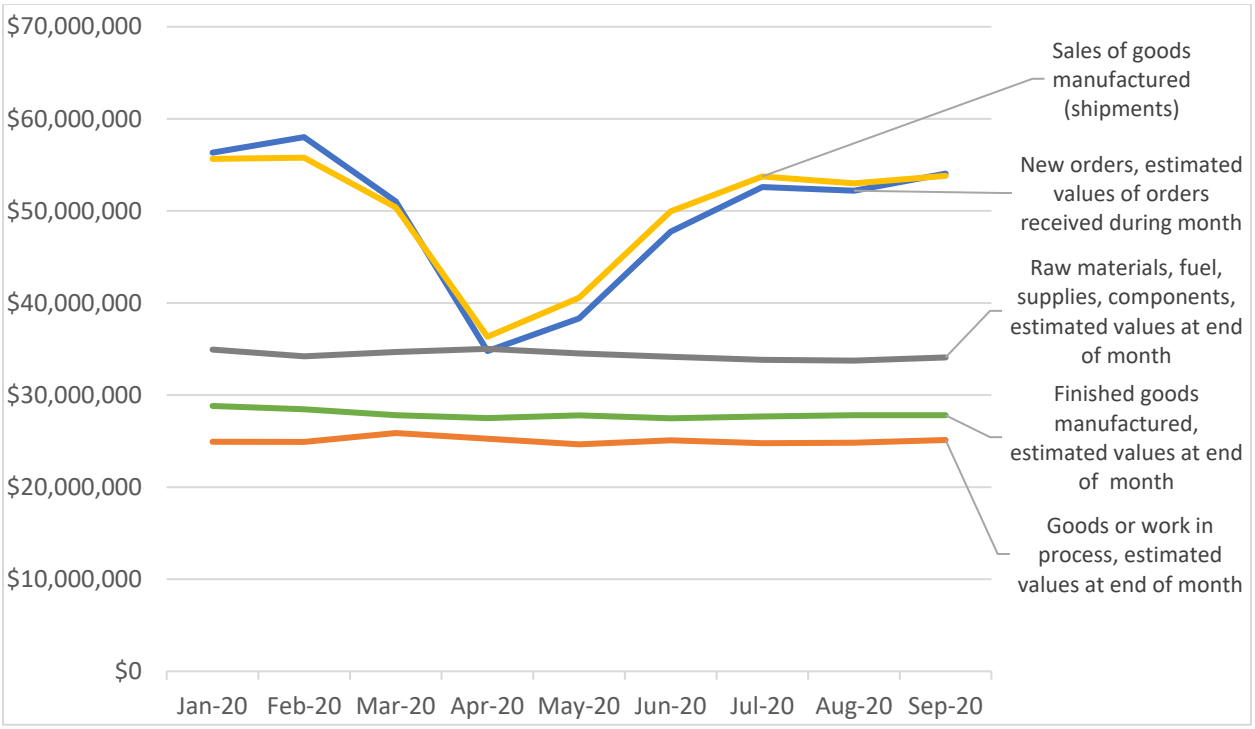

Figure 1: National Manufacturer's Sales and Inventory Values, January to September 2020

The continued trend toward online retailing, intensified by the pandemic, and Ottawa's market position as a central location for eastern Ontario and western Québec, are drivers of change that will continue contributing to distribution centre demand on industrial lands in Ottawa during and after the pandemic.

2.2 Trends and Change Drivers in Industrial and Logistics

Ottawa Next: Beyond 2036 identified potential drivers of change in economic development to plan for and help Ottawa prepare for potential long-term changes. Technology will result in direct and indirect changes. For example, e-commerce allows direct access to suppliers from consumers and businesses and essentially competes with suppliers that interacts with these markets in a more traditional way. There is also an indirect impact on how goods and materials reach the consumer and has translated into an increase in demand for distribution and warehouse sites in clusters that have direct access to goods movement corridors.

Manufacturing practices are also witnessing changes through technological innovations and are experiencing a decentralization and fragmentation similar to that seen in logistics. Prefabricated building manufacturing is exploring new technologies and processes to allow for automation and greater build-to-specification designs rather than material standards driving the designs, which leads to a reduction in costs and just-in-time delivery of building components to construction sites. Much of the driver for this change comes from the increasing income-housing-price gap and increasing labour costs. Demographic changes to an older population resulting in labour shortages, particularly in the "construction trades"

sector, adds pressure to labour costs. Canada is a country where the labour costs of construction present an opportunity for prefabrication[6].

Where prefabrication can benefit larger producers employing economies of scale, smaller scale manufacturers, closer to the end-users, may be able to leverage the rise of increasingly sophisticated and affordable additive manufacturing technologies, also more commonly known as 3D printing. This new form of manufacturing allows for rapid proof of concepts and prototyping, and coupled with e-commerce technology for consumer-direct ordering and increasing options for same-day delivery, has the potential to be a change driver by removing intermediaries in the supply chain[7].

Goods movement in Canada starts with ports of entry for commercial trade and cargo (such as a marine port or airport), movement from that port to hubs (such as a distribution centre or warehouse) for further dissemination, and eventually reaching the end-consumer through delivery. On a larger scale, Ottawa is a hub from a variety of ports from the Greater Toronto Area and other US border crossings in the west; and, Montréal, Cornwall, the Maritimes, and other US border crossings in the east. In addition, some limited freight is handled through the Ottawa International Airport. Goods movement by rail has focussed on direct linkages between Montréal and Toronto, and rail lines through Ottawa focus on passenger transportation only. Goods movement to and from Ottawa is primarily by ground-transport via Highways 417, 416 and to a lesser extent Highway 7. Inter-provincial goods movement to Gatineau and other destinations in Québec uses King Edward Avenue and the Macdonald-Cartier Bridge to access Autoroutes 5 and 50; however the Ontario portion of this route is in densely built-up areas of the Downtown Core and the possibility of finding lands along this corridor that are suitable to supporting logistics functions are non-existent, so this corridor is not further considered in the strategy for the purpose of our land budget. This may change if a new interprovincial crossing were to be designated for trucking and goods movement.

Drivers of change for logistics in Ottawa should then consider changes in the supply-chain network of commercial goods and ground transport. Figure 2 shows the major highway network in Ottawa that connect the city to various goods movement origins.

[6] McKinsey & Company, 2019. *Capital Projections and infrastructure. Modular construction: From projects to products.* https://www.mckinsey.com/~/media/mckinsey/industries/capital%20projects%20and%20infrastructure/our%20insights/modular%20construction%20from%20projects%20to%20products%20new/modular-construction-from-projects-to-products-full-report-new.ashx

[7] Deloitte, 2015. *The future of manufacturing. Making things in a changing world.* https://www2.deloitte.com/tr/en/pages/manufacturing/articles/future-of-manufacturing-industry.html

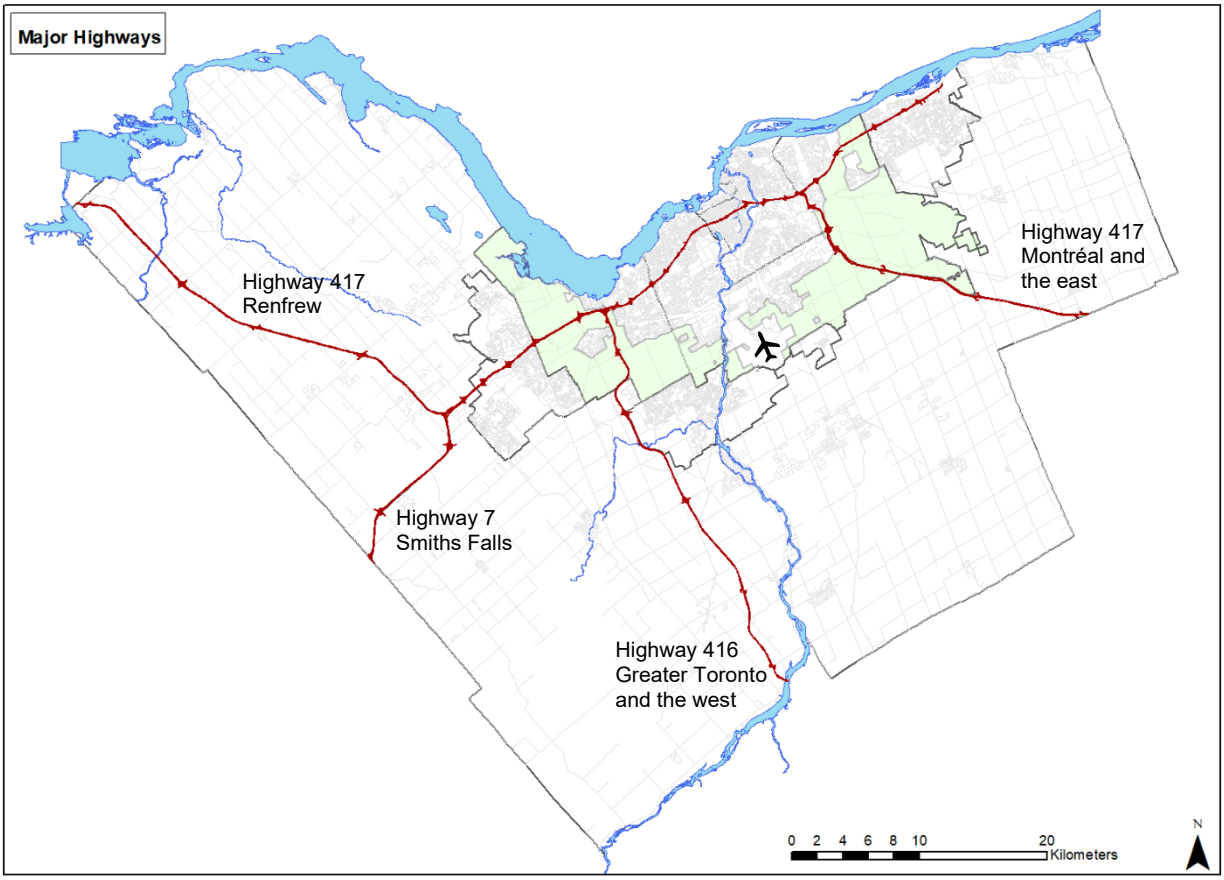

Figure 2: Major Highway Network in Ottawa

Several trends impact goods movement in Ottawa, nationally and globally. Some key trends identified in a goods movement backgrounder for the Transportation Master Plan[8] are summarized as follows:

- Distribution centres

  With the growth in business-to-consumer and business-to-business transactions via e-commerce and other retail channels, final deliveries are made directly to customers from distribution centres. Also known as urban consolidation centres or logistics spaces that bundle goods at strategic locations for onward delivery so that there are always full loads, these facilities help reduce congestion and promote more energy-efficient modes of delivery over shorter trips. Customers may not necessarily receive their deliveries from a distribution centre within the same municipality or even region. Distribution centres also tend to be financed over a shorter-time frame, allowing them to be nimble to changes in technology and/or the market, including becoming vacant if no longer needed at a location.

  Not all distribution centres are large buildings. As part of the distribution network to the end-customer there has been a rise of the smaller distribution or “micro fulfillment” centre in highly accessible urban locations. These can be stand alone buildings or embedded within an existing building such as a grocery store and complement an existing retailer.

[8] City of Ottawa, 2019. *Goods Movement Backgrounder, Final Draft.* Transportation Services Department.

- Last kilometre delivery

  Also known as “last mile” or “final mile” delivery, the demand for immediate pick-up and delivery, or express delivery, has grown. The move towards multi- and omni-channel retailing[9] has increased the ways in which end-user businesses and individuals can purchase goods. Retail models are transitioning to bypass brick-and-mortar stores so that products are received direct from a distribution centre. Rising residential deliveries and the frequencies of these deliveries increase the strain on the delivery network. Deliveries have expanded beyond speciality retail and encompasses traditional retail and food from grocery stores and restaurants. Almost anyone can become a courier, either full-time or part-time. Medium-sized trucks have increased over larger tractor-trailers and there may be a further devolution to smaller passenger-sized vehicles.

- New technologies and delivery segmentation

  The vehicle of delivery is changing and is no longer solely a cube-van powered by gasoline. New low- and no-emissions technologies such as electric, hybrid or liquefied natural gas are more commonplace for last kilometre deliveries. Other formats such as drones for lightweight cargo or cargo bicycles for shorter distances are also being used.

  Technology also drives the operations within warehouses where robotics and automation bring materials to workers rather than workers moving throughout the warehouse space. The application of robotics has created systems for automated storage, retrieval, sortation, and packaging. The continued modular development of these automation systems makes the refit of existing older warehouses or industrial buildings possible, rather than having them completely rebuilt. Existing vacant industrial buildings in central urban locations with good access to end-users are good candidates for these refits. Despite pressures for other uses, conversions from some of the existing industrial platform to other uses in the short-term should consider their future potential to continue contributing to economic activity over the longer-term.

  Advancements in automated storage and retrieval systems may continue to be more compact enabling them to be installed in more buildings, such as micro fulfillment centres, throughout the urban area, allowing improved access to the end-user and potentially reducing the issues and limitations currently experienced in last kilometre delivery.

- Emergence of connected and autonomous vehicles

  Long-haul trucking is considered the most automatable form of freight transport. To date most of regular long-haul activity is conducted by truck fleets, which are seen as the most likely to incorporate autonomous vehicle technology before the general public. This technology has the potential to alter the connections between hubs and end-users that may increase freight catchment areas of existing hubs or establish new hubs along current distribution networks.

- Sustainable road design and competition for road space

  Along with many cities throughout North America, Ottawa has adopted complete streets policies and guidelines to provide a safe and attractive environment for all corridor users and transportation modes. Many guidelines accept that trucks and other vehicular traffic will have priority over other corridor users in industrial areas but this may be reversed elsewhere. New issues, such as encroachment into dedicated lanes or spaces, have arisen as a result of the increased competition of road and curb-side space for multi-modal transportation, parking, streetscaping, maintenance, and loading/unloading. These issues remain as barriers for just-in-time delivery from distribution centres and the ability to implement solutions may limit continued growth in this paradigm. Some of the solutions implemented may prevent larger truck movements

[9] Multi-channel retail revolves around a product but treats traditional and e-commerce channels as silos independent from each other. Omni-channel retail revolves around the customer experience across a brand by unifying sales and marketing between channels. https://www.shopify.ca/enterprise/omni-channel-vs-multi-channel

and necessitate alternate forms of last kilometre delivery or micro fulfillment centres throughout more compact urban areas.

These trends reflect impacts on the manufacturing and distribution of goods globally and locally, as well as how local authorities can increase the efficiencies in the interaction between urban form and transportation. These trends are opportunities and challenges that can be managed but not fundamentally changed through land use (for example, growth in e-commerce or the locations of established ports of entry for commercial trade and cargo), and will require examining, and rethinking how the distribution network can adapt to these changes.

Section 3: Policy Directions

3.1 Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) provides policy direction to land use planning and development. The most recent PPS came into effect May 1, 2020 and replaces the PPS issued April 30, 2014.The authority of the PPS is established under section 3 of the *Planning Act*, which requires that decisions affecting planning matters, including Official Plan review, "shall be consistent with" the PPS. The PPS addresses complex inter-relationships among environment, economic and social factors in land use planning and as such is meant to be read in its entirety with the relevant policies applied to each situation.

The PPS seeks to protect *employment areas* for current and future needs as an economic development strategy and directs that *employment areas* shall be preserved and separated from sensitive land uses, with residential and other land uses prohibited within employment areas. The need for separation from sensitive land uses, and prohibition on establishing sensitive uses within *employment areas* is intended to protect the industrial or manufacturing uses intended for these areas in the PPS. Notably, offices do not need to be separated from sensitive uses as they generate no nuisance or adverse impacts from a land use standpoint and in fact are adequately accessed on foot or by public transit without the necessity for any type of personal motor vehicle.

The PPS directs that sufficient lands be designated within an official plan to accommodate the needs for the time horizon of the official plan up to 25 years, including uses intended for *employment areas*. For periods longer than the time horizon of the official plan, the PPS permits planning through an identification rather than designation of lands for *employment area* purposes. Identifying lands for a horizon beyond 25 years can assist municipal decision makers in reserving lands at well suited locations, while maintaining a degree of flexibly to eventually designate depending on the changing nature of employment or land needs of the local area. Identifying these lands over the longer-term also assists with the planning of infrastructure so that potential future needs are also considered in the earlier phases of design and construction. The PPS also permits the conversion of *employment area* designations where it has been demonstrated that the land is no longer required for *employment area* purposes over the long term and that there is a need for the non-employment use.

The PPS provides direction on where *employment areas* should locate within the urban area. These include locations that:

- Efficiently use planned and available infrastructure to avoid unjustified and/or uneconomical extensions.
- Minimize negative impact to air quality and climate change, including the consideration of greenhouse gas (GHG) emissions.
- Are freight-supportive and in proximity to good movement facilities and corridors.
- Occurs adjacent to the existing built-up area.

3.2 New Official Plan Policy Directions

The new Official Plan policy directions were adopted by the Joint Planning Committee and Agriculture and Rural Affairs Committee on December 9, 2019 and by Council on December 11, 2019. The policy directions begin with a strategic outlook, referred to as the *Five Big Moves* through the Official Plan review process:

1. **Growth:** achieve, by the end of the Plan's planning period, more growth by intensification than by greenfield development. This growth will provide for complete communities and a variety of affordable housing options.
2. **Mobility:** by 2046, most trips in the city of Ottawa will be made by sustainable transportation (walking, cycling, transit or carpool).
3. **Urban Design:** improve our sophistication in urban and community design and put this knowledge to the service of good urbanism at all scales, from the largest to the very small.
4. **Resiliency:** embed public health, environmental, climate and energy resiliency into the framework of our planning policies.
5. **Economy:** embed economic development into the framework of our planning policies.

Central to the economic development focus of the Big Move relating to the economy is the recognition that Ottawa requires both a more diversified base of employment types and a broader range of employment locations to provide people the opportunity to work closer to where the live. Building on this direction, two more of the Big Moves direct that by the end of the planning period of the new Official Plan, Ottawa will experience "the majority of growth through regeneration rather than greenfield development", and the "majority of trips will be by sustainable transportation". This direction will translate into a denser urban area in Ottawa, with a greater mix of residential options and other land uses that are also more easily accessible by active transportation and transit. These shifts will help to realize "15-minute neighbourhoods", another major objective of the Plan. These neighbourhoods will be areas where the necessities of day-to-day life will be within ready access of a person's place of residence, including a greater mix and integration of employment options accessible to residents.

There are also specific policy directions for economic development and *employment lands*, which include:

1. Direct employment to Hubs and Corridors.
2. Develop new policies for *employment areas* based on their different contexts (including a level of integration with adjacent areas) and simplify zoning rules to be generally more permissive where the land use context is suitable.
3. Maintain Kanata North as a key economic generator over the next 28 years and increase quality of life through land use planning.
4. Establish the boundaries for a new economic zone centered on the MacDonald-Cartier International Airport and include policies guiding the development of a new Secondary Plan for the area.
5. Support rural economic development throughout all sectors, by introducing policies that support a broad range of land uses that are context sensitive and ensure the projection of prime agricultural lands in recognition of increasing global scarcity.

Currently, the Official Plan has one designation for all of the business parks within the urban area. The associated policies may be the correct approach for some business parks but can be overly restrictive for others.

The scenario-based planning exercise in *Ottawa Next: Beyond 2036* helped establish the basis for the policy directions that highlight the importance of the knowledge-based industry in Ottawa, being the production of goods and services through the use and transformation of data and information. Some examples include high-tech, research and development, government and government-relations, health, education, legal and similar services. For the purposes of land use planning, many of these sectors are primarily office-based, either in single buildings or within a cluster of buildings in a campus like setting. These types of uses typically do not require segregation from other uses, such as residential uses, nor do they require a designation that protects and preserves their ability to operate by excluding other uses. Those requiring separation for security purposes are the exception rather than the rule thus making separation from other uses generally unnecessary for planning purposes. On the contrary today's knowledge-based employers typically do not prefer segregated locations but seek vibrant, mixed-use environments where their workforce can enjoy a range of services, activities, amenities, and residential opportunities in the context of a 15-minute neighbourhood. Often the workforce enjoys such environments with their colleagues, underpinning the importance of social connections for the creation and maintenance of their relationships and networks. Proximity to these services is important as convenience is measured through time and the use of such services can be limited to breaks during business hours or short periods before and after business hours.

In this context, locations for knowledge-based jobs should be able to evolve into mixed-use areas while uses that have more noxious or other disruptive impacts should continue to land preserved for those uses and to be separated from adjacent uses. Other locations with a cluster of businesses that do not necessarily have disruptive impacts to residential uses should continue to only allow for non-residential uses to maintain affordable opportunities for businesses to serve the local market.

The new Official Plan also advances the notion that Ottawa should proactively leverage its central position within the Toronto-Ottawa/Gatineau-Montréal mega-region as a way to broaden and diversify its economic base. In this respect, the identification of strategic locations that can play a role in positioning Ottawa within this mega-region becomes a key consideration. Notably, the role of ground transportation as the principal way through which goods are conveyed to and from major markets means that locations around 400-series-highways interchanges take on a pivotal dimension. It is therefore an equally important consideration for the future of the city, as much by virtue of its own population growth and by virtue of its position with the mega-region, to identify suitable locations for industrial, freight, storage and logistics functions.

Employment growth within the rural area is generally directed to the villages; however, there are some sectors that occur outside of villages such as agriculture and mineral extraction. Manufacturing, assembly, and storage can also occur outside of villages due to the need for separation distances or transportation access. Focussing uses at highway interchanges for assembly, storage, transfer and distribution for operations that can operate with private on-site water and wastewater, and providing more flexibility for other businesses while still protecting prime agricultural lands, will help support the rural economy.

A context specific examination of *employment areas* separates business parks based on the type of uses and operations within them. In Ottawa, four general types can be seen:

1. Traditional Industrial, Freight and Storage (TIFS)

   These business parks are characterized by more traditional industrial-type uses such as manufacturing, warehousing, distribution, and transport. Separating these uses minimizes disruptive impacts to other uses and allows for an environment that is conducive to their operations, such as truck turning movements, loading, and unloading activities.

2. Rural Industrial, Freight and Storage (RIFS)

   These business parks are similar to TIFS but typically rely on private well for potable water and septic for wastewater. The uses tend to be oriented towards outside storage and smaller sized buildings. Separating these uses minimizes disruptive impacts and allows for an environment that is conducive to their operations.

3. Non-Traditional Industrial Mixed (NTIM)

   These business parks are characterized by a broad mix of non-residential uses such as office, light manufacturing, warehousing, trades/contractors, and telecommunications broadcasting. Some community-based uses also locate in these areas such as places of worship, indoor recreational uses and stand-alone day care centres. These operations typically adapt and reuse older vacant buildings that are less suited for modern-day warehousing and transportation and offer a large amount of space with a rent that is affordable.

4. Knowledge-based

   These business parks tend to be more campus-style developments and are mostly comprised of uses such as office, research and development, and training centres.

Given that the purpose of *employment areas* are intended to protect and preserve lands for these uses, and that a significant amount of Ottawa's current and future employment will be knowledge-based with preferences for integration with other services and amenities, the more industrial based business parks should be the focus of a designation for protection and preservation.

More impactful uses, such as manufacturing and warehousing, listed in the PPS as part of *employment areas*, will be directed to the new *Traditional Industrial Freight, Storage* (TIFS) designations in the urban areas, and the *Rural Freight, Storage* (RIFS) designations in the rural areas of the city. Building on the experience drawn from past Official Plans in Ottawa, which attempted unsuccessfully to incorporate sensitive residential uses into designated *Enterprise Areas* as a subset of *employment areas*, the new Official Plan will concentrate on the needs of industrial and logistics lands, given their potential impacts, transportation, and land requirements, and benefits derived from economies of scale through clustering. While the existing *employment area* designations in Ottawa are unique in Ontario as they do not distinguish gradients of impact between *employment area* land uses, the new TIFS and NTIM designations will provide for greater specificity in the types of appropriate industrial and manufacturing uses in defined *employment areas*. Noxious and impactful uses are clearly directed to TIFS areas. Clustering is intended to minimize impacts on abutting uses, with a scoped range of ancillary uses only in direct support of the principal industrial, warehousing or other storage use. To help preserve these lands from being occupied by other uses, non-industrial and logistics uses, including offices, will be limited to being secondary, complementary, and accessory in nature and size.

Thus, the TIFS and RIFS designations in the new Official Plan corresponds to clusters for manufacturing and warehouse primary uses within *employment areas*. TIFS are clusters located within the urban area with access to infrastructure, such as central water, wastewater, and transit services and RIFS are clusters located within the rural area that are intended to have private water and wastewater services if such services are required.

Non-Traditional Industrial Mixed (NTIM) areas in comparison, will accommodate a broader and less potentially impactful range of uses. Institutional uses will also be permitted within this designation allowing them to provide a buffer between TIFS and *Neighourhood* designations. In contrast to existing *Urban Employment Area* and *Rural Employment Area* designations, which include allowances for commercial or service-type uses oriented inwards towards the employees of a given area, NTIM areas are intended to accommodate neighbourhood-oriented service (such as a doctor's office) or retail uses. Sensitive uses

(such as daycares) are also possible within the NTIM areas where they are shown to be compatible with smaller-scale and non-noxious industrial activities, and proximal to neighbourhoods. The premise being that these sensitive uses will be of benefit to the surrounding neighbourhoods, will support the realization of land-use mix and the establishment of 15-minute neighbourhoods that are supportive of sustainable transportation. Only smaller-scale offices should be permitted, unless in proximity to transit services. This will encourage employment concentrations around transit rather than being spread off the transit system.

Rural Industrial Freight and Storage Areas (RIFS) will establish specialized sites, adjacent to highway interchanges and arterials that can serve the land and access needs of the increasing proliferation of distribution centres, and other uses capable of accommodation in a rural, privately serviced context. Following trends towards large-scale warehousing and logistics sites established on the fringes of Ottawa, RIFS will allow uses with potential negative impacts, but also have a need to be close to major 400-series highways, to cluster together and minimize impact on the rural transect, while benefitting from shared facilities. Their location in the rural area, but near to the urban boundary of the city, also positions them to support the rapidly changing nature of the “last kilometre delivery” from new distribution centres. Centralized delivery by independent contractors is enabled by smaller vehicles and a wider communications network through the use of apps on mobile devices.

Knowledge-based areas that have a presence at national and international scales are recognized as *Special Districts* in the new Official Plan. These locations have high potential to be drivers of change for the Ottawa economy and the new Official Plan can help achieve this potential by establishing supportive urban environments and being a gateway for the future work force across the nation or abroad.

Section 4: Growth Projections and Land Need

The amount of industrial and logistics lands that are required for designation in the new Official Plan mostly relies on the number of associated new jobs to 2046. Estimating these specific jobs and the amount of land they will occupy is determined through the following:

1. Determination of land-use categories for the forecast
2. Establishing the current jobs by land-use categories
3. Forecast of job growth by land-use categories to 2046
4. Determining the proportion of job growth in industrial space
5. Applying jobs per hectare densities for new industrial space

4.1 Employment by Land-Use Categories

The overall employment growth is categorized to provide an estimate for the industrial and logistics land need to 2046. These categories are based on land-uses rather than economic sectors because businesses in some economic sectors occur across different land-uses. For example, a firm in the construction sector may have multiple locations where the administrative functions and related jobs are in a large office and the storage and maintenance of equipment and related jobs are in an industrial business park. There are also broad category sectors with multiple distinct components. For example, the *professional, scientific and technical services* sector includes legal services, accounting, engineering, computer systems designs, scientific research and development, and public relations. Jobs in each of these categories occur in different locations, such as downtown offices, along mainstreets, and in business parks.

The land-use based classification of employment is a standard approach in land use planning to estimate specific land needs and was used in the previous Official Plan review[10]. The four categories are large offices, population-related, industrial-related, and other rural-based as shown in Figure 3.

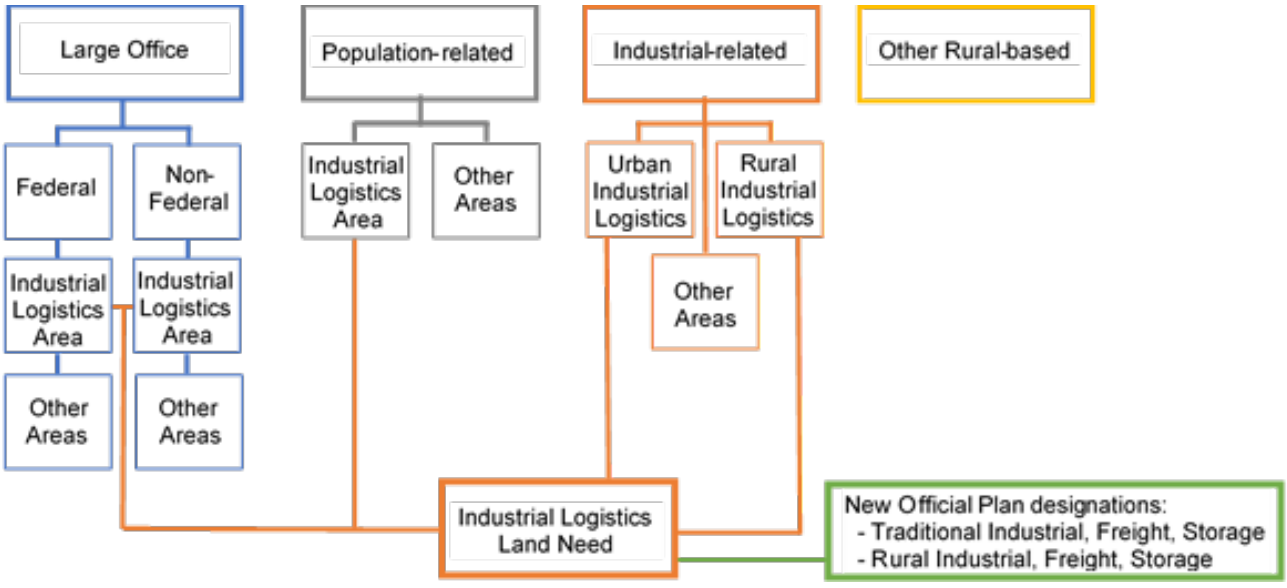

Figure 3: Land-use based employment categories

[10] Hemson and Urban Strategies, 2016. *Ottawa Employment Land Review Final Report. 2036 Employment Projection Update.* Planning Committee, November 22, 2016.

These land-use based categories are further described as follows:

1. Large office: employment in free-standing office buildings of approximately 2,000 square metres or greater. Large office occurs at higher densities than other land uses with the majority of supply provided on a vertical basis and therefore available the land base is generally not a constraint. Development occurs in many locations such as downtowns, other regional centres, along corridors, and in business parks. There tends to be a relationship with large office locations and transportation and transit infrastructure. Specific to Ottawa, this category is further sub-divided into federal and non-federal office recognizing the presence of the federal government in the office market.
2. Population-related: employment that provides services to the local population, primarily in commercial and institutional establishments. This relates to population growth as it represents the services necessary to support additional population. Some examples include retail, health, and education. Most of these jobs will locate in existing built-up areas such as shopping centres, retail strips, universities, schools, hospitals and health-related centres, and tourism-related attractions. Lands for these jobs in greenfield residential development are accounted for in the net-to-gross hectare ratio of the residential growth management strategy[11] and further detailed planning occurs through the secondary planning process. A small portion of this category is assumed to locate on industrial and logistics lands as accessory uses that serve the industrial employees on these lands.
3. Industrial-related: employment in manufacturing, warehouses, transport, construction, and building maintenance and security. Although buildings in older, developed industrial areas are reused these vacancies has not accommodated a significant amount of net job growth. Job growth is typically accommodated in well-located greenfield industrial land. “Urban industrial and logistics” areas correspond to business parks within TIFS, “rural industrial and logistics” correspond to business parks within RIFS, and “other areas” are within NTIM including a scattering of smaller sites throughout the urban and rural areas.
4. Other rural-based: employment throughout the rural area outside of villages, primarily related to agriculture, mineral extraction, waste management, automobile-related, recreation such as golf courses, and other smaller construction and trade contractors.

Some proportion in each of these categories occurs on industrial and logistics lands, either due to proximity to transit for large offices or ancillary uses that are intended to primarily serve the employees within the industrial business park. These land-use based employment categories are thus the basis for estimating the industrial and logistics land need that corresponds to the PPS defined *employment areas* in the new Official Plan to 2046, being *Traditional Industrial, Freight and Storage* and *Rural Industrial, Freight and Storage* designations. Applying these category proportions to the employment growth from the 2046 employment projections provides an estimate on the number or industrial and logistics jobs that need to be accommodated in the new Official Plan.

4.2 Current Employment by Land-Use Categories

The analysis of employment by land-use categories begins with the 2016 Employment Survey conducted by the City of Ottawa. The survey collects data for most employers in the city including the number of jobs, location, and economic sector of the employer. The economic sector corresponds to the North American Industrial Classification System (NAICS), an industry classification system developed by the statistical agencies of Canada, Mexico, and the United States. The system consists of a code that corresponds to each sector of the economy as shown in Figure 4.

[11] City of Ottawa, March 2020. *Residential Growth Management Strategy for the New Official Plan*. Joint Planning Committee and Agricultural and Rural Affairs Committee, May 11, 2020. Appendix 4 *Analysis of Ottawa Residential Net to Gross Ratios* provides additional information on how these lands were calculated.

NAICS Code	Sector
11	Agriculture, forestry, fishing and hunting
21	Mining, quarrying, and oil and gas extraction
221	Utilities
231-232	Construction
31-33	Manufacturing
411-419	Wholesale trade
44-45	Retail trade
482-493	Transportation and warehousing
511-514	Information and cultural industries
521-526	Finance and insurance
531-532	Real estate and rental and leasing
541	Professional, scientific and technical services
551	Management of companies and enterprises
562	Administrative and support, waste management and remediation services
611	Educational services
621-624	Health care and social assistance
711-713	Arts, entertainment and recreation
721-722	Accommodation and food services
811-813	Other services (except public administration)
911	Federal Public administration
912	Provincial Public administration
913	Municipal Public administration
914	Aboriginal Public administration
919	Foreign Public administration

Figure 4: North American Industrial Classification System

Since amalgamation, employment surveys were completed in 2001, 2006, and 2012. While the employment surveys strive to cover all employers, some will inevitably be missed for a variety of reasons. To account for these missed jobs an under-coverage factor is applied consistent with the *employment land* review adopted in 2016. Figure 5 shows the location of jobs and job growth by area from 2001 to 2016.

	Urban Area	Greenbelt Area	Rural Area	Total
Jobs				
2001	465,000	6,900	18,100	490,000
2006	499,900	8,000	22,100	530,000
2011*	534,200	8,200	25,200	567,600
2016	574,300	9,100	26,000	609,400
Share of Jobs				
2001-06	94%	2%	4%	100%
2006-11	94%	1%	4%	100%
2011-16	94%	1%	4%	100%
Job Growth				
2001-06	34,900	1,100	4,000	40,000
2006-11	34,300	200	3,100	37,600
2011-16	40,100	900	800	41,800
Share of Job Growth				
2001-06	87%	3%	10%	100%
2006-11	91%	1%	8%	100%
2011-16	96%	2%	2%	100%

* 2011 is interpolated from the results of the 2012 survey for time period consistency.

Figure 5: Job and Job Growth by Area

Figure 6 shows the location of jobs within existing business parks and remaining jobs outside of business parks in each area from 2001 to 2016.

	Business Parks	Non-Business Parks			Total
		Urban Area	Greenbelt Area	Rural Area	
Jobs					
2001	121,200	348,400	6,900	13,700	490,200
2006	134,100	371,900	8,000	16,000	530,000
2011*	146,000	395,100	8,200	18,200	567,500
2016	139,900	442,100	9,000	18,300	609,300
Job Growth					
2001-06	12,900	23,500	1,100	2,300	39,800
2006-11	11,900	23,200	200	2,200	37,500
2011-16	-6,100	47,000	800	100	41,800
Share of Job Growth					
2001-06	32%	59%	3%	6%	100%
2006-11	32%	62%	1%	6%	100%
2011-16	-15%	112%	2%	0%	100%

* 2011 is interpolated from the results of the 2012 survey for time period consistency.

Figure 6: Jobs and Job Growth by Geographic Area

From 2001 to 2011 job growth in each of the geographic areas has been relatively steady. However, in the next five years from 2011 to 2016 there is a job reduction in business parks and a significant increase within the urban area outside of business parks. The next five-year period in 2011 to 2016 saw a decline in jobs within business parks and a significant increase in other parts of the urban area. In Ottawa, a significant portion of jobs within business parks are office related. Examining jobs by land-use category will identify job changes by land-use inside and outside of business parks, provide a better understanding of the different employment components within business parks, and how they may differ outside of business parks. The land-use analysis was conducted as follows:

- Business Parks: large federal office buildings from the survey were individually reviewed to determine the type of building and nature of the land-use. Large non-federal office buildings utilized an analysis conducted in the employment land review for the previous Official Plan review that aligned large office buildings by address from the City's database with jobs by address from the survey.

  The NAICS for each employer is then used to determine population-related jobs that are often at the edges of business parks. Jobs within the r*etail* and *accommodation and food services*, and a portion of the *arts, entertainment and recreation* sector are population-related employment. This also includes federal museums, galleries and post office sortation centres.

  The remaining jobs are accommodated in industrial-type buildings that are typically manufacturing, warehousing, construction, and scientific and technical companies and small amounts from most of the other sectors. Even the federal government will have activities in these building types.

- Non-Business Park areas: a similar process is followed for the urban, greenbelt and rural areas outside of business parks. The alignment of the City's office database and employment survey by address from the employment land review in the previous Official Plan review was utilized to determine the large federal and non-federal office buildings.

  The remaining jobs are largely population related mostly stemming from the NAICS categories of *retail*; *education*; *health care and social assistance*; and, *accommodation and food services*. There are also areas of small industrial spaces outside of business parks that are scattered throughout the city, which are assigned as industrial.

  The other rural-based jobs outside of villages are largely sector based being mostly comprised of golf courses, agricultural, mining, and a portion of the construction sector associated with outside storage of machinery, equipment, and materials.

Based on this analysis the employment categorization by land use is shown in Figure 7.

	Federal Office	Non-Federal Office	Industrial-related	Population-related	Other Rural	Total
Jobs						
2001	87,100	74,100	94,200	229,700	4,900	490,000
2006	97,800	79,300	97,000	249,700	6,200	530,000
2011	112,500	82,600	100,800	264,600	7,100	567,600
2016	124,600	87,500	96,100	294,000	7,100	609,300
Job Growth						
2001-06	10,700	5,200	2,800	20,000	1,300	40,000
2006-11	14,700	3,300	3,800	14,900	900	37,600
2011-16	12,100	4,900	-4,700	29,400	0	41,700
Share of Job Growth						
2001-06	27%	13%	7%	50%	3%	100%
2006-11	39%	9%	10%	40%	2%	100%
2011-16	29%	12%	-11%	71%	0%	100%

Figure 7: Jobs and Job Growth by Land-Use Based Categories

While Figure 6 showed that the portion of job growth between 2011 and 2016 within business parks declined 15 per cent, Figure 7 shows that jobs associated with industrial-related uses had a smaller decline at 11 per cent and that large offices still contributed to job growth over the same period. This shows that large offices within business parks are of sufficient quantity to change the contributions of business parks to overall job growth.

4.3 Forecast Employment by Land-Use Categories

The new Official Plan growth projections were adopted by the Joint Planning Committee and Agriculture and Rural Affairs Committee on December 9, 2019 and by Council on December 11, 2019. By 2046 the projected employment is estimated to be 827,000 jobs, a growth of 189,400 jobs representing a 30 per cent increase from 2018[12], with an annual growth rate of 1.0%. Extending the period to between 2016 to 2046 to align with 2016 as the base year for the industrial land budget, the projected job growth is estimated to be 217,800 jobs.

Federal jobs have grown rapidly and significantly since 2001 and similar growth is expected to continue to 2046. The size of the federal service tends to grow with the size of the national population. While there may be deviations through changes in government and established priorities, there is a net gain in federal service growth when viewed over a longer period. From 2001 to 2016 the federal government in Ottawa has increased by over 38,000 jobs, representing a 44 per cent increase over 15 years, and about a third of overall job growth within the city. Consistent with past estimates of federal office growth, the estimated growth of the federal government in Ottawa is based on the growth of the national population to 2046, as estimated by Statistics Canada[13], which was also used as the basis of the population projections adopted by Council on December 11, 2019. The federal office jobs in Ottawa results in an annual growth rate from 2016 to 2046 of 1.0%. This is slightly faster than the national population growth projected by Statistics Canada of 0.9% over the same period.

[12] City of Ottawa, November 2019. *Growth Projections for the New Official Plan: Methods and Assumptions for Population, Housing and Employment 2018 to 2046*. Joint Planning Committee and Agricultural and Rural Affairs Committee, December 9, 2019.

[13] Statistics Canada, 2019. *Population Projections for Canada (2018 to 2068), Provinces and Territories (2018 to 2043): Technical Report on Methodology and Assumptions.* Publication 91-620-X.

Non-federal office jobs are anticipated to align with growth in the high-tech sector and other professional services. High-tech in Ottawa has become more diversified since the early 2000s when the focus was on telecommunications. Although telecommunications still play a role within the local high-tech sector, the software-related sub-sector has increased significantly, and new applications such as autonomous vehicles and dedicated research centres have emerged. The forecast is an annual growth rate of 1.1 per cent, higher than the city-wide annual growth rate and consistent with observed growth rates.

Industrial-related jobs will grow more slowly than overall job growth and is a trend that is expected in other Ontario jurisdictions. The 2016 employment survey showed a decline in industrial-related jobs compared to prior surveys, which showed an increase between the 2001 to 2011 period. Fluctuations and economic cycles occur from time to time and one period of decline in a four-point series may not necessarily indicate continued decline in the future. As discussed in an earlier section, trends show an increase in distribution and logistics-related jobs, although this sub-sector of the industry is relatively less job dense than other traditional industrial activities. The forecast is growth to 2046 although at a lower rate annual growth rate of 0.6 per cent compared to the forecast of 0.8 per cent in the previous Official Plan review and the 0.7 per cent rate observed between 2001 and 2011.

Population-related jobs typically rely on a ratio to the population that they serve. Consistent with the previous employment land review in 2016 a population ratio of 3.42 persons per population-related job is used to generate the job estimate and is assumed to remain steady over the projection period. Recent trends suggest a decline in traditional retail jobs, however continued increases in education, health and social services are anticipated to offset these declines, particularly with an aging population that is projected for Ottawa.

Other-rural based jobs represent about a quarter of jobs in the rural area. Job growth is expected to slow due to recent trends in decreasing golf course memberships and a policy focus of rural jobs to villages and rural industrial areas. The forecast is an annual growth rate of 1.0 per cent, the same rate as the city-wide annual growth rate. Figure 8 shows the results of the forecast by land-use categories.

	Federal Office	Non-Federal Office	Industrial-related	Population-related	Other Rural	Total
Jobs						
2001	87,100	74,100	94,200	229,700	4,900	490,000
2006	97,800	79,300	97,000	249,700	6,200	530,000
2011	112,500	82,600	100,800	264,600	7,100	567,600
2016	124,600	87,500	96,100	294,000	7,100	609,300
2046	167,100	122,400	115,800	412,200	9,600	827,000
Job Growth						
2001-16	37,500	13,400	1,900	64,300	2,200	119,300
2016-46	42,500	34,900	19,700	118,200	2,500	217,800
Share of Job Growth						
2001-16	31%	11%	2%	54%	2%	100%
2016-46	20%	16%	9%	54%	1%	100%
Annual Growth Rate						
2001-16	2.4%	1.1%	0.1%	1.7%	2.5%	1.5%
2016-46	1.0%	1.1%	0.6%	1.1%	1.0%	1.0%

*Components may not add to totals due to rounding.

Figure 8: Forecast Jobs by Land-Use Category

From 2016 to 2046, 19,700 industrial-related jobs are estimated to be created, representing nine per cent of overall job growth. The forecasted annual growth rates in Figure 8 are lower than the rates observed between 2001 and 2016. This is due to the demographic change towards an older population that will occur over the next 25 years. An older population will decrease labour force participation rates and decrease the overall size of the labour force as a proportion of the population. This results in lower annual job growth rates compared to what has been observed in the past.

4.4 Estimated Job Growth in Industrial and Logistics Areas

The projection period for the new Official Plan starts in 2018 and ends in 2046. To align back to the start of the projection period, the growth period in Figure 8 needs to be adjusted to start in 2018 rather than 2016. The annual growth rate for each land-use category is applied to 2018 and then adjusted proportionately to the 2018 city-wide employment projection of 637,600 jobs. This method is preferred over an alternate approach, such as interpolation between 2016 to 2046, as it takes into account the growth rate that is based on the demographic population profile between 2016 and 2018 that is the basis for the 2018 city-wide employment projection.

As noted earlier and shown in Figure 3, not all industrial-related jobs occur within business parks; some are scattered throughout the city. A small portion of the 19,700 new industrial-related jobs are expected to continue to occur outside of business parks. In addition, non-industrial-related jobs will continue to occupy space in industrial areas. Jobs within industrial areas will primarily be composed of industrial-related jobs and smaller amounts of non-industrial jobs. After separating the land-use categories within and outside of business parks in the previous analysis and conducting a forecast for each category, the proportions of each category in the forecast need to be combined again to provide the employment needs within industrial and logistics areas.

The proportion of each land-use category within industrial areas will largely depend on the permissions for each of the four business park types in the new Official Plan as discussed in Section 3.2 of this document. The majority of new industrial-related jobs will locate within the urban area. Currently about 92 per cent of industrial-related jobs occur within the urban area and this is not expected to change significantly as water and wastewater infrastructure services for larger buildings are restricted or absent in the rural area. *Non-Traditional Industrial Mixed* areas are also business parks and will permit some industrial-related uses, and along with office and limited commercial uses, this designation will also accommodate some portions of large office, industrial-related, and population-related employment.

Figure 9 shows the job growth between 2018 to 2046 and the proportions of this job growth by land-use category by designation in the new Official Plan.

Industrial & Logistics Areas	Federal Office	Non-Federal Office	Industrial-related	Population-related	Other Rural
2018-46 Job Growth	36,800	30,700	16,000	103,800	2,100
Traditional Industrial	0%	5%	80%	1%	0%
Non-Traditional Industrial	20%	20%	15%	7%	0%
Other	80%	75%	5%	92%	100%

Figure 9: Shares of Land-Use Job Growth by New Official Plan Designation

As the focus on the industrial and logistics lands strategy is on preserving and protecting areas for manufacturing and warehousing uses, the amount of job growth on *Traditional Industrial, Freight and Storage* areas will impact the land need for these areas. This job growth will occur in both existing building spaces and in new building spaces on vacant land. The amount of new building space required on vacant traditional industrial land varies by land-use category.

In terms of land-use categories, federal offices are not anticipated to utilize any space within industrial areas for office purposes. As the federal government continues to focus on concentrations and campus-style properties such as Tunney's Pasture and Confederation Heights, a small decline in their leases of privately-owned buildings will occur. Leases in privately-owned buildings are expected to continue to occur within *Non-Traditional Industrial Mixed* business parks. Non-federal office is estimated to have five per cent of its job growth in industrial and logistics areas, being vacancies in existing buildings and the potential for new buildings that are in proximity to transit. It is forecast that 80 per cent of industrial-related jobs will be accommodated in traditional industrial areas, 15 per cent to non-traditional mixed business parks and the remaining five per cent throughout the remaining urban and rural areas. A small portion of population-related employment (one per cent) is allocated to industrial areas, reflecting uses that are secondary and complementary to the primary industrial employers.

The job growth in industrial areas will occupy vacant space within existing buildings with the remainder occupying space in new buildings. In the large office market, existing future vacancies through unrenewed leases are expected to accommodate 70 per cent of large office jobs within industrial areas. Most of the industrial-related jobs at 95 per cent are assumed to occupy space in new buildings. While there is potential for the refit of existing buildings for automated storage and distribution these buildings, they are not likely to be job-intensive. Given that this is a change driver that has yet to be experienced in Ottawa, a conservative estimate would be a low percentage of industrial-related jobs to occupy existing buildings. Finally, a small portion of population-related jobs (10 per cent) is assumed to be accommodated in existing space, with the remaining (90 per cent) occupying new space.

Figure 10 shows the jobs growth within *Traditional Industrial, Freight and Storage* and the amount that will need to occupy new building space on vacant lands to 2046.

Urban Industrial & Logistics Areas	Federal Office	Non-Federal Office	Industrial-related	Population-related	Other Rural	Total
2018-46 Job Growth	36,800	30,700	16,000	103,800	2,100	189,400
Traditional Industrial Share	0%	5%	80%	1%	0%	8%
Traditional Industrial Job Growth	0	1,500	12,800	1,000	0	15,300
Share in Existing Space	0%	70%	5%	10%	0%	11%
Share in New Space	0%	30%	95%	90%	100%	89%
Growth in New Space	0	500	12,200	900	0	13,600

Figure 10: Industrial Job Growth in New Space

The *Traditional Industrial, Freight and Storage* designation will need to accommodate 15,300 jobs, of which 13,600 (89 per cent) will require new space. This job growth forms the basis of the land need for new urban industrial and logistics areas through the TIFS designation.

4.5 Vacant Industrial Land Demand

The growth of 12,200 jobs on traditional industrial lands will occur on vacant lands. The amount of land in hectares is determined by applying a range of jobs-per-hectare densities to each of the categories in Figure 10. The densities are standard measures and observations of typical existing and planned densities in Ottawa. Office and population-related job densities are based on a typical range for new buildings. Job densities for potential new distribution centres have to be considered as they become increasingly automated and have been equated with a lower density of jobs than older warehouse and logistics uses.

The industrial density has been updated with the assumption that distribution and logistics will form a larger portion of the industrial-related jobs than assumed in the previous Official Plan. Information from recent development applications for distribution and logistics along highways 416 and 417 in Ottawa and a sample of existing distribution and logistics operations in the Greater Toronto Area (GTA) were used to determine the lower bounds of the industrial-related density range. The result is a density of about 25 jobs per net hectare, being on the lower end for Ottawa and higher end in the GTA. Ottawa having slightly higher densities than the GTA is consistent with past comparisons of industrial density between Ottawa and the GTA. The employment land study in the previous Official Plan review used a range of 35 to 40 jobs per net hectare for industrial-related jobs. As distribution centres are a newer format than what was considered in the past Official Plan review and will likely form a larger portion of the industrial land need, the industrial land density is revised to a range of 25 to 35 jobs per net hectare from 35 to 40 jobs per net hectare. Figure 11 estimates the resulting industrial land need to accommodate the forecast of jobs on new industrial areas from 2018 to 2046.

Traditional Industrial Land Need, 2018-2046	Federal Office	Non-Federal Office	Industrial-related	Population-related	Other Rural	Total
Job Growth in New Space	0	500	12,200	900	-	13,600
Density, Low						
Density (jobs per net ha)	-	125	25	60	-	27
Land Need (net ha)	-	3.7	487.8	15.6	-	507.1
Density, High						
Density (jobs per net ha)	-	175	35	80	-	38
Land Need (net ha)	-	2.6	348.4	11.7	-	362.7

Figure 11: Vacant Industrial Land Demand, 2018 to 2046

A range of about 363 to 507 net hectares of vacant industrial land is required to be protected and preserved through the *Traditional Industrial, Freight and Storage* designation in the new Official Plan.

Section 5: Land Supply

Vacant industrial designated lands are required to accommodate up to 507 net hectares of industrial land development to 2046. The supply of this amount will come from existing vacant industrially designated lands and if necessary new industrial designated lands.

The amount of existing vacant industrial lands is reported every two years in the City's Vacant Industrial and Business Park Lands Inventory. The 2017-2019 survey was used as the basis to estimate the vacant industrial lands on July 1, 2018 by adding back any development that occurred between July 1 and December 31, 2018 to align with the starting point of the employment growth projections. The updated 2018 vacant industrial and business park inventory is estimated to be approximately 1,566 net hectares, of which 818 net hectares (52 per cent) are in the urban area and 748 net hectares (48 per cent) are in the rural area as shown in Figure 12.

July 2018	Vacant Supply (net HA)
Urban	818
Rural	748
Total	1,566

Figure 12: Updated 2018 Vacant Industrial and Business Park Inventory

The urban business parks are shown in Figure 13 and the rural business parks are shown in Figure 14.

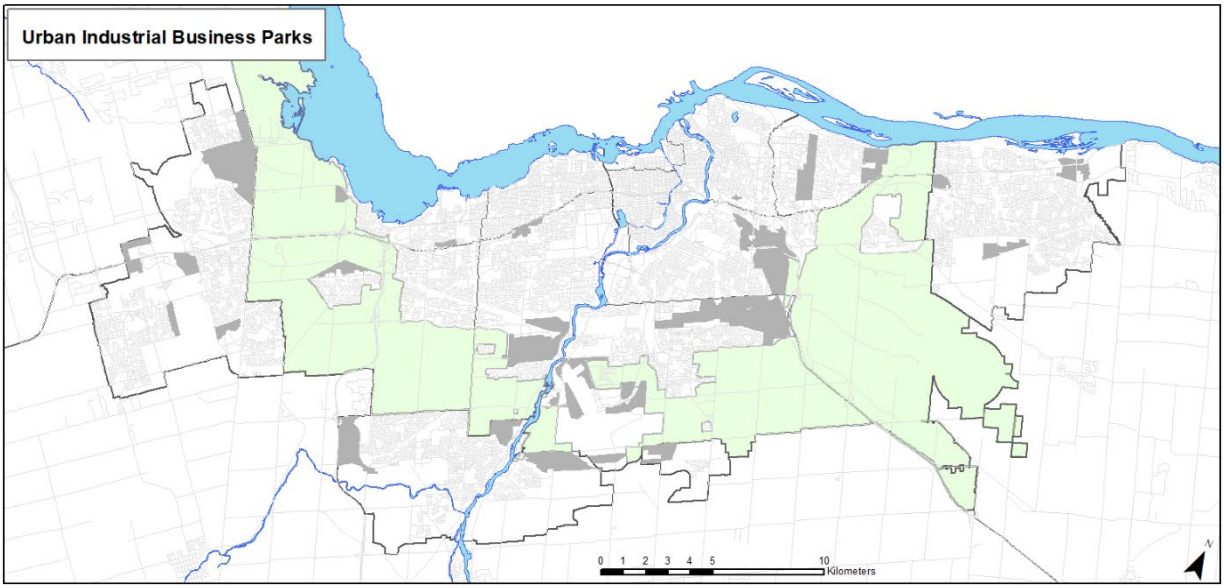

Figure 13: Existing Urban Business Parks

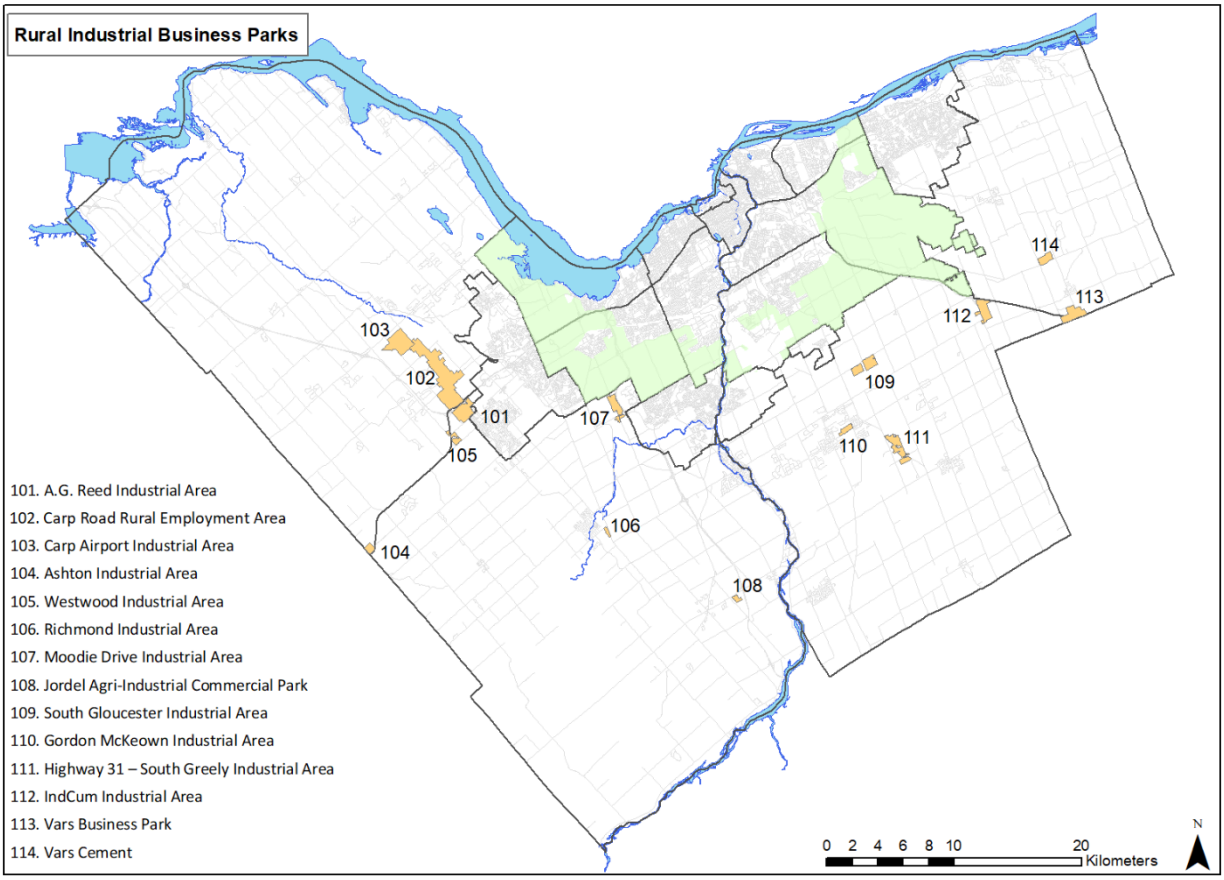

Figure 14: Existing Rural Business Parks

5.1 Existing Urban Vacant Industrial Land Supply

The inventory in Figure 12 reflects existing industrial subdivisions and business parks with current Official Plan designations of *Urban Employment Area*, *Rural Employment Area*, and other industrial subdivisions that have industrial zoning but may not have a corresponding employment designation. As discussed within Section 3.2 of this document, the new Official Plan proposes to designate business parks by their contexts. Within the urban area, current Official Plan *Urban Employment Area* designations are categorized into the following designations in the new Official Plan:

- *Traditional Industrial, Freight and Storage* (TIFS)
- *Non-Traditional Industrial Mixed* (NTIM)
- *Special District*
- Other designations such as a *Hub*

Figure 15 shows how the 818 net hectares within urban industrial business parks are categorized by designation in the new Official Plan.

July 2018	Vacant Supply (net HA)
TIFS	382
NTIM	180
Special Districts	224
Other	32
Total	818

Figure 15: 2018 Vacant Supply in Urban Business Parks by new Official Plan designation

Of the 818 net hectares of supply in the urban area, 382 net hectares is within *Traditional Industrial, Freight and Storage* areas preserved primarily for industrial-related uses and is the basis of the existing industrial supply. Although the *Non-Traditional Industrial Mixed* designation permits industrial uses and are expected to accommodate some of the industrial-related job growth, other commercial and office uses are also permitted and thus lack the protection and preservation aspects to be relied upon as a source of primary supply solely for new industrial-related jobs.

Business parks in *Special Districts* correspond to the high-tech focus of Kanata North and lands adjacent to the Ottawa International Airport where the unique land ownership, associated leases, and broader commercial and Kanata North residential permissions in association with the proposed policies of the new Official Plan, may be occupied by office or population-related jobs rather than industrial-related jobs. The Kanata North Special District is estimated to have 65 net hectares of vacant land to accommodate future development. Using the median of the low and high large office density range in Figure 11, there is sufficient vacant land to accommodate almost 10,000 additional office-related jobs in the Kanata North Special District. The Ottawa International Airport is estimated to have almost 160 net hectares of vacant land that can accommodate future development, including potential growth in air cargo should any drivers of change alter the current network of air traffic flow. However, similar to NTIM business parks, these *Special Districts* lack the protection and preservation aspects to be relied upon as a primary source of supply solely for new industrial-related jobs.

A small amount of the existing business parks are proposed as other designations to better utilize their locations adjacent to transit stations to focus growth at transit stations or to recognize existing permissions for residential uses. These include the Queensview-Morrison business park, northeast of Highway 417 and Pinecrest Road where a Line 3 O-Train transit station is planned near the eastern end of Queensview Drive, and the South Orléans business park, east of Mer Bleue Road, where a transit station is planned within the hydro corridor near Mer Bleue Road. The Bells Corners industrial area is mostly comprised of office jobs related to the high-tech sector (50 per cent) and population-related jobs (40 percent), leaving industrial-related jobs (10 per cent) forming a minor component of the area. There is one vacant parcel left with residential permissions from previous Official Plans. Given the composition of the business park, proximity to a mainstreet and the overall context of the area, this business park is at a stage to transform into an area that is characterized by more mixed-uses than solely a non-residential business environment. Finally, the former Nortel campus at Carling now occupied by the federal government is recognized as a *Greenbelt Facility* consistent with other federal campuses in the greenbelt. Thus, these business parks are not considered as a primary source of supply for new industrial-related jobs.

Figure 16 shows the locations of existing urban business parks and their proposed designations in the new Official Plan.

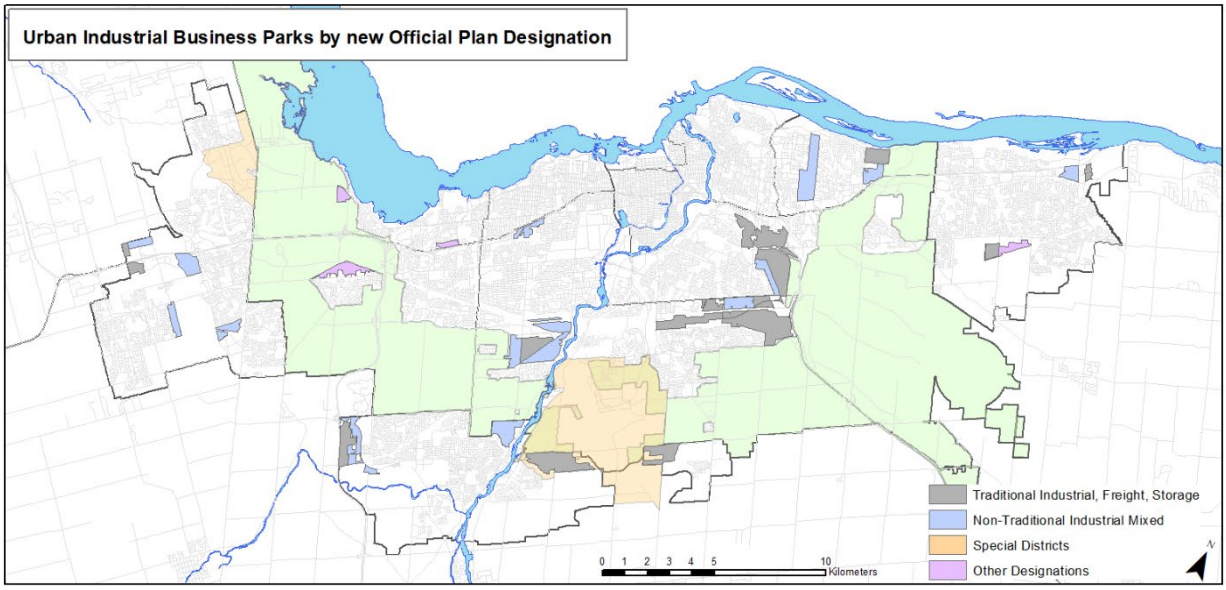

Figure 16: Existing Industrial Areas by new Official Plan Designation

To correspond with the industrial-related job growth and their associated land need on areas that are preserved and protected for industrial and logistics uses in Figure 11, only the existing vacant supply within TIFS business parks is considered to meet this demand due to the land use permissions that focus on manufacturing and warehousing as the primary uses. As shown in Figure 15, there is approximately 382 net hectares of existing vacant land for industrial and logistics uses.

The existing supply of 382 net hectares is within the lower range of 363 to 507 net hectares to accommodate the anticipated industrial-related growth to 2046. The lower end closer to 363 net hectares would only be achieved if higher employment densities occurs on industrial lands. Given that the main high density use of office is proposed to be restricted within these areas and a higher occupancy of less employment dense and more land extensive uses is anticipated, additional supply closer to 507 net hectares will mitigate the potential for not meeting land needs and help provide more options for future industrial-related users.

5.2 Additional Urban Industrial Lands

In addition to a change in land use permissions within industrial and logistics areas to limit the amount of office, thereby lowering the achievable employment density, planning for industrial lands should consider some of the industrial trends and drivers of change identified in Section 2.2 of this document. The industrial sector will continue to grow in conjunction with e-commerce as fulfillment and last-kilometre delivery sites will expand. Currently there are two Amazon fulfillment centres within the city and planning applications have been received for two additional distribution centres. While Ottawa is a hub for eastern Ontario and western Québec, there are limitations to total market catchment area and the number of additional fulfillment centres needed to serve this area. In addition, notwithstanding the industrial-related job projection in Figure 10, there may be other limitations to planning for a substantial increase of new industrial lands. Water, wastewater, and stormwater services are required for these new structures and extending these services to potential new industrial lands in the rural area adjacent to highway interchanges may be cost-prohibitive and/or difficult to finance.

Changes in the network of distribution centres from technology advancements also offer the ability to refit existing buildings into fulfillment centres, or micro-fulfillment centres in concert with traditional retail space, which is occurring in dense, urban cities today. Smaller scale pre-fabrication manufacturing can also

occur on smaller parcels within the existing industrial supply that has good market access when combined with e-commerce technologies.

An additional 100 to 130 net hectares of urban industrial land would help ensure sufficient supply for industrial-related employment to 2046, including opportunities for new larger-scale fulfillment centres, or new forms of manufacturing, while relying on existing supply for potential infill and building refit. Location considerations for new lands are established in the PPS as outlined in Section 3.1 of this document, primarily being adjacent to the urban area to minimize infrastructure extensions, maximize opportunities for multi-modal commuting options, while being near goods movement corridors. In addition, new industrial areas should be able to offer large parcels of land, so that development may be contiguous to create a cluster, as well as to offer reasonable and market-ready development opportunities. Such areas should be free of constraints such as environmentally sensitive areas, floodplain, and agricultural lands.

On May 27, 2020, Council passed a motion to exclude lands in Agricultural Resource Areas from any and all consideration as candidate parcels for inclusion in the urban or village boundary. As new urban industrial lands will require an urban area expansion, agricultural lands are excluded from consideration.

Given the prominence of goods movement via the 400-series highways and the need for infrastructure, vacant lands adjacent to highway interchanges and the urban boundary are strategic locations for additional urban industrial and logistics lands. Figure 17 shows the rural business parks and the main highways in Ottawa, along with identified rural interchanges that meet these strategic criteria for new potential new urban industrial lands. While the interchange at Highway 417 and Boundary Road, where the first Amazon fulfillment centre is located, appears to be adjacent to the urban area, it is separated from the built-up urban area where the municipal water and wastewater services are located by the National Capital Commission Greenbelt. This rural business park receives water services from the Carlsbad Trickle Feed System and there is insufficient capacity in this system to support new large development and therefore is not considered a strategic location for additional significant new industrial and logistics space. Further analysis on this business park is provided in the next section on rural industrial land supply.

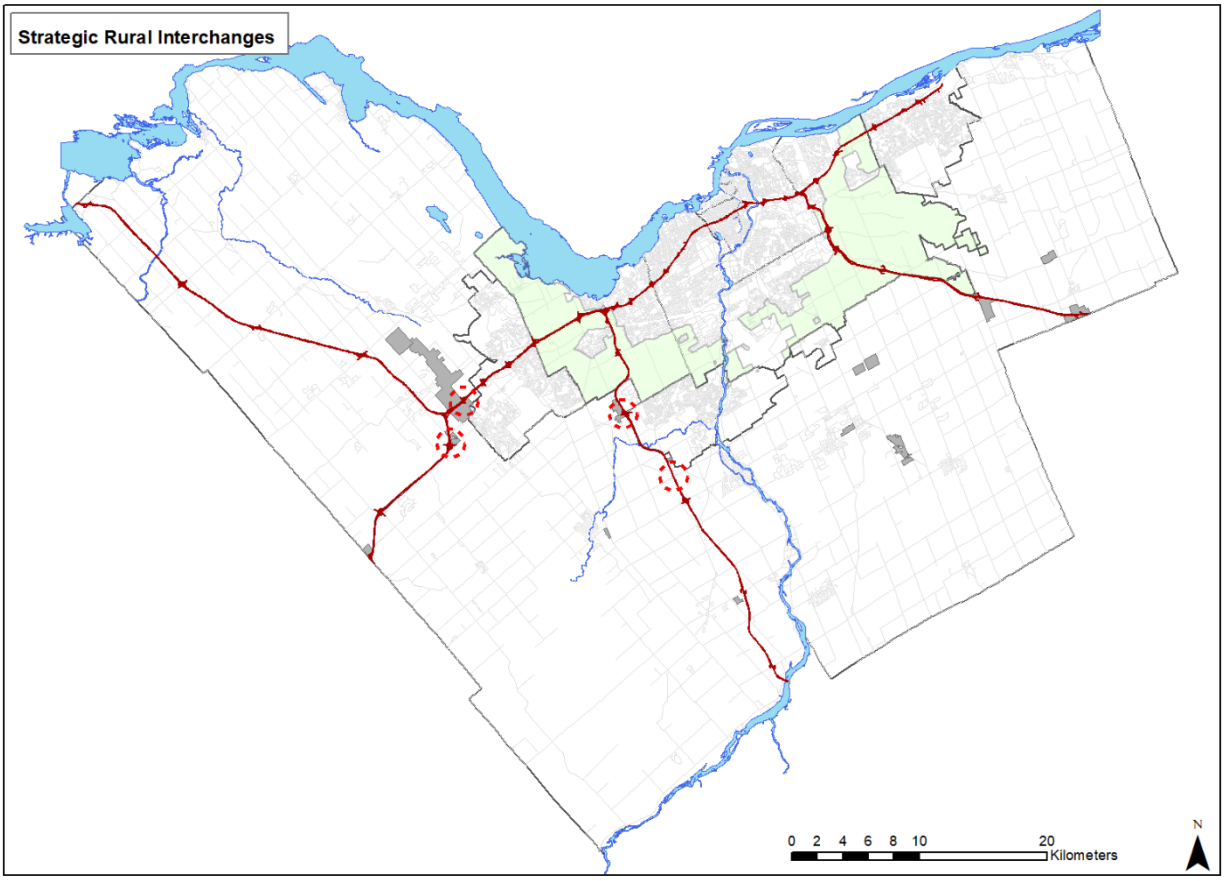

Figure 17: Rural Interchanges at Strategic Locations

Highway 417 and Carp Road

The intersection of Highway 417 and Carp Road is part of two rural business parks, the Carp Road Corridor north of Highway 417 and AG Reed Industrial Area south of the highway. Both are designated *Rural Employment Area* in the current Official Plan and for the purposes of this land budget are considered as the *Rural Industrial, Freight and Storage* designation in the new Official Plan. Between the AG Reed Industrial Area and the urban boundary to the east are vacant lands designated as *Rural Natural Features Area* in the current Official Plan. Figure 18 shows the current Official Plan designations around the Highway 417 and Carp Road interchange.

The Carp Road Corridor has a significant amount of vacant rural industrial with about 282 net hectares, however with the presence of the West Carleton land fill and the Karson quarry, there are no vacant lands adjacent to the highway interchange, with the closest parcels being greater than one kilometre away. A request has been submitted to review a parcel that is currently designated as *General Rural*, west of the Carp *Rural Employment Area* designation on the north side of Richardson Sideroad, as an addition to the rural employment designation. After reviewing the request, it does not appear that the subject parcel has any unique attributes that do not already exist within the current 282 net hectare vacant inventory, either through lot sizes, permitted uses, or location. It does not appear that additional rural industrial supply is required in the Carp Road Corridor.

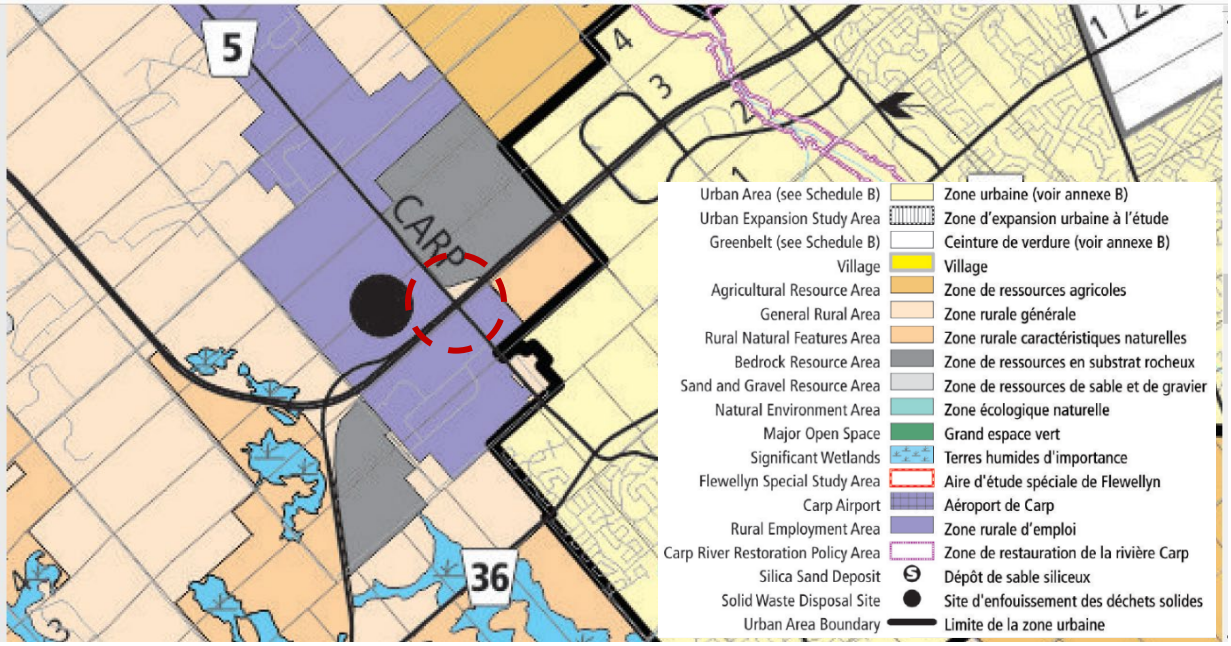

Figure 18: Highway 417 and Carp Road Interchange and Current Official Plan designations

Southwest of the interchange is the AG Reed rural industrial area that has existing industrial uses and approximately 55 net hectares of vacant lands. The vacant parcels southeast of the interchange have the presence of some watercourses, potential for species at risk habitat, components of unevaluated wetlands, and significant woodlands on these parcels. However, the unevaluated wetlands and significant woodlands are not expected to preclude development providing the required studies and mitigation measures are completed. There is also a small pocket of floodplain adjacent to the urban boundary on the east side. When considering the presence of these features, the vacant *Rural Natural Features Area* southeast of Highway 417 and Carp Road is estimated to be able to accommodate 45 net hectares of industrial development, however this amount may be lower pending the results of an environmental impact statement undertaken by the landowners through the development review process for these lands.

These lands also are adjacent to existing urban industrial designated lands southwest at the Highway 417 and Palladium Drive interchange, and if designated industrial will provide an industrial corridor between two highway interchanges. Figure 19 highlights the rural area south of the Highway 417 and Carp Road interchange proposed as *Traditional Industrial, Freight and Storage* in the new Official Plan.

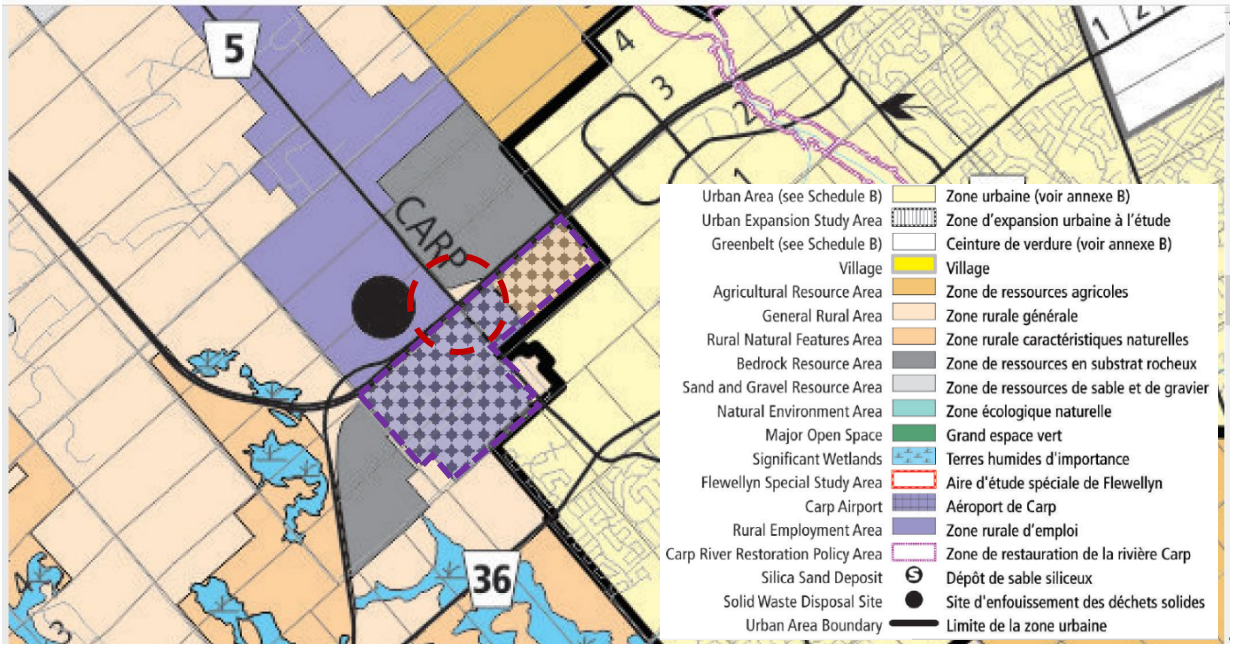

Figure 19: Proposed New Traditional Industrial Lands at Highway 417 and Carp Road Interchange

Portions of the AG Reed business park currently receives municipal water and this service can be extended to the remainder of the business park and the vacant lands east of Carp Road. Water pressure in high elevation areas of the business park will have a minor deviation from City guidelines, but can be addressed with oversized services and plumbing, or on-site pumping if needed. Available fire flow will also have constraints and may require on-site measures to reduce fire flow requirements, depending on the characteristics of the development.

The current Transportation Master Plan identifies the widening of Carp Road between Hazeldean Road and Highway 417 as a future project, which can be an opportunity to also extend sanitary services. A sanitary pump station will likely be required to service some of the vacant lands east of Carp Road. The passing of a local improvement area by-law and associated charge to the benefiting landowners will likely be required to help finance the infrastructure extensions and connections.

Requests have been received to consider the southern parcels within the AG Reed Industrial Area and the vacant *Rural Natural Features Area* for residential uses as part of the new Official Plan. However, as there are few strategic locations for urban industrial lands that can connect to existing municipal water and wastewater services, these areas in their entirety should be preserved for industrial and logistics related uses. The southern portion of the AG Reed Industrial Area are the largest vacant parcels within the subdivision and the only ones on the west side of Carp Road that are over 2 hectares in size. Given the demands for large parcels in serviced industrial areas these parcels are required to provide a range of parcel sizes in this industrial subdivision. The vacant *Rural Natural Features* lands should be planned to provide large lots to accommodate larger warehouse structures and removing the southern portions will create a narrower shape that constrains the flexibility of designing an industrial subdivision that can efficiently provide large lots reducing the potential of creating odd-shaped parcels. Combined, the rural area south of Highway 417, west and east of Carp Road could potentially accommodate approximately 100 net hectares of industrial and logistics related development and should be considered as *Traditional Industrial, Freight and Storage* in the new Official Plan.

Highway 7 and Hazeldean Road

The intersection of Highway 7 and Hazeldean Road is the location of the rural Westwood Industrial Area northeast of the interchange, which is currently estimated to have 20 net hectares of vacant lands. This rural business park is designated *General Rural* in the current Official Plan. There are *Provincially Significant Wetlands* west and east of Highway 7, which also bisects the Westwood business park. The urban boundary is more than two kilometres east of the interchange along Hazeldean Road. Figure 20 shows the current Official Plan designations around the Highway 7 and Hazeldean Road interchange.

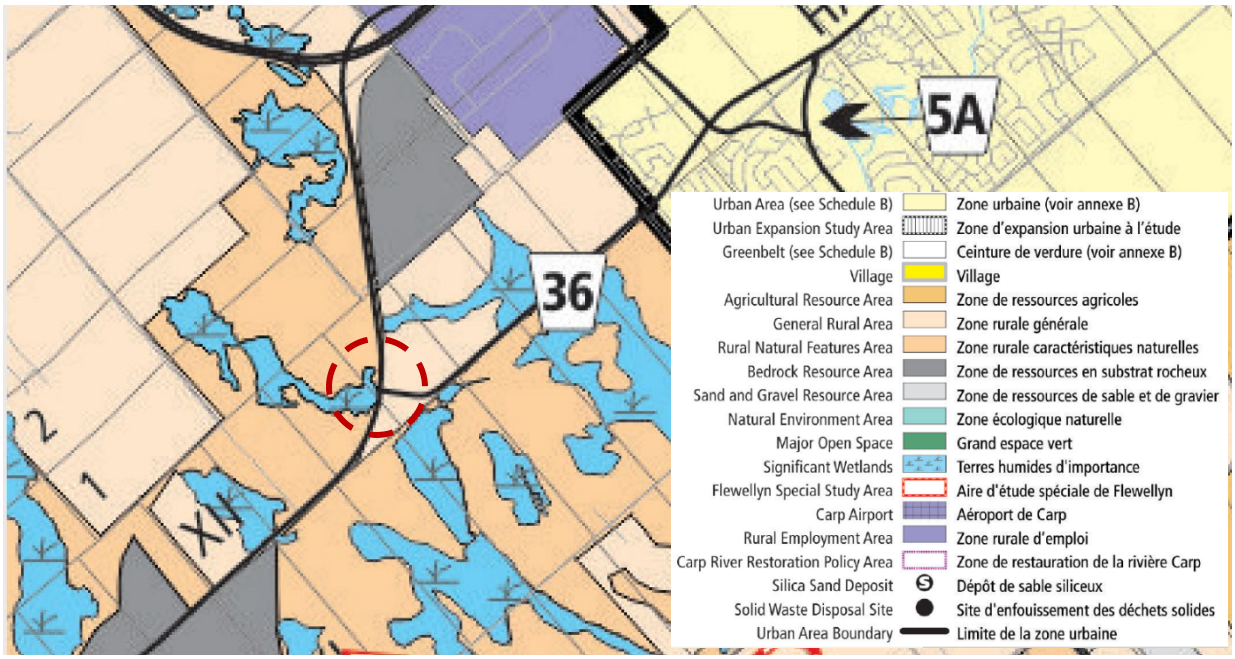

Figure 20: Highway 7 and Hazeldean Road Interchange and Current Official Plan Designations

The presence of the *Provincially Significant Wetlands* fragments the existing business park so that the 20 net hectares of vacant lands are not contiguous. Figure 21 shows updated mapping of the *Provincially Significant Wetlands* that covers a larger area since the creation of the current Official Plan land use schedules and limits any further eastward expansion of this business park. There are then no large contiguous developable lands adjacent to this intersection that can accommodate large industrial users.

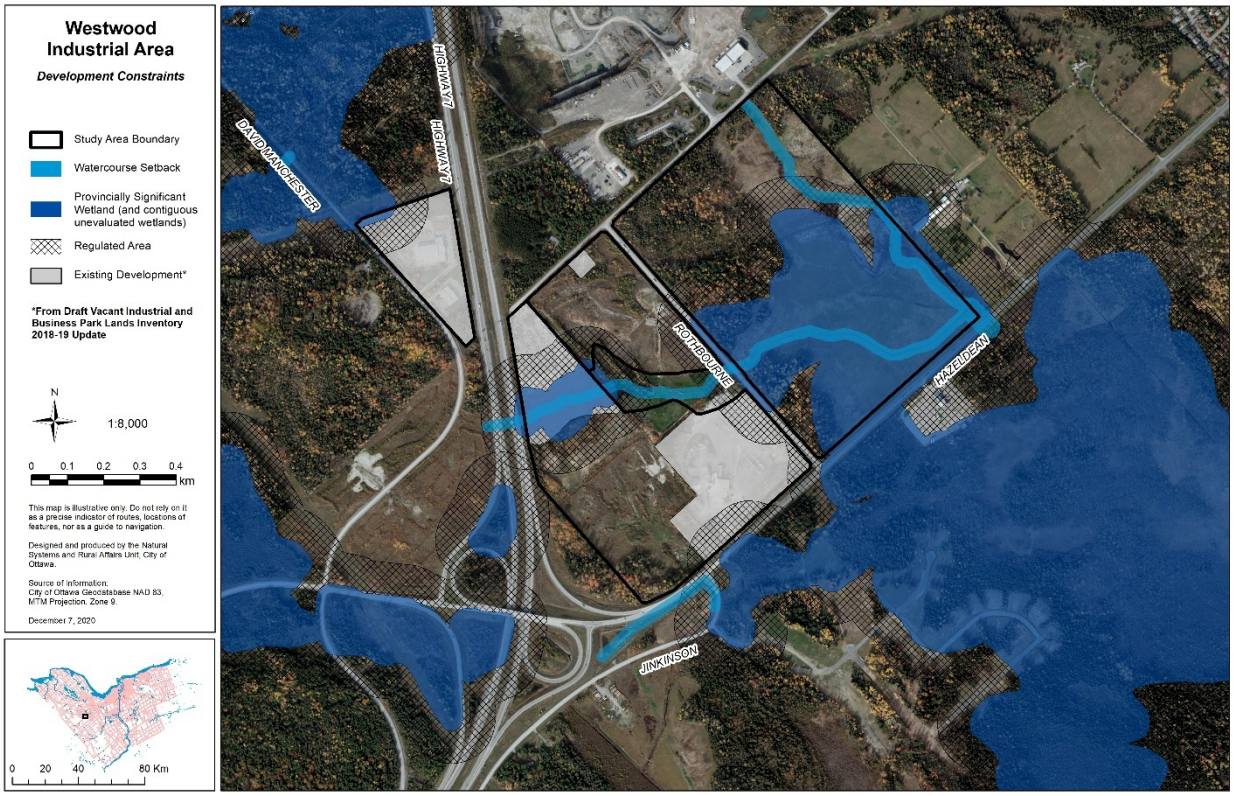

Figure 21: Updated Provincially Significant Wetlands Mapping in Westwood Industrial Area

Highway 416 and Fallowfield Road

The intersection of Highway 416 and Fallowfield Road is the location of the rural Moodie Drive Industrial Area, west of Highway 416, along Moodie Drive, north and south of Fallowfield Road, which is currently estimated to have 8.2 net hectares of vacant lands. This rural business park is currently designated *Rural Employment Area* and is adjacent to the LaFarge quarry to the northwest, residential uses immediately west, and agriculture lands to the south. The urban boundary is on the east side of Highway 416 where Fallowfield Road turns into Strandherd Drive. Figure 22 shows the current Official Plan designations around the Highway 416 and Fallowfield Road interchange.

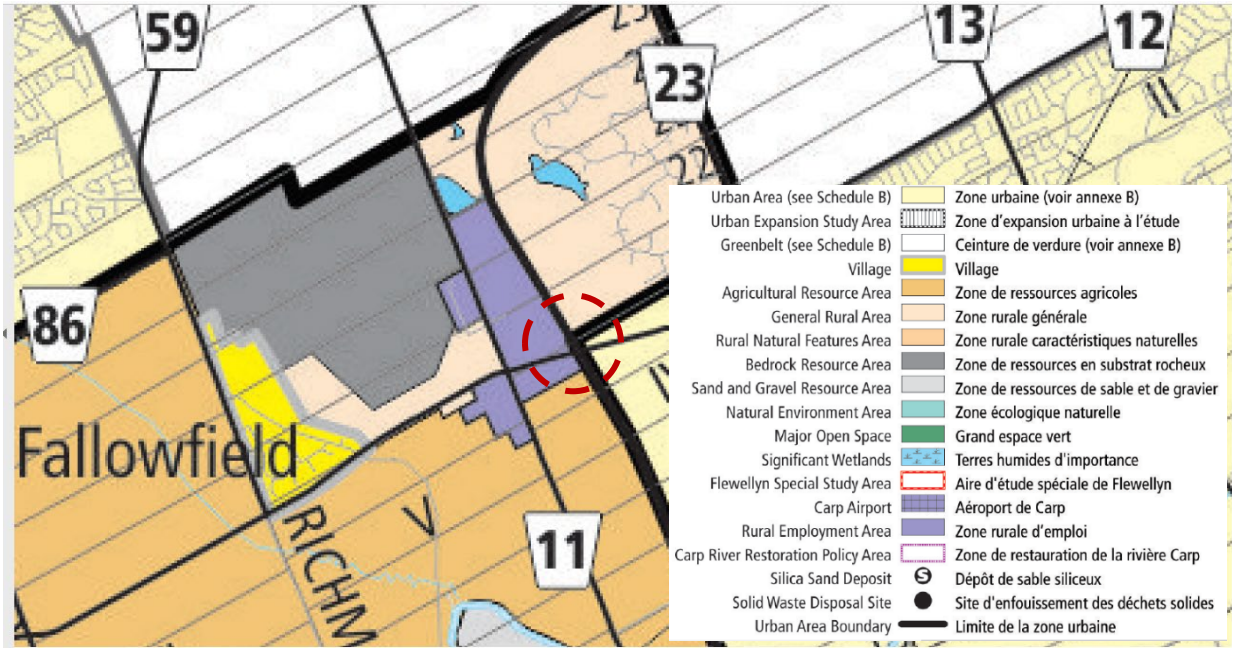

Figure 22: Highway 416 and Fallowfield Road Interchange Current Official Plan Designations

Most of the vacant lands within the Moodie Drive business park are southwest of Moodie Drive and Fallowfield Road. While there may be sufficient vacant lands for intended rural industrial and storage uses, there is not enough vacant land remaining in this business park to support large urban industrial uses. There are no opportunities to expand north or west and a southerly expansion encroaches onto the *Agricultural Resource Area* designation on either side of Moodie Drive. Consistent with Council direction to exclude agricultural lands as candidate urban expansion parcels, no further consideration is given for including additional lands to this business park.

Highway 416 and Barnsdale Road

An interchange at Highway 416 and Barnsdale Road currently does not exist. However, this intersection is noted as a *New Interchange* within Schedule G, Rural Road Network of the current Official Plan, and Map 10, Road Network – 2031 Network Concept of the current Transportation Master Plan. Barnsdale Road is the limit of the current urban boundary and is also where candidate expansion lands are being considered for future neighbourhoods. There are vacant *General Rural* lands west and northeast of the future interchange and *Agricultural Resource Area* to the southeast. Figure 23 shows the current Official Plan designations around the future interchange at Highway 416 and Barnsdale Road.

Figure 23: Highway 416 and Barnsdale Road New Interchange and Current Official Plan Designations

Borrisokane Road is parallel to Highway 416 on the east side and is where a 3,400 square metre manufacturing facility is currently under construction within the *Rural Employment Area* designation. North of the *Rural Employment Area* is a vacant parcel currently designated as *General Rural.* A *Sand and Gravel Resource Area* designation (the Drummond Costello Pit) is south of the *Rural Employment Area*. The remaining lands south of the Costello Pit are designated *General Rural* in the current Official Plan and the corridor along Borrisokane Road is estimated to be able to accommodate up to 40 net hectares of new industrial and logistics development. The resources in the Costello Pit are exhausted and the extraction licenses have been surrendered. These lands along Borrisokane Road have good access to the future interchange at the edge of the current urban boundary and can be serviced from the adjacent candidate urban expansion parcels to accommodate residential growth. This corridor represents a good location for industrial uses once the new interchange has been constructed. Figure 24 highlights the proposed industrial lands along the Borrisokane Road corridor northeast of the future Highway 416 and Barnsdale Road interchange.

The lands east of the Borrisokane Road corridor may be considered as part of the urban expansion for future neighbourhoods. Should the new Official Plan identify these lands as future neighbourhoods within the urban area, the proposed industrial lands should be included as part of the secondary plan for the

future neighbourhood to plan for the transportation and servicing connections so that the industrial lands can be integrated into the future neighbourhood.

Should the lands east of the Borrisokane Road corridor not be identified as a future neighbourhood, the new Official Plan should reserve this corridor as a future *Traditional Industrial, Freight and Storage* designation so that the lands are not encumbered by another use if they are needed for industrial and logistics purposes and considerations can be made when planning on adjacent lands. The proposed industrial lands would then receive an industrial designation in the Official Plan when the interchange is built.

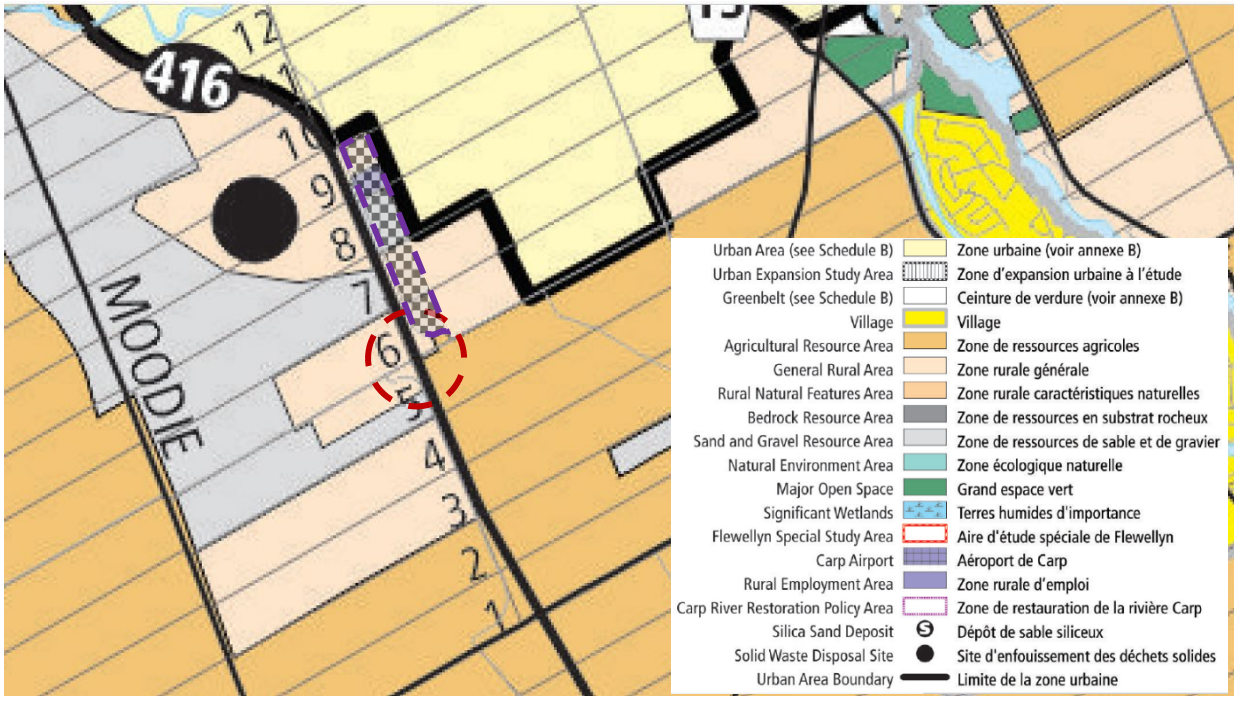

Figure 24: Proposed Traditional Industrial Lands at Future Highway 416 and Barnsdale Interchange

New Urban Industrial Lands Recommendation

The four highway interchanges at strategic locations shown in Figure 17 were evaluated for their potential to add new urban industrial supply. The Highway 417 and Carp Road interchange has a sufficient amount of vacant lands adjacent to the interchange, that are not agricultural, have reasonable development potential, and where the opportunity to extend municipal services is realistic. Adding the new 100 net hectares at this interchange to the existing 382 net hectares will provide a total of 482 net hectares of urban industrial lands, which is within the upper range of the 363 to 507 net hectare industrial land demand to 2046.

In addition, Highway 416 and Barnsdale Road also represents a good opportunity for urban industrial lands, which should be integrated with any adjacent future neighbourhoods as part of a secondary plan for the area. Figure 25 shows the urban industrial land demand and supply with existing (as of July 2018) and the proposed new industrial lands to 2046.

Urban Industrial Land	2018-46 Demand (net HA)	Supply (net HA)
2018 Existing Traditional Industrial (TIFS)		382
New 417 & Carp Traditional Industrial (TIFS)		100
New 417 & Barnsdale Traditional Industrial (TIFS)		40
Total Traditional Industrial (TIFS)	363 to 507	522

Figure 25: Urban Industrial Land Demand and Supply to 2046

Although the total supply of 522 net hectares surpasses the upper demand estimate of 507 net hectares, adding all 140 net hectares of industrial lands is consistent with the intent of the PPS, rather than only adding a smaller amount to keep within the upper demand limit and creating remnant rural parcels that would otherwise be surrounded by the urban area and not integrated as part of a future neighbourhood secondary plan. In addition, the estimated net hectares of new industrial lands are approximate based on current information and may be less pending the results of any required environmental impact statements or environmental assessments to determine the amount of developable lands.

5.3 Rural Vacant Industrial Land Supply

At a comprehensive city-wide level, most of the industrial-related growth is expected to occur within the urban area. The rural industrial areas are mostly privately serviced and in some locations the soil conditions may be difficult for on-site private services. In addition, rural locations are further from the populated areas of the city where the majority of the work force resides with little to no opportunities for transit or other sustainable transportation modes for commuting. Being consistent with the PPS in terms of efficient use of infrastructure, supporting sustainable transportation modes, and not further increasing GHG emissions means that growth should be limited in the rural industrial areas to uses with low employment densities and outside storage or loading/unloading for goods movement.

In the rural area, vacant lands within the current Official Plan designation of *Rural Employment Area* and industrial land uses within Village Plans and Secondary Plans correspond to *Rural Industrial, Freight and Storage* in the new Official Plan. There are also rural industrial subdivisions in other rural designations. Figure 26 shows how the 748 net hectares within rural industrial business parks are categorized in the new Official Plan.

July 2018	Vacant Supply (net HA)
RIFS & Villages	586
Other	161
Total	748

Figure 26: 2018 Vacant Supply in Rural Business Parks by new Official Plan designation

Of the 748 net hectares of supply, 586 are within *Rural Industrial, Freight and Storage* areas and village industrial areas primarily for industrial-related and storage uses, and 161 are within other designations.

Carp Airport Adjustment

Over 60 per cent of this supply is located within the Carp Road *Rural Employment Area* and *Carp Airport* designations of the current Official Plan. In 2005 a master land use and servicing plan for Carp Airport was approved, protecting the core airport area, and permitting development of aviation related land-uses and an accessory residential fly-in community. The master land use plan at a high level is reflected in the current Official Plan *Carp Airport* designation, which permits aviation and other land uses associated with

an airport. Although aviation related-uses can be associated with the larger industrial-related category, the specific nature of aviation uses in the master land use plan restricts the ability of other industrial-related uses from locating within the Carp Airport and as such, the associated 90.4 net hectares of vacant lands should be excluded from the “RIFS & Villages” vacant rural industrial supply.

Village of Richmond Adjustment

The Village of Richmond has approximately 23 net hectares of vacant industrial land, of which approximately 21 net ha is located in *Industrial Area 1* in the Richmond Secondary Plan. Notwithstanding what is shown on Schedule A – Land Use, the Secondary Plan is flexible in the location of this industrial area including a relocation that is adjacent to Eagleson Road, rather than the southern village boundary. A request has been made to convert the *Industrial Area 1* land use in the Secondary Plan into a residential community. An employment site assessment was submitted in support of the request and concludes that there is an abundance of rural industrial supply in Ottawa and that these industrial lands specifically are disadvantaged by not being in proximity to a major highway interchange or the Ottawa International Airport. The future traditional industrial designation at the future Highway 416 and Barnsdale interchange is in a better location for industrial supply along the Highway 416 corridor than the Village of Richmond. As such, 21 net hectares should be excluded from the “RIFS & Villages” vacant rural industrial supply.

However, the source of water services to the southeast area needs to be further investigated and may require additional infrastructure investment within the village. The converted industrial lands would be serviced by communal water supply and central wastewater collection and treatment system. For water supply, it is unknown at this time whether a connection to an existing communal well operated by the City is suitable for the proposed new neighbourhood and if not, the Richmond southeast landowners would need to construct their own communal groundwater well, storage and distribution system (subject to City design approval) which, following successful commissioning, would be transferred to the City to own and operate.

Converting land from the industrial to residential uses may increase wastewater flows but will not impact the hydraulic operation of the overall system. To provide a gravity wastewater outlet for the southeast development lands, a new trunk sewer (along Cockburn or King Street) between the Richmond sewage pumping station and Ottawa Street would need to be constructed by the landowner(s). Cost recovery of this trunk sewer would occur through development charges.

To accommodate development that has been draft approved to date in the village, two current wastewater upgrade projects are expected to be tendered in 2021 (twinning of 5.9 km of forcemain and upgrades to the Richmond wastewater pumping station). In order to accommodate wastewater flows from the southeast development, the remaining 6.4 km of forcemain that discharges to the gravity outlet in Kanata would need to be twinned, with the landowners front-ending the cost of the project. As the ratio of residential to industrial development would change, the Area-Specific Development Charges would need to be adjusted as part of the next Development Charges By-law update.

Given the size of this part of the village that is largely undeveloped, the direction to advance the evolution of walkable 15-minute neighbourhoods, and the requirement to analyze servicing options that may also need to consider other parts of the village, a secondary planning process should be required to examine all of the planning considerations, similar to how the new Official Plan intends to plan other future neighbourhoods, prior to considering applications for plans of subdivision or site plan control.

Vars Business Park Adjustment

The Vars business park, south of the Village of Vars at the Highway 417 and Rockdale Road interchange, has approximately 51 net hectares of vacant industrial land. The business park is bisected by Highway

417 with 10 vacant net hectares on the south side and 41 vacant net hectares on the north side. The south side is mostly occupied with existing uses and is adjacent to the municipal border with the Township of Russell and their established business park known as the “417 Industrial Park”. The north side has a few existing uses clustered north of the interchange and is mostly vacant; however, there is floodplain at locations that make it difficult to provide large contiguous parcels for land extensive uses and clusters of business normally associated with rural business parks. As such, 41 net hectares should be excluded from the “Other” vacant rural industrial supply.

There is also an opportunity for parcels within the Vars business park to connect to water and wastewater services from the Township of Russell, subject to capacity availability, where the benefiting landowners would be expected to pay the full costs of the connection and their contribution to the trunk system. As the planning of the Township’s infrastructure services unfolds the new Official Plan process should continue to review whether all financial obligations can be transferred to the landowners, what mechanisms are required between the City, the Township, and the landowners, and what Official Plan policy amendments may be required if there are no financial obligations to the City.

After accounting for the change in the AG Reed business park from rural to urban and the above rural business park adjustments, the adjusted rural industrial area supply is 541 net hectares, of which 421 net hectares (78 per cent) are in *Rural, Industrial, Freight, Storage* designations and 120 net hectares (22 per cent) are in other designations as shown in Figure 27.

July 2018	Vacant Supply (net HA)
RIFS & Villages	421
Other	120
Total	541

Figure 27: 2018 Adjusted Rural Industrial Supply

5.4 Additional Rural Industrial Lands

As most of the industrial and logistics growth is expected to locate in the urban area due to access to municipal infrastructure, work force, and customer base, 421 net hectares within rural industrial areas and villages appears to be more than sufficient to meet rural industrial demands to 2046. However, these vacant industrial lands are not equally distributed, with 282 net hectares (67 per cent) located in the Carp Road rural industrial corridor. Figure 28 shows the distribution of the adjusted vacant industrial hectares by *Rural Industrial, Freight and Storage* and village industrial area.

RIFS/Village	Vacant Supply (net HA)	% of Total
Carp Rd Corridor Rural Employment Area	282	67%
Moodie Drive Industrial Area	8	2%
Jordel Agri-Industrial Commercial Park	18	4%
South Gloucester Industrial Area	41	10%
Gordon McKeown Industrial Area	6	1%
IndCum Industrial Area	64	15%
Richmond Industrial Area	2	0%
Total	421	100%

Figure 28: Adjusted Rural Industrial Supply by Business Park

Since July 2018, there has been some development on these lands, which is expected. However, significant development from the first Amazon fulfillment centre has since occurred, removing about 35 net hectares from the IndCum Industrial Area. In addition, a proposal for a light industrial warehouse in the Jordel Agri-Industrial Commercial Park in the Village of North Gower may remove 18 net hectares from the supply. Excluding the Carp Road industrial corridor, the Amazon development in the IndCum Industrial Area, and assuming an approval of the warehouse in North Gower, there will be 86 net hectares left in rural industrial designations as shown in Figure 29, of which only 29 net hectares will be along Highway 417.

RIFS/Village	Vacant Supply (net HA)	% of Total
Moodie Drive Industrial Area	8	10%
Jordel Agri-Industrial Commercial Park	-	0%
South Gloucester Industrial Area	41	48%
Gordon McKeown Industrial Area	6	7%
IndCum Industrial Area	29	34%
Richmond Industrial Area	2	2%
Total	86	100%

Figure 29: Rural Industrial Supply Post-Warehouse Development Outside of Carp Rd Corridor

Highway 417 is an important goods movement corridor that connects to ports of entry for commercial trade and cargo in Cornwall, Montréal and freight origins from the Maritimes. East of the Rideau River, Highway 417 crosses urban, greenbelt, and rural areas. There is a low amount of existing vacant industrial supply at any of the urban or rural interchanges. Within the urban area, the potential development of the city's fourth distribution centre at Hunt Club Road will only leave about 12 net hectares of vacant supply adjacent to this interchange, and those lands may have challenges to directly access Hunt Club Road. The National Capital Commission Greenbelt, environmental features, and floodplain are constraints to adding new vacant lands along this section of Highway 417.

The IndCum Industrial Area, south of the Highway 417 and Boundary Road interchange, has approximately 29 net hectares remaining after removing development that occurred between July 2018 to December 2019. Of this remaining supply, 70 per cent of the vacant lots are less than 1 hectare in size and the largest parcel is just over 5 hectares.

Most of the IndCum Industrial Area is designated as *Rural Employment* Area in the current Official plan. Lands fronting onto Thunder Road and the west side of Boundary Road in this area are designated *General Rural* and *Rural Natural Features* in the current Official Plan. There is a mix of residential, small commercial business, and vacant lands along this corridor. There are also a couple of watercourses and portions of an unevaluated wetland in this area. The Capital Region Resource Recovery Centre will be located on lands designated as *General Rural* east of the IndCum Industrial area and south to Devine Road, also shown with a *Solid Waste Disposal* symbol. Figure 30 shows the current Official Plan designations at the Highway 417 and Boundary Road interchange.

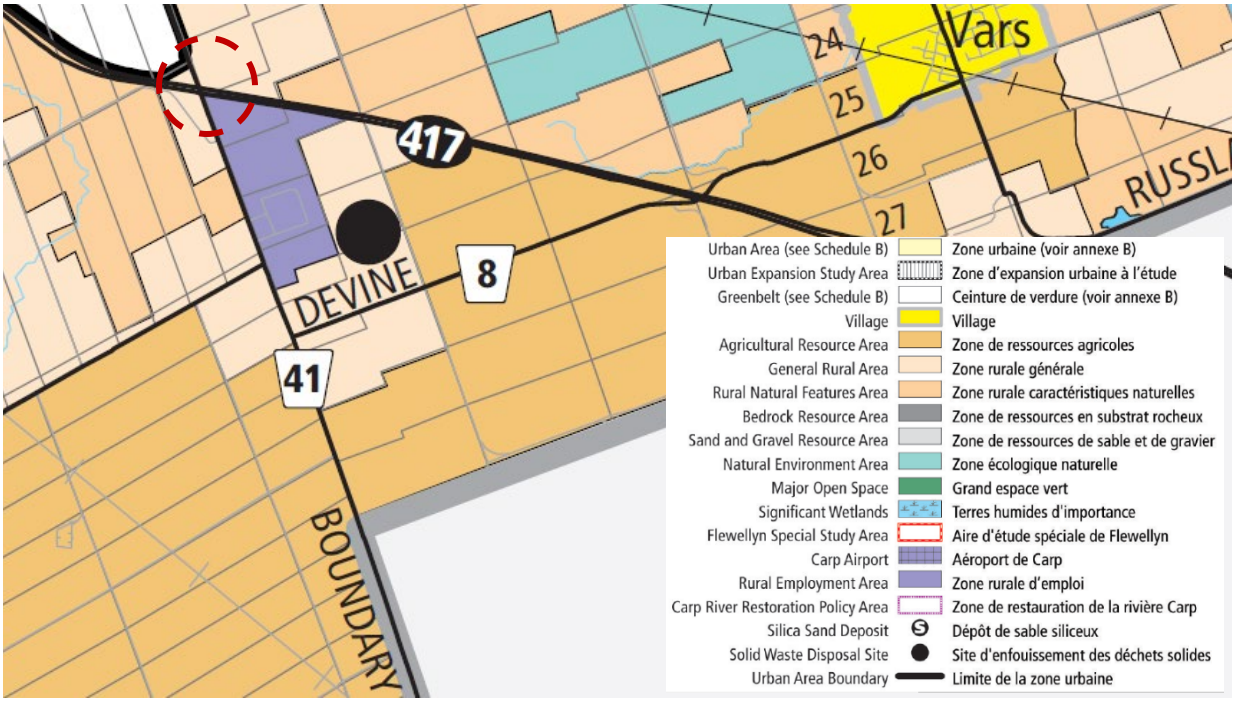

Figure 30: Highway 417 and Boundary Road Interchange Current Official Plan Designations

There are parcels on the west side of Boundary Road that are currently regulated as the *Rural Heavy Industrial Zone* with site-specific land use permissions.These parcels are approximately 7.6 net hectares combined and are included as part of the IndCum Industrial Area inventory but are designated as *Rural Natural Features* in the current Official Plan. Despite the designation, the parcels have been graded and there does not appear to be any natural features on-site. There appears to be a short watercourse that pools on the northerly site, however further on-site investigation through the development approvals process will help determine whether it is part of a larger, naturally occurring source or stormwater runoff from Boundary Road. These lands are included in the City's rural industrial inventory under the "RIFS & Villages" category in Figure 26 and Figure 27 and should be included within the *Rural Industrial, Freight and Storage* designation in the new Official Plan to recognize the existing zoning and their function as part of the rural business park at this interchange. However, as these lands are already considered part of the rural industrial supply, formerly recognizing the existing zoning through a designation does not add supply to this section of the Highway 417 corridor.

The Carlsbad Trickle Feed System is a reliable source of potable water from the City's central treated-water network to rural residences and businesses. The system is currently used by the Amazon warehouse at 5225 Boundary Road. The Carlsbad Trickle Feed system was commissioned in response to public health issues associated with groundwater issues in the general area and as such private on-site water services will not be a solution if there is no capacity in the system to supply potable water. Any industrial-related use associated with full-time employees on-site will require a connection to the trickle feed system. The potential for future development to connect to the system is limited by the system's capacity and allocation to existing vacant lots, including potential severances. The system has a limited residual capacity beyond this allocation. Any new industrial-related structure must draw from this residual capacity limiting the potential for the number and/or size of new structures. Current Official Plan policies for the IndCum industrial area require applications for the creation of new lots or a change of use requiring a zoning amendment to be accompanied by an assessment of the residual capacity of the whole system taking into consideration of existing service commitments and allocation.

However, industrial parks in the rural area are intended to accommodate uses that are more outdoor storage extensive rather than large building structures and it is conceivable that there may be uses related to outdoor storage that do not require on-site water services. To preserve the strategic location of vacant lands adjacent to this highway interchange as rural industrial supply, the new Official Plan should consider additional *Rural, Industrial, Freight, Storage* lands along Boundary Road as close to the interchange as possible. Figure 31 shows the proposed new rural industrial lands south of the Highway 417 and Boundary Road interchange.

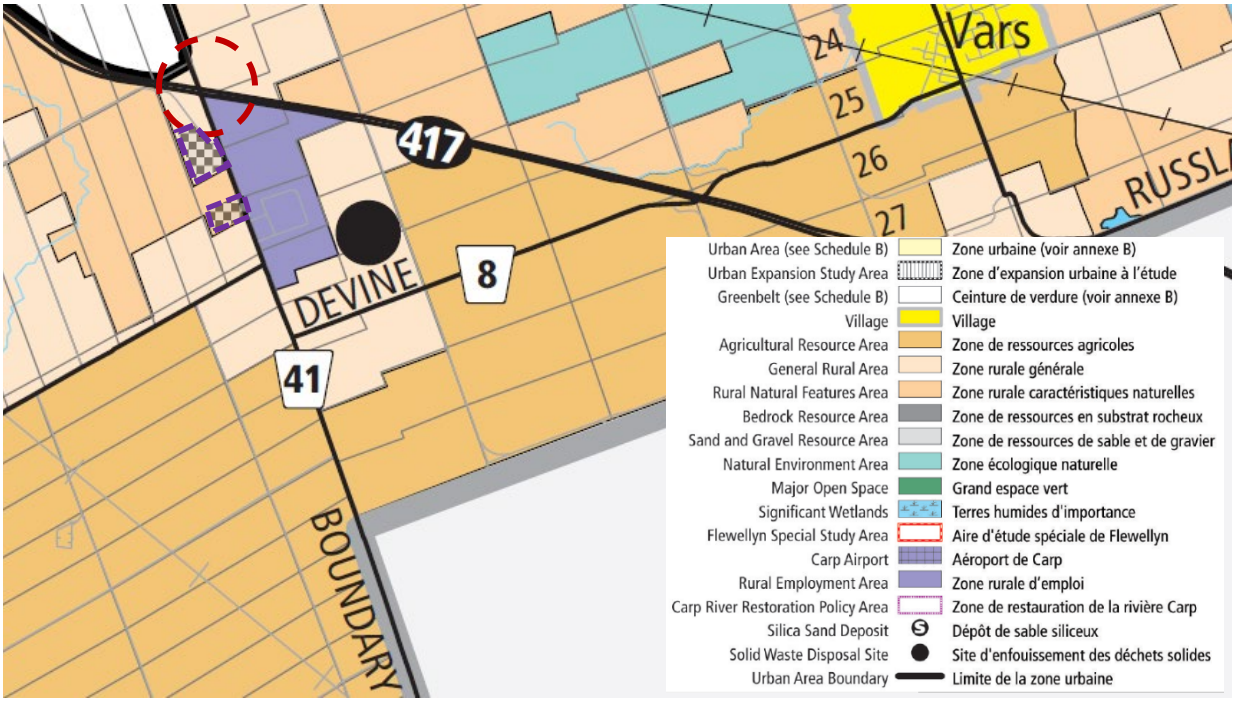

Figure 31: Proposed New Rural Industrial South of Highway 417 and Boundary Road Interchange

The section of *General Rural* immediately southwest of Highway 417 and Boundary Road, excluding existing residential uses fronting onto Thunder Road, represents approximately 20 net hectares. Due to their adjacency and direct access to an interchange, these lands represent a strategic addition to the rural industrial supply along Highway 417 and the new Official Plan should consider adding these lands as *Rural, Industrial, Freight, Storage* at a minimum for uses that are primarily related to outdoor storage if there are no opportunities to connect to the Carlsbad Trickle Feed system. An additional 20 net hectares will increase the vacant rural industrial supply at the IndCum Industrial Area to 49 net hectares and the overall vacant rural industrial supply to 106 net hectares outside of the Carp Road corridor as shown in Figure 32.

RIFS/Village	Vacant Supply (net HA)	% of Total
Moodie Drive Industrial Area	8	8%
Jordel Agri-Industrial Commercial Park		0%
South Gloucester Industrial Area	41	39%
Gordon McKeown Industrial Area	6	5%
IndCum Industrial Area	49	46%
Richmond Industrial Area	2	2%
Total	106	100%

Figure 32: Updated Vacant Rural Industrial Supply Post-Warehouse Development Outside of Carp Rd Corridor

5.5 Other Rural Industrial

The "Other" rural industrial areas in Figure 27 that are part of the City's industrial inventory but do not have a corresponding rural industrial designation are:

- Ashton Industrial Area at Highway 7 and Ashton Station Road
- Westwood Industrial Area at Highway 7 and Hazeldean Road
- Highway 31 South Greely Industrial Area
- Vars Business Park at Highway 417 and Rockdale Road

These areas represent industrial-related uses that are outside of Rural Industrial Logistics areas, as shown in Figure 3. These areas will have constraints for large industrial-related uses, either by on-site private servicing, on-site water supply for fire suppression systems, distance from the urban area, presence of environmental features, or presence of floodplain. Many of these areas have a few existing uses and are adjacent to parcels with zoning that permits non-industrial uses. These areas are more appropriate within the *Rural Countryside* designation in the new Official Plan than a rural industrial designation that limits the variety of land uses to serve local residents and the travelling public.

Conclusion and Recommendations

The new Official Plan is a strategic document that describes how the city will grow over time and is informed by growth projections. Growth projections to the year 2046 anticipate more population growth annually than seen in the past, primarily based on increases in immigration, both international and domestic. This population growth also translates into employment growth, which by 2046 is projected to be 827,000 total jobs, a growth of 189,400 jobs (30 per cent) between 2018 to 2046. These 189,400 jobs will come from a variety of sectors and land-use based categories such as large office, industrial-related, population-related, and other rural-based.

This strategy focusses on the industrial-related sector to ensure sufficient lands are designated and preserved for the needs of the local population and to help balance and diversify the local economy. Trends and drivers of change in the industrial and logistics sector include an increase in e-commerce that drives a movement to new distribution centres with automated storage and retrieval systems. The emergence of pre-fabrication and assembly that are also automated will also need adequate industrial space. The change to a just-in-time delivery system and advancements in automation technology may further transform the distribution network into a finer grained system, particularly in light of issues experienced with last kilometer delivery and increasing competition for curb-space.

Between 2018 to 2046 there will be approximately 16,000 industrial-related jobs, of which 12,200 will need to be accommodated on 363 to 507 net hectares of urban vacant lands designated for industrial and logistics uses. With an existing 382 net hectares of supply, adding an additional 100 net hectares to reach the upper end of the estimated demand help will help ensure a sufficient supply for industrial-related employment to 2046, including opportunities for new larger-scale fulfillment centres, or new forms of manufacturing. Due to the dominance of ground-transport for the movement of goods to and from Ottawa and the need for municipal infrastructure, locations at highway interchanges adjacent to the urban boundary are key locations.

The new 100 net hectares are recommended to come in part from the existing rural AG Reed business park at the Highway 417 and Carp Road interchange, and vacant lands southeast of this interchange. This area will connect with existing urban industrial lands southwest of the Highway 417 and Palladium Drive interchange providing a vacant urban industrial corridor between two interchanges.

A future urban industrial corridor is also recommended at the future Highway 416 and Barnsdale Road interchange. This corridor should be identified in the new Official Plan to preserve the opportunity for future urban industrial uses that will be timed with the new interchange.

At the Highway 417 and Boundary Road interchange, additional rural industrial lands are recommended on the south of the highway on the west side of Boundary Road. These lands would help with additional supply on Highway 417 east of the Rideau River as existing supply is low with little opportunities to add new lands at other interchange locations.