

Existing and Future Population, Employment, and Land Use Implications and Analysis

Municipality of North Grenville Servicing Master Plan Update



Existing and Future Population, Employment, and Land Use Implications and Analysis Servicing Master Plan Update

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1.0 Introduction

The Municipality of North Grenville (the Municipality) is a small- to mid-sized community comprised of a mix of rural and urban development. Located adjacent to the southern border of the City of Ottawa, the Municipality has experienced tremendous growth over recent years. In fact, it is one of the fastest growing communities in eastern Ontario. Most of the growth is expected to be within the northwest quadrant of the urban area. Due to this elevated growth rate the Municipality is experiencing, the Municipality retained J.L. Richards & Associates Limited (JLR) to update the North Grenville Water and Wastewater Servicing Master Plan, which was originally produced in 2015.

As part of this Master Plan update, JLR is identifying population projections for the zero to five (5) year, five (5) to ten (10) year, ten (10) to twenty (20) year and twenty plus year (20 +) buildout timeframes for the Servicing Master Plan. It should be noted that the Municipality recently had a Long-term Population, Housing and Employment Study (December 2023) completed by KPMG to help inform their upcoming Official Plan Review. Our analysis used the findings from the KPMG report to help calculate the estimated populations to inform the Servicing Master Plan. It is not meant to replace the findings of the KPMG report for Official Plan purposes.

2.0 Settlement Strategy and Census Data

The Municipality has experienced significant growth between 2011 to 2021, at a rate of just over 9% for every five-year period. During this period, the Municipality added an average of 135 new dwelling units each year. The Municipality recently conducted a Long-term Population, Housing and Employment Study (December 2023) which identified the long-term population, housing, and employment projections for the planning horizon of 2046.

Based on the Statistics Canada 2021 Census of Population, the Municipality of North Grenville's population was 17,964 people, while Kemptville [population centre] had a population of 4051 people. The Long-term Population, Housing and Employment Study (December 2023) identified the population of Kemptville as approximately 6,000 people in the urban service area. The discrepancy between the two figures is likely because the geographic area for Kemptville [population centre] does not account for the entirety of the urban serviced area of Kemptville.

According to the Long-term Population, Housing and Employment Study (December 2023), the average household size in the Municipality of North Grenville is 2.5 persons per dwelling unit. However, according to Statistics Canada, the average household size in Kemptville [population centre] is 2.2 persons per dwelling unit. As previously noted, the Kemptville [population centre] does not factor all the lands within the Kemptville urban serviced area, which is likely the source of this discrepancy. Therefore, it is recommended that a conservative population density (per person per dwelling unit) is used to help inform the population projection. It is recommended that the average between the two different North Grenville and Kemptville [population centre] densities (per person per dwelling unit) be used, which is 2.35 persons per dwelling unit.

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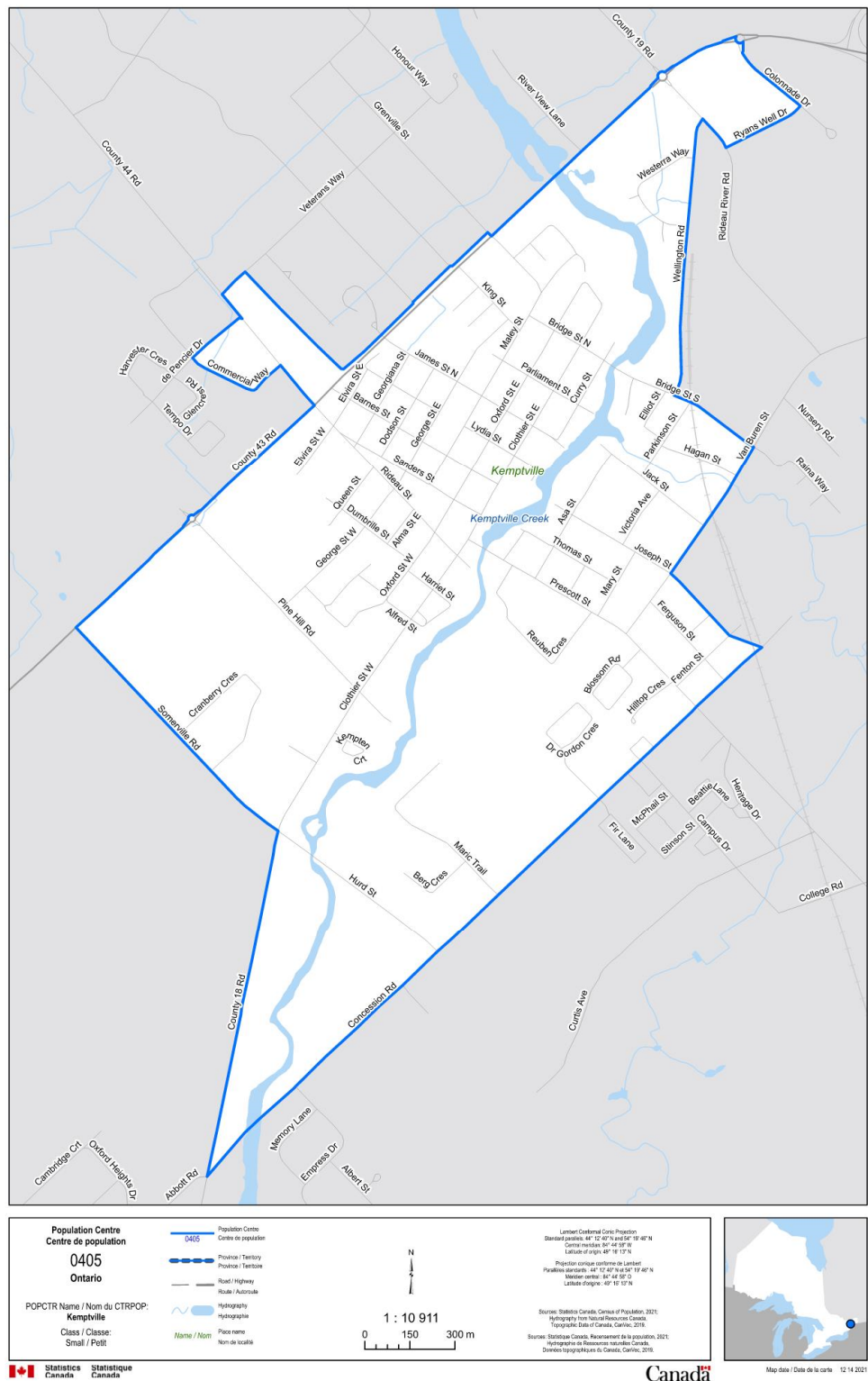


Figure 1: Census (2021) Kemptville [population centre] Area

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3.0 Residential Infill and Intensification

The Municipality of North Grenville Official Plan (2018) has targeted 20% of growth in areas that are specified in North Grenville's infill and intensification policies. According to the Long-term Population, Housing and Employment Study (December 2023), in the census-designated place of Kemptville [population centre], the net residential development across all housing types only comprised 18% of the total new housing development in the Municipality. This is slightly below the stated goal of 20%.

According to the study, all development within the Kemptville [population centre] census area between 2016 and 2021 was in the form of higher density housing. It is important to note that most of the new development within the Kemptville urban serviced area is outside of the Kemptville [population centre] census area. Therefore, the information in Table 1 should be used to determine infill and intensification only.

Table 1: Development in Kemptville and the Municipality (2016 to 2021) by Housing Type

Housing Type	Kemptville			Municipality of North Grenville			Kemptville Share (%)
	2016	2021	Five-Year Increase	2016	2021	Five-Year Increase	
Single Detached	1020	1020	0	5355	5790	435	0%
Semi-detached + other detached	185	215	30	275	330	55	55%
Duplex + Row House	270	310	40	395	460	65	62%
Apartment	220	255	35	380	425	45	78%
Total	1695	1800	105	6405	7005	600	18%

The Long-term Population, Housing and Employment Study (December 2023) provided three growth scenarios (low-, medium-, high-growth). They assume 30%, 50%, and 70%, of projected growth, respectively, for the County of Leeds and Grenville. The study noted that Scenario 2 (Medium Growth) is the most likely population growth scenario. It is used to create housing demand projections.

Table 2: Medium Growth Scenario (Municipality, 2023)

Year	Population	Five-Year Growth
2021 ⁽¹⁾	17,964	9.2%
2026	20,845	16%
2031	23,088	10.8%
2036	25,483	10.4%
2041	27,980	9.8%
2046	30,602	9.4%

Table Notes:

(1) 2021 Actual figure from Statistics Canada

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4.0 Projected Demand for New Housing

The Municipality's Official Plan set the following targets for new development:

- Low Density (Approximately 18 units/ha): 68%
- Medium Density (approximately 30 units/ha): 21%
- High Density (approximately 45 units/ha): 11%

These are targets to be met or exceeded, not requirements under the Official Plan.

The Long-term Population, Housing and Employment Study (December 2023) did not use these targets but relied on observed historical trends since 2016. Based on these housing trends, the study predicted there will be a significant shift in the projected housing types. The projected housing shifts are in Table 3.

Table 3: Projected Housing Shifts (2021 to 2046) (Municipality, 2023)

End of Five-Year Period	Total New Dwellings	Single Detached Dwellings	Mid-Density Row house	Low-Rise Apartment
2021 ⁽¹⁾	605	435	120	45
2026	758	506	189	63
2031	848	513	256	79
2036	862	458	314	90
2041	874	388	384	102
2046	958	324	509	125
Total	4,905	2,624	1,772	504

Table Notes:

(1) 2021 Actual figure from Statistics Canada.

The distribution of each housing typology is summarized as percentages in Table 4.

Table 4: Projected Housing Typology (2021 to 2046) by Percentage (Municipality, 2023)

End of Five-Year Period	Single-detached House (%)	Mid-Density Row House (%)	Low-Rise Apartment (%)
2021 ⁽¹⁾	72%	20%	7%
2026	67%	25%	8%
2031	60%	30%	9%
2036	53%	36%	10%
2041	44%	44%	12%
2046	34%	53%	13%

Table Notes:

(1) 2021 Actual figure from Statistics Canada.

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5.0 Housing Land Demand

Based on the growth projections in the Long-term Population, Housing and Employment Study (December 2023), a total of 4,905 dwelling units will be required to meet the Municipality's residential needs. While the Official Plan directs most of the development towards the Kemptville urban serviced areas or the hamlets, it does not specify a target based on settlement boundaries.

The study projected the following assumptions of average gross dwelling units per hectare to be used for new developments.

- Single Detached House 18 units/ha
- Mid-Density Row House 30 units/ha
- Low-Rise Apartments 45 units/ha

At the time the study was written (2023), development had been approved through *Planning Act* applications for approximately 1790 new dwelling units. Of these, 244 were expected to be built by 2024. The projected number of dwelling units required for this five-year period (ending in 2026) was 758. The study provided a three-year projection, identifying a total of 454 new dwelling units required.

If 244 units were expected to be built by 2024, then an additional 210 dwelling units are remaining to be built between 2024 and 2026.

The study provided the following land use projections:

Table 5: Land Use Projections (2026 to 2046) (Municipality of North Grenville, 2023)

End of Five-Year Period	Area (ha)				Cumulative Land
	Single Detached	Mid-Density	Apartment	Total Land	
2026	28.1	6.3	1.4	35.8	35.8
2031	28.5	8.5	1.8	38.8	74.6
2036	25.4	10.5	2.0	37.9	112.5
2041	21.6	12.8	2.3	36.6	149.1
2046	18.0	17.0	2.8	37.7	186.9
Total	121.6	55.1	10.2	186.0	186.9

The Municipality of North Grenville provided building permit information for the years spanning 2016 through 2021, including the housing typology. The following tables provide a breakdown of these numbers.

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Table 6: Historical Building Permits for Single Detached Dwellings (2016 to 2021)

Year	Urban	Rural	Total % Urban
2016	84	33	72
2017	76	51	60
2018	110	43	72
2019	36	38	49
2020	96	41	70
2021	74	63	54
Total	476	269	64 (average)

Based on the building permit information received from the Municipality, the Municipality averaged 79 building permits for Single Detached Dwellings per year, from 2016 through 2021.

Table 7: Historical Building Permits for Mid-Density Row Houses (2016 to 2021)

Year	Urban	Rural	Total % Urban
2016	23	0	100
2017	37	0	100
2018	13	0	100
2019	3	0	100
2020	20	0	100
2021	42	0	100
Total	138	0	100

Based on the building permit information received from the Municipality, the Municipality averaged 23 building permits for Mid-Density Row Housing per year, from 2016 through 2021.

Table 8: Historical Building Permits for Apartments (2016 to 2021)

Year	Urban	Rural	Total % Urban
2016	7	0	100
2017	1	2	33
2018	22	0	100
2019	0	0	0
2020	0	0	0
2021	18	4	82
Total	48	6	89 (average)

Based on the building permit information received from the Municipality, the Municipality averaged eight building permits for apartment units per year, from 2016 through 2021.

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6.0 Urban Serviced Greenfield Development & Re-development Outside the Kemptville [population centre] Census Area

The Long-term Population, Housing and Employment Study (December 2023) provided the number of dwelling units by housing type which was added to the Kemptville [population centre] census area for the years of 2016 through 2021. This information was used in the report to determine how the Municipality was meeting its infill/intensification targets of the Official Plan. However, it did not provide information on the greenfield development, or redevelopment occurring outside of the Kemptville [population centre] census area, which includes a significant portion of the urban service boundary and is where most of the urban serviced growth has occurred.

To better understand how much development has occurred, by housing type, through Greenfield development and redevelopment within the urban serviced areas outside the Kemptville [population centre] census area, the total number of dwelling units by housing type for the Kemptville [population centre] census area were subtracted from the overall urban serviced building permit data provided by the Municipality.

6.1 Single Detached Dwellings

There were no single detached dwellings identified in the Kemptville [population centre] census area. Therefore, all the 476 single detached dwelling building permits for the urban serviced area occurred outside the Kemptville [population centre] census area. This averages to approximately 79 single detached dwellings a year, between 2016 through 2021.

6.2 Mid-Density Row Housing

According to the Long-term Population, Housing and Employment Study (December 2023), the Kemptville [population centre] census area had a total of 70 new mid-density row housing. The entire serviced area had a total of 138 building permits issued for mid-density row housing between 2016 and 2021.

$$138 - 70 = 68 \text{ Total Mid-Density Row Housing}$$

A total of 68 mid-density row housing dwelling units were added to the urban serviced area outside the Kemptville [population centre] census area from 2016 through 2021. These units can be attributed to greenfield development and redevelopment of existing sites. This averages to approximately 11 mid-density row housing dwelling units per year for that five-year span.

6.3 Apartment Dwelling Units

According to the Long-term Population, Housing and Employment Study (December 2023), the Kemptville [population centre] had a total of 35 new apartment dwelling units, while the entire serviced area had a total of 48 building permits issued for mid-density row housing.

$$48 - 35 = 13 \text{ Total Apartments}$$

A total of 13 apartment dwelling units were added to the urban serviced area outside the Kemptville [population centre] census area between 2016 through 2021. These units can be attributed to greenfield

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development and redevelopment of existing sites. This averages to approximately two apartment dwelling units per year for that five-year span.

Using the information above, a percentage of housing typology can be derived for both the Kemptville [population centre] census area and the remaining urban serviced area, assumed to be greenfield development and redevelopment of existing sites.

Table 9: Housing Typology Distribution by Service Area

Housing Typology	Kemptville [population centre] five-year change	Other Urban Serviced Areas five-year change	Total of Housing Typology in Other Urban Serviced Areas (%)
Single Detached Dwelling Units	0	476	100
Mid-Density Row Housing	70	68	49
Apartments	35	13	27

7.0 Population Analysis

To provide a more accurate understanding of the projected population, particularly for infill/intensification (Kemptville [population centre] census area) and greenfield/redevelopment (outside the Kemptville [population centre] census area), the existing numbers (Municipality of North Grenville) must be broken down to determine how much housing typology can be expected within the urban serviced area.

This can be achieved through multiplying the total housing typology numbers projected for the five-year intervals provided in the Long-term Population, Housing and Employment Study (December 2023), by the observed urban housing typology percentages from 2016 to 2021 for the urban serviced area. This results in a projected total number of units required in the urban serviced area, based on observed percentages.

7.1 Single Detached Dwellings

Table 10: Single Detached Dwelling Required in the Urban Serviced Area (2026 to 2046)

Five-Year Period Ending	Total Dwelling Units	Percent of Single Detached Dwellings in the Urban Serviced Area (2016 to 2021)	Total Units Required in the Urban Serviced Area
2026	506	64%	324
2031	513		328
2036	458		293
2041	388		248
2046	324		207

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7.2 Mid-Density Row Housing

For the Mid-Density Row Housing, the observed percentage of this housing typology within the Urban Serviced area is 100%. Therefore, the number of dwelling units for each five-year interval remains the same as those projected in the Long-term Population, Housing and Employment Study (December 2023). These numbers are:

Table 11: Mid-Density Row Housing Required in the Urban Serviced Area (2026 to 2046)

Five-Year Period Ending	Total Dwelling Units Required in the Urban Serviced Area
2026	189
2031	256
2036	314
2041	384
2046	509

7.3 Apartment Dwelling

Table 12: Apartment Dwelling Units Required in the Urban Serviced Area (2026 to 2046)

Five-Year Period Ending	Total Dwelling Units	Percent of Apartment Units in the Urban Serviced Area (2016 to 2021)	Total Units Required in the Urban Serviced Area
2026	63	89%	56
2031	79		70
2036	90		80
2041	102		91
2046	125		111

7.4 Housing Typology Distribution

After determining the dwelling units required for each housing typology in the urban serviced area for each five-year interval, the distribution of each housing typology within Kemptville [population centre] census area and the other urban serviced areas can be determined. This can be achieved through multiplying the total number of each housing typology total units required (urban serviced area) by the observed percentages in housing typologies from 2016 to 2021 in Table 9.

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Table 13: Number of Single Detached Dwelling Units Required (2026 to 2046)

Five-year Ending	Total Dwellings Units Required (Other Urban Serviced Areas)
2026	324
2031	328
2036	293
2041	248
2046	207

As seen in Table 9 for single detached dwellings, all units (100%) within the urban serviced area were entirely outside the Kemptville [population centre] census area.

Table 14: Number and Distribution of Mid-Density Row Housing Units Required (2026 to 2046)

Five-year Ending	Total Dwelling Units Required	Housing Typology (%)		Total Dwelling Units Required	
		in Kemptville [population centre]	in Other Urban Serviced Areas	in Kemptville [population centre]	in Other Urban Serviced Areas
2026	189	51	49	96	93
2031	256	51	49	131	125
2036	314	51	49	160	154
2041	384	51	49	196	188
2046	509	51	49	260	249

Table 15: Number and Distribution of Low Rise Apartment Units Required (2026 to 2046)

Five-year Ending	Total Dwelling Units Required	Housing Typology (%)		Total Dwelling Units Required	
		in Kemptville [population centre]	in Other Urban Serviced Areas	in Kemptville [population centre]	in Other Urban Serviced Areas
2026	56	73	27	41	15
2031	70	73	27	51	19
2036	80	73	27	58	22
2041	91	73	27	66	25
2046	111	73	27	81	30

Using the numbers derived from the total number of dwelling units required for the Kemptville [population centre] census area and for other urban serviced areas, a total hectare for each area can be calculated using the projected assumptions of average gross dwelling unit per hectare to be used for new

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developments cited in the Long-term Population, Housing and Employment Study (December 2023). This can be done by dividing the total number of dwelling units by the average gross dwelling unit per hectare for each housing typology.

For the single detached dwellings, 18 units/ha was used.

Table 16: Number of Single Detached Dwelling Units and Land Required by Serviced Area Type (2026 to 2046)

Five-year Ending	Total Dwelling Units Required		Total Hectares Required		
	In Kemptville [population centre]	in Other Urban Serviced Areas	In Kemptville [population centre]	In Other Urban Serviced Areas	for entire Urban Serviced Area
2026	0	324	0	18	18
2031	0	328	0	18.2	18.2
2036	0	293	0	16.3	16.3
2041	0	248	0	13.8	13.8
2046	0	207	0	11.5	11.5
Total	0	1400	0	77.8	77.8

For Mid-Density Row Housing, 30 units/ha was used.

Table 17: Number of Mid-Density Row Housing Units and Land Required by Serviced Area Type (2026 to 2046)

Five-year Ending	Total Dwelling Units Required		Total Hectares Required		
	In Kemptville [population centre]	in Other Urban Serviced Areas	In Kemptville [population centre]	In Other Urban Serviced Areas	for entire Urban Serviced Area
2026	96	93	3.2	3.1	6.3
2031	131	125	4.4	4.2	8.6
2036	160	154	5.3	5.1	10.4
2041	196	188	6.5	6.3	12.8
2046	260	249	8.7	8.3	17
Total	843	809	28.1	27	55.1

For Low Rise Apartments, 45 units/ha was used.

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Table 18: Number of Low Rise Apartment Units and Land Required by Serviced Area Type (2026 to 2046)

Five-year Ending	Total Dwelling Units Required		Total Hectares Required		
	In Kemptville [population centre]	in Other Urban Serviced Areas	In Kemptville [population centre]	In Other Urban Serviced Areas	for entire Urban Serviced Area
2026	41	15	0.9	0.3	1.2
2031	51	19	1.1	0.4	1.5
2036	58	22	1.3	0.5	1.8
2041	66	25	1.5	0.6	2.1
2046	81	30	1.8	0.7	2.5
Total	298	111	6.6	2.5	9.1

8.0 Projected Population

8.1 Residential Population Projections

For land holdings where the mix of housing typologies proposed or approved was known, the Municipality has requested that we use the per person per units identified in the Municipality of North Grenville Engineering Standards for Design, Approval, and Construction, Section D, D2.05 for Domestic Demand which is as follows:

- Single Detached Dwellings = 3.4 person/unit
- Semi-Detached Dwellings = 2.7 person/unit
- Townhouse = 2.7 person/unit
- Apartments = 2 person/unit

JLR has also applied these per person per units to each typology for the projected population using the KPMG report information to ensure the same per person per unit counts were used for a proper comparison. For all other land holding areas where the housing typologies are not known, to obtain a projected population of the urban serviced area, the total number of dwelling units required is multiplied by the projected person per dwelling unit (2.35) calculated in Section 2.

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Table 19: Projected Population for Single Detached Dwelling Units (2026 to 2046)

Five-year Ending	Total Dwellings Required			Projected Population		
	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Serviced Areas	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Urban Serviced Areas
2026	324	0	324	1102	0	1102
2031	328	0	328	1115	0	1115
2036	293	0	293	996	0	996
2041	248	0	248	843	0	843
2046	207	0	207	704	0	704
Total	1400	0	1400	4760	0	4760

Table 20: Projected Population for Mid-Density Row Housing (2026 to 2046)

Five-year Ending	Total Dwellings Required			Projected Population		
	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Serviced Areas	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Urban Serviced Areas
2026	189	96	93	510	259	251
2031	256	131	125	691	354	338
2036	314	160	154	848	432	416
2041	384	196	188	1037	529	508
2046	509	260	249	1374	702	672
Total	1652	843	809	4460	2276	2184

Table 21: Projected Population for Low Rise Apartments (2026 to 2046)

Five-year Ending	Total Dwellings Required			Projected Population		
	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Serviced Areas	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Urban Serviced Areas
2026	57	42	15	114	84	30

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Five-year Ending	Total Dwellings Required			Projected Population		
	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Serviced Areas	Kemptville [population centre] and Other Urban Serviced Areas	Kemptville [population centre]	Other Urban Serviced Areas
2031	70	51	19	140	102	38
2036	80	58	22	160	116	44
2041	91	66	25	182	132	50
2046	111	81	30	222	162	60
Total	409	298	111	818	596	262

The Municipality has provided information on the number of existing dwelling units approved or planned (including the housing typologies) through *Planning Act* applications for all properties in the Town of Kemptville urban serviced area. Based on this information, the number of approved or planned dwelling units can be multiplied by the projected per person per dwelling unit identified in the Municipality of North Grenville Engineering Standards for Design, Approval, and Construction to obtain a projected population for each land holding.

For the purposes of this analysis, all commercial properties which the Municipality had identified as potential conversion to residential has been assigned a total population projection based on residential demands as the residential population projection would yield a higher population projection. All land holding areas (ha) were calculated using the geometry area of the parcel fabric. All land holdings which contained the wetland identified in the Northwest Quadrant by Niblett Environmental, and the floodplain as identified by RVCA has been subtracted from the total land holding area used in any calculations.

8.2 Population Projection (Year Intervals)

Table 22: Population Projection (0 - 5 Years)

Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
1*	154	40		632
3*	100	213	120	1155
7*			48	96
13			63	126
14			48	96

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Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
17			50	100
18			8	16
19			69	138
20			59	118
22		26	26	122
23*		30		81
27			79	158
Total	254	309	570	2838
Total Kemptville [population centre]	0	26	402	874
Total Other Urban Serviced Areas	254	283	168	1964

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

The properties identified as being within the 0-5 year interval can be found in Figure 1.

Table 23: Population Projection (5 - 10 Years)

Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
2*		32	398	882
7*	0	0	168	336
13		28		76

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Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
14			60	120
19			40	80
20			109	218
23*		20		54
27			43	86
47*		92		248
59	2	33	8	112
Total	2	205	826	2212
Total Kemptville [population centre]	2	61	260	692
Total Other Urban Serviced Areas	0	144	566	1521

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

The properties identified as being within the 5-10 year interval can be found in Figure 2.

Table 24: Population Projection (10 - 20 Years)

Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
2*	110	415		1495
10*	306	448	0	2250
15			36	72

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Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
47*	0	89	150	540
Total	416	952	186	4357
Total Kemptville [population centre]	0	0	36	72
Total Other Urban Serviced Areas	416	952	150	4285

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

The properties identified as being within the 10-20 year interval can be found in Figure 3.

Table 25 Population Projection (20 Plus Years)

Map ID	Single Detached	Semi Detached/Townhouse	Apartments	Total Population Projection
10*	152	139		892
Total	152	139		892
Total Kemptville [population centre]	0	0	0	0
Total Other Urban Serviced Areas	152	139	0	175

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

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For the residential land holdings where there were no approved or proposed dwelling units identified, the projected population must be determined. Through discussions with the Municipality, it was determined to use the average number of the following assumed average gross dwelling unit per hectare numbers from the of the Long-term Population, Housing and Employment Study (December 2023). Those numbers were as follows:

- Single Detached House 18 units/ha
- Mid-Density Row House 30 units/ha
- Low-Rise Apartments 45 units/ha

$$18 \text{ units/ha} + 30 \text{ units/ha} + 45 \text{ units/ha} / 3 = 31 \text{ units/ha}$$

Through discussions with the Municipality, it was determined that adding a 10% to the average unit/hectare was desirable in order to account for some potential Additional Residential Units. This results in density of 34 units/ha. This number can be used to calculate the projected population for each residential land holding which does not have approved or proposed dwelling units. This can be done by multiplying the unit per hectare by the size of the land holding to obtain the total dwelling units per property. The total dwelling units per property is then multiplied by 2.35 persons per dwelling unit to obtain the projected population.

There were no vacant residential land holdings for the 0-5 year interval where the housing typology was not known. Therefore, no calculations for this interval were required.

Table 26: Population Projection 5 - 10 Years

Map ID	Land Area (hectare)	Total Potential Dwelling Units (Land Size x 34 units/ha)	Projected Population (Dwelling Units x 2.35 person per unit)
9*	2.6	87	205
44	1.2	42	99
Total	3.8	129	304
Total Kemptville [population centre]	1.2	42	99
Total Other Urban Serviced Areas	2.6	87	205

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

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Table 27: Population Projection 10 - 20 Years

Map ID	Land Area (ha)	Total Dwelling Units (Land size x 34 units/ha)	Projected Population (Dwelling Units x 2.35 persons per unit)
4*	8.0	273	641
6*	11.6	395	928
8*	9.3	318	746
26*	7.4	253	594
30*	17.0	579	1361
47*	2.7	91	214
52*	6.0	358 ⁽¹⁾	841
56	1.1	36	85
58	2.4	81	191
Total	65.6	2384	5602
Total Kemptville [population centre]	3.5	118	276
Total Other Urban Serviced Areas	62.1	2266	5326

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

(1) Calculated using 60 units/ha as provided by the Municipality.

Table 28: Population Projection 20 Plus Years

Map ID	Land Area (ha)	Total Dwelling Units (Land size x 34 units/ha)	Projected Population (Dwelling Units x 2.35 persons per unit)
11	2.5	84	197
12	10.5	356	837
24*	1.8	62	145
34*	2.9	98	230
36*	13.8	468	1099
Total	31.4	1067	2508

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Map ID	Land Area (ha)	Total Dwelling Units (Land size x 34 units/ha)	Projected Population (Dwelling Units x 2.35 persons per unit)
Total Kemptville [population centre]	12.9	440	1034
Total Other Urban Serviced Areas	18.5	627	1474

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

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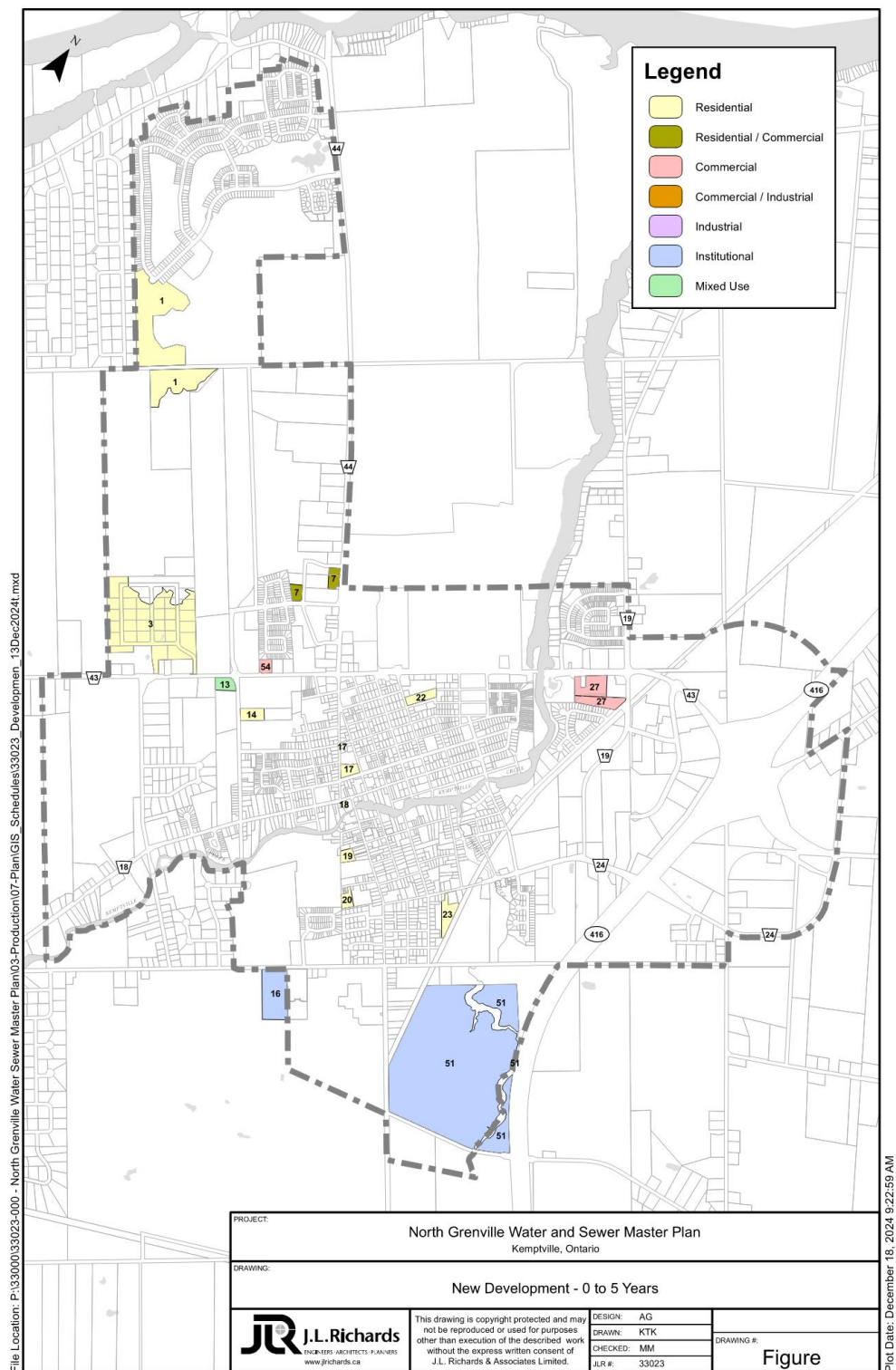


Figure 2: 0-5 Year Land Holdings

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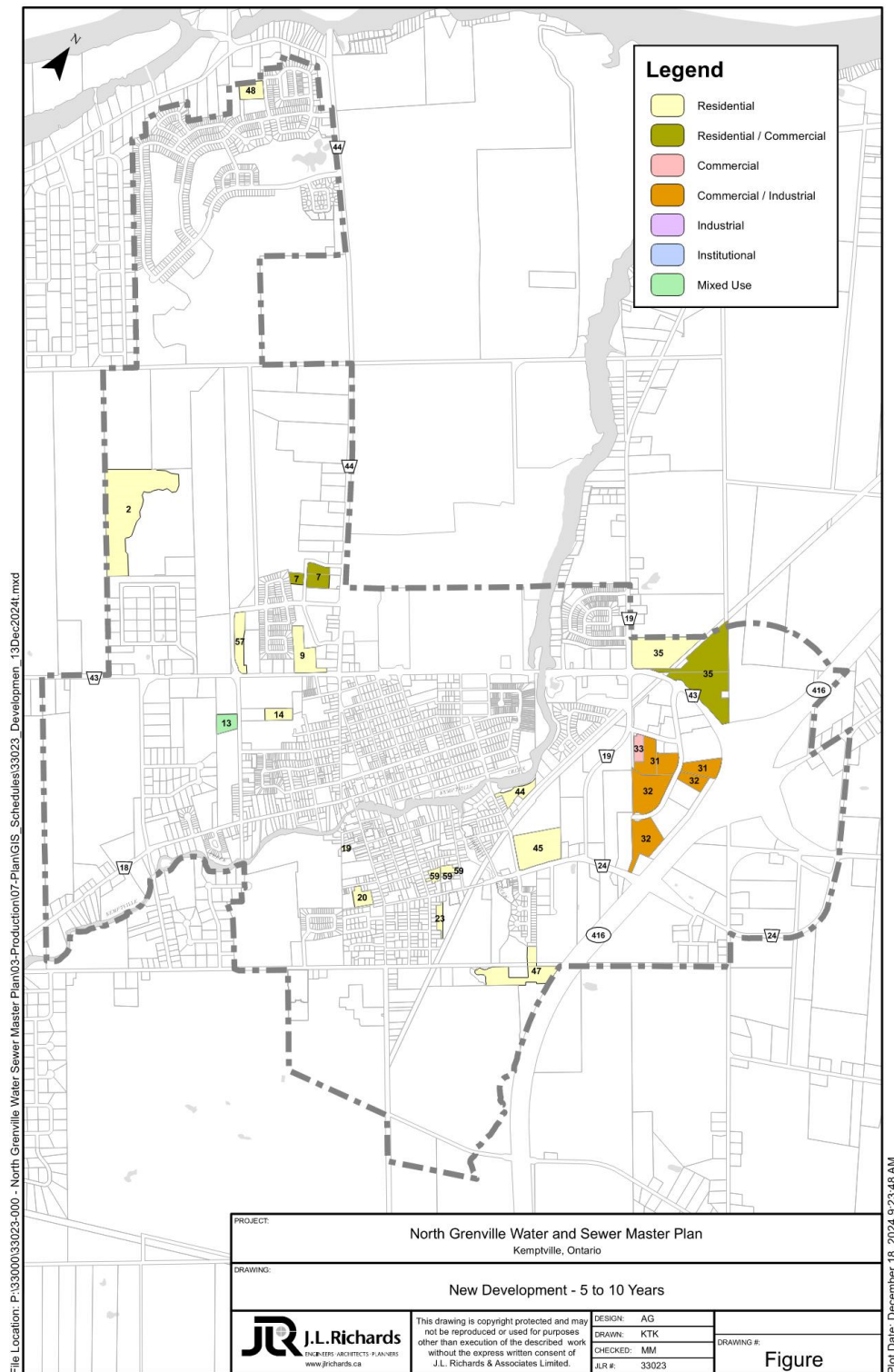


Figure 3: 5-10 Year Land Holdings

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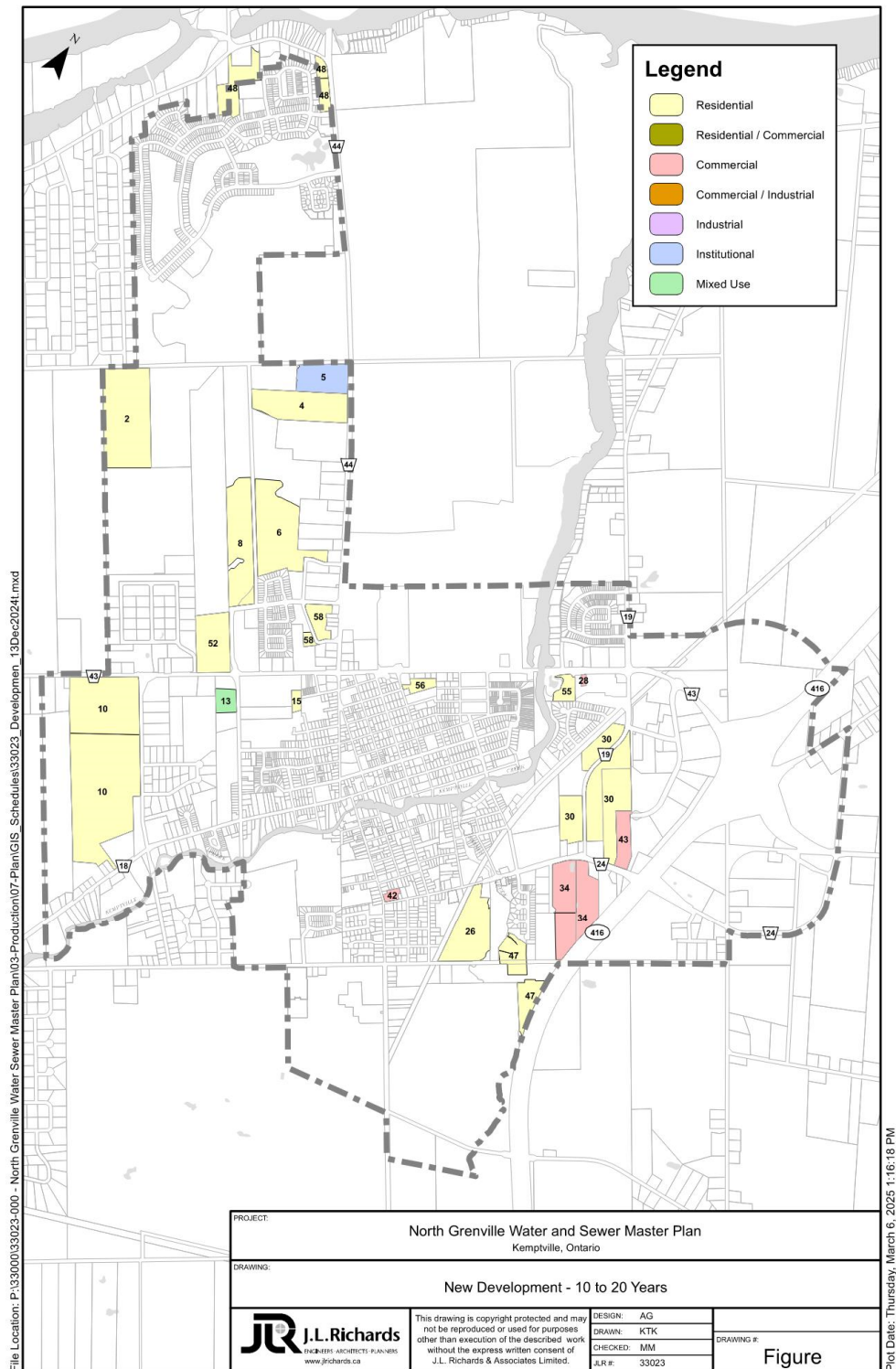


Figure 4: 10-20 Year Land Holdings

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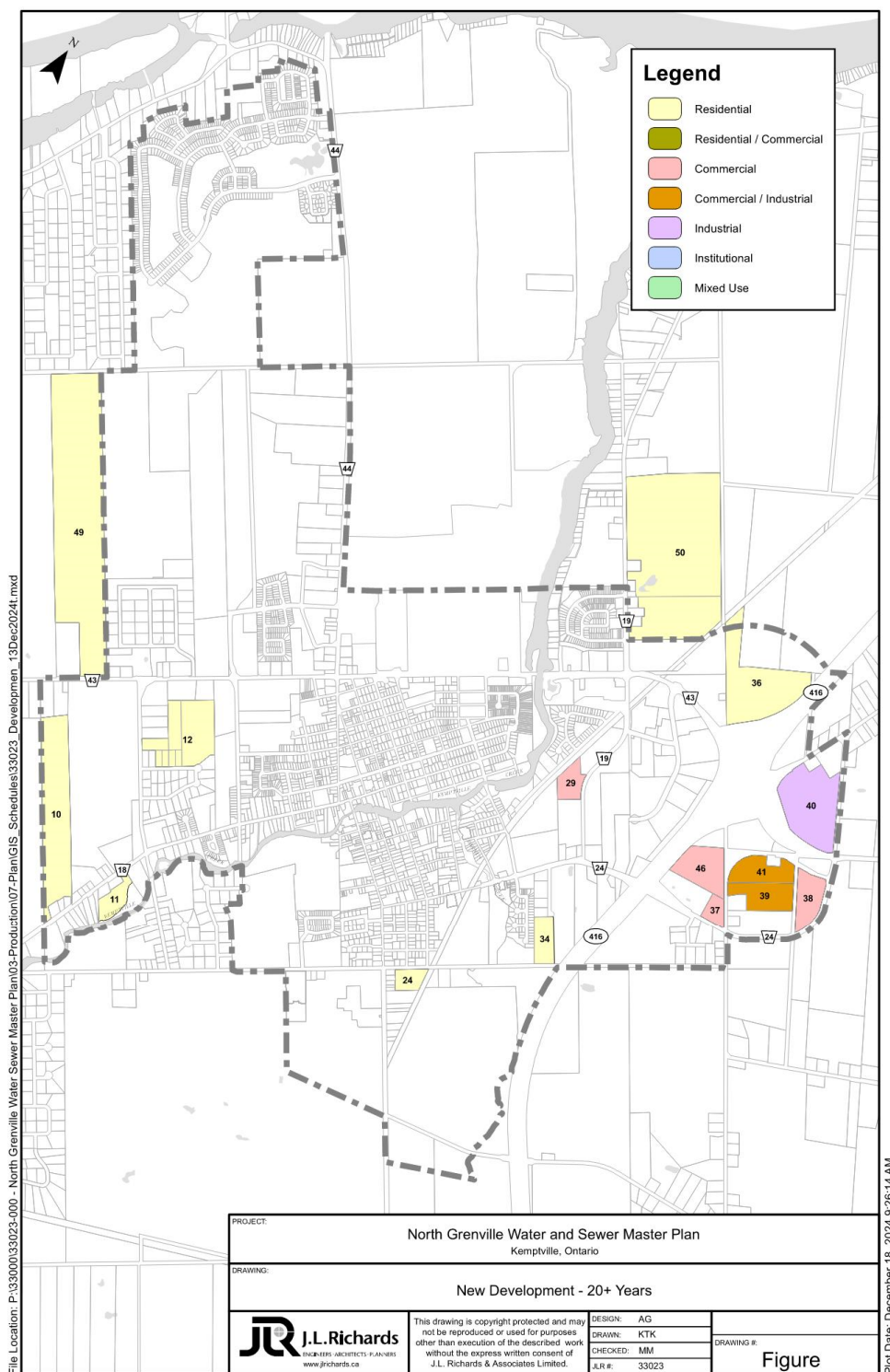


Figure 5: 20 Plus Years

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8.3 Candidate Expansion Areas

Based on information in the Long-term Population, Housing and Employment Study (December 2023) by KPMG, two main expansion candidate areas to the urban boundary were identified. These have been identified by the Municipality as the Western Expansion Area and the Northeast Expansion Lands. The KPMG report had provided an estimate on the capacity of each expansion area based on high density. The following projections were provided:

Western Expansion Area = 1823 potential residential units
Northeast Expansion Area = 1256 potential residential units

A third expansion area was identified by the Municipality as the Northern Expansion Lands. No projected unit count for this area was provided.

Western Expansion Area (MAP ID 49)

Correspondence from the Municipality directly from the planning consultant working on the Western Expansion Area candidate site has indicated that the rough estimate is approximately 1,941 units. While it is understood that this number could change, this number will be used for this analysis. To calculate the total projected population of the Western Expansion Area, the total units proposed is multiplied by the 2.35 persons per units.

$1,941 \times 2.35 = 4,561$ projected population

Northeast Expansion Area (MAP ID 50)

The Northeast Expansion Area boundaries identified by the Municipality differs slightly from the Northeast Expansion Area boundaries by the KPMG report. The area identified by the Municipality provided some additional lands not contemplated by the KPMG report. Therefore, these additional lands need to be added to the total projected units provided by KPMG for the Northeast Expansion Area. Using the high density rate of 45 units per hectare provided by KPMG, the total projected units for the additional lands can be calculated. The total potential residential lands for the additional lands can then be added to the total of potential residential units provided by the KPMG report. The Municipality has identified this expansion area for the 20 plus year interval.

$13.7 \text{ hectares} \times 45 \text{ units/ha} = 617$ potential residential units for the additional lands
 $617 \text{ potential residential units} + 1256 \text{ potential residential units} = 1873$ potential residential units

The Northeast Expansion Area projected population can be calculated using the projected number of dwelling units multiplied by 2.35 person per unit.

$1873 \times 2.35 = 4,402$ projected population (based on high density)

Northern Expansion Area (MAP ID 48)

The Municipality had also provided a third candidate expansion area identified as the Northern Expansion Area. The first phases are predicted to occur within the 5-10 year interval, while the second phases are

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predicted to occur during the 10-20 year interval. To calculate the projected population for the Northern Expansion Lands, the total size of the land holding is multiplied by the average units per hectare (34 units/hectare). The sum is then multiplied by the 2.35 persons per unit count to calculate the total population projection.

5-10 year interval (Phases)

Total ha: 1.3 ha
 $1.3 \times 34 = 44$ proposed units
 $44 \times 2.35 = 104$ projected population

10-20 year interval (Phases)

Total ha: 5.7 ha
 $5.7 \times 34 = 194$ proposed units
 $194 \times 2.35 = 456$ projected population

8.4 The Future Provincial Correctional Facility (MAP ID 51)

The future Provincial Correctional Facility was identified as being within the 0-5 year interval. The estimated population is 528 people. Information obtained by the Municipality has identified the following preliminary water servicing information:

- AVDY = 3.02
- MXDY = 6.44
- PKHR = 10.34

8.5 Employment Population Projections

The Municipality had provided information on land holdings within the Kemptville urban serviced area including land size and has assigned a predicted 1-5-, 5-10-, 10-20- and 20 plus year projection for each land holding identified as commercial or industrial.

Using this information, a projected employment land population for each land holding can be calculated using the size of the land holding multiplied by a density assumption for the employment lands. There has been no additional information provided with respect to existing densities for employment lands. Therefore, an assumed density of 45 employees/hectare for employment lands has been used. This is consistent with the density assumption made for other similar sized towns located within commuting distance of the City of Ottawa, such as the Municipality of Mississippi Mills.

For this analysis, all land holdings identified by the Municipality as commercial or industrial were considered for the projected employment population, including those that are not within the Economic Enterprise or Industrial designations within the Official Plan.

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Table 29: 0 - 5 Years

Number on Map	Land size (ha)	Projected Population (Lot Size x 45 employees per hectare)
7*	0.5	23
18	0.1	5
27	1.8	83
54	1.6	70
Total	4.0	180
Total Kemptville [population centre]	3.5	157
Total Other Urban Serviced Area	0.5	23

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

Table 30: 5 - 10 Years

Number on Map	Land Size (ha)	Projected Population (Lot Size x 45 employees per hectare)
7*	2.0	92
9*	2.6	115
31*	4.8	214
32*	7.9	354
33*	0.8	36
35*	14.6	659
45*	4.6	206
57*	1.8	79
Total	39.0	1755
Total Kemptville [population centre]	0	0
Total Other Urban Serviced Areas	39.0	1755

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

Table 31: 10 – 20 Years

Number on Map	Land Size (ha)	Projected Population (Lot Size x 45 employees per hectare)
28	0.2	8
34*	3.6	163
34*	6.8	306
43*	2.5	111
Total	13.1	588
Total Kemptville [population centre]	0.2	8
Total Other Urban Serviced Areas	12.9	581

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Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

Table 32: 20 Plus Years

Number on Map	Land Size (ha)	Projected Population (Lot Size x 45 employees per hectare)
29*	2.4	110
37*	1.6	70
38*	4.0	178
39*	4.7	210
40*	11.8	532
41*	4.3	194
46	5.5	249
Total	34.3	1543
Total Kemptville [population centre]	5.5	249
Total Other Urban Serviced Areas	28.8	1294

Table Notes:

* Denotes properties outside Kemptville [population centre] designated census area

8.6 Private Services

The following properties have been identified by the Municipality as being on private servicing for the foreseeable future given the complications of extending municipal servicing across Highway 416:

- Map ID 34
- Map ID 37
- Map ID 38
- Map ID 39
- Map ID 40
- Map ID 41
- Map ID 46

9.0 Conclusion

The projected populations have been identified for each land holding that was identified by the Municipality. Based on the total projected populations for each time interval, there is considerably more potential residential capacity than required to meet the predicted population growth when using an average unit per hectare density (plus 10% for ARUs) calculated using the numbers provided by KPMG in the Long-term Population, Housing and Employment Study (December 2023). A summary of the land holdings capacity versus the projected population growth can be found in the following Table.

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Table 33: Projected Population Growth and Total Projected Population Growth for Land Holdings

Year Interval	Projected Population Growth ⁽¹⁾			Total Projected Population Growth ⁽²⁾			
	Kemptonville [population centre]	Other urban serviced areas	TOTAL For all urban serviced areas	For all land holdings within Kemptonville [population centre]	For all land Holding in other urban serviced areas	TOTAL For all Land Holdings in urban serviced area	TOTAL For all Land Holdings in urban serviced area with Expansion Areas
0-5	343	1383 ⁽³⁾	1726	874	1964	3366 ⁽³⁾	3366 ⁽³⁾
5-10	456	1491	1946	790	1726	2516 ⁽⁴⁾	2620
10-20	1209	2857	4066	348	9611	9959 ⁽⁵⁾	10415
20 +	864	1436	2300	1034	2366	3400 ⁽⁶⁾	12363

Table Notes:

- (2) Calculated using information from Tables 19 to 21 (using information from the KPMG report).
- (3) Calculated using information from Tables 22 to 28.
- (4) Includes population projection for the correctional facility.
- (5) Total does not include Northern Expansion Area.
- (6) Total does not include Northern Expansion Area.
- (7) Total does not include Northeast Expansion Area or Western Expansion Area.

The total projected population for each interval is summarized in the Table below.

Table 34: Projected Population for Year Interval for Kemptonville Urban Serviced Area

Year Interval	Projected Population ⁽¹⁾	Projected Population using Land Holding Capacity ⁽²⁾	Projected Population using Land Holding Capacity ⁽²⁾ with Expansion Areas
Existing ⁽³⁾	6000	6000	6000
0-5	8254 ⁽⁴⁾	9366 ⁽⁴⁾	9366
5-10	10200	11882 ⁽⁵⁾	11986
10-20	14266	21945 ⁽⁶⁾	22401
20 +	16566	25345 ⁽⁷⁾	34764

Table Notes:

- (1) Calculated using information from Table 33 and KPMG's estimated existing population of 6000 for Kemptonville.
- (2) Calculated using information from Table 31 and KPMG's estimated existing population of 6000 for Kemptonville.
- (3) Estimated population for Kemptonville identified in the KPMG report with no land holding projections.
- (4) Includes population projection for the correctional facility.
- (5) Includes population projection for the correctional facility. Calculations do not include Northern Expansion Area.

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- (6) Includes population projection for the correctional facility. Calculations do not include Northern Expansion Area.
- (7) Includes population projection for the correctional facility. Calculations do not include Northeast Expansion Area or Western Expansion Area.

Table 34 provides two options of population projections. To inform the Master Servicing Plan Update, the Land Holding Capacity Population Projection is the recommended population projection to be used.

The following table summarizes the projected employee population for all commercial land holdings.

Table 35: Land Holdings and Total Projected Employment Population for Land Holdings

Year Interval	Land Size for all Land Holdings (ha)	Total Projected Employment Population for Land Holding Capacity ⁽¹⁾
0-5	4.0	181
5-10	39.0	1755
10-20	13.1	588
20 +	34.3	1543

Table Notes:

- (1) Calculated using information from Table 29 to Table 32.

There were two institutional land holdings identified by the Municipality, one for the 0-5 year interval, one for the 10-20 year interval.

Table 36: Institutional Land Holdings

Year Interval	Map ID	Land Size (ha)
0-5	16	3.9
10-20	5	4.3

There were two retirement/long term care residence land holdings identified by the Municipality for the 10-20 year interval.

Table 37: Retirement Residence Land Holdings

Year Interval	Map ID	Projected Beds	Land Size (ha)
10-20	13	150 beds	1.5
10-20	55	42 beds	1.3

Of the commercial properties identified by the Municipality, two were identified as having a potential hotel, one for the 5-10 year interval, one for the 10-20 year interval.

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Table 38: Commercial Properties with Hotels

Year Interval	Map ID	Projected Beds	Land Size (ha)
5-10	33	74 Beds	0.8
10-20	43	unknown	2.5

10.0 Special Notes

Institutional Lands: Lands that were identified as Institutional were not included in the population projection or employment projection calculations.

Residential Calculations: All lands that were identified by the municipality as residential or the potential for residential conversion were included in the residential population projection calculations. All housing typology and numbers for land holdings were provided by the Municipality.

Floodplain: Floodplain limits for any relevant properties were obtained from the most recent information available from the Rideau Valley Conservation Authority and excluded in the area calculations.

Per Person Per Unit: KPMG did not provide a per person per unit count for each housing typology. Therefore, the per person per unit count for each housing typology from the Municipality of North Grenville Engineering Standards for Design, Approval, and Construction, Section D, D2.05 for Domestic Demand was used with the KPMG information for required dwelling units to meet the KPMG projected populations.

11.0 References

The following documents were referenced in the creation of this report:

- Municipality of North Grenville Official Plan (2018)
- Municipality of North Grenville Long-term Population, Housing and Employment Study, dated December 13th, 2023, prepared by KPMG

12.0 Limitations

This report has been prepared by J.L. Richards & Associates Limited for the Municipality of North Grenville's exclusive use. Its discussions and conclusions are summary in nature and cannot properly be used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report is based on information, drawings, data, or reports provided by the named client, its agents, and certain other suppliers or third parties, as applicable, and relies upon the accuracy and completeness of such information. Any inaccuracy or omissions in information provided, or changes to applications, designs, or materials may have a significant impact on the accuracy, reliability, findings, or conclusions of this report.

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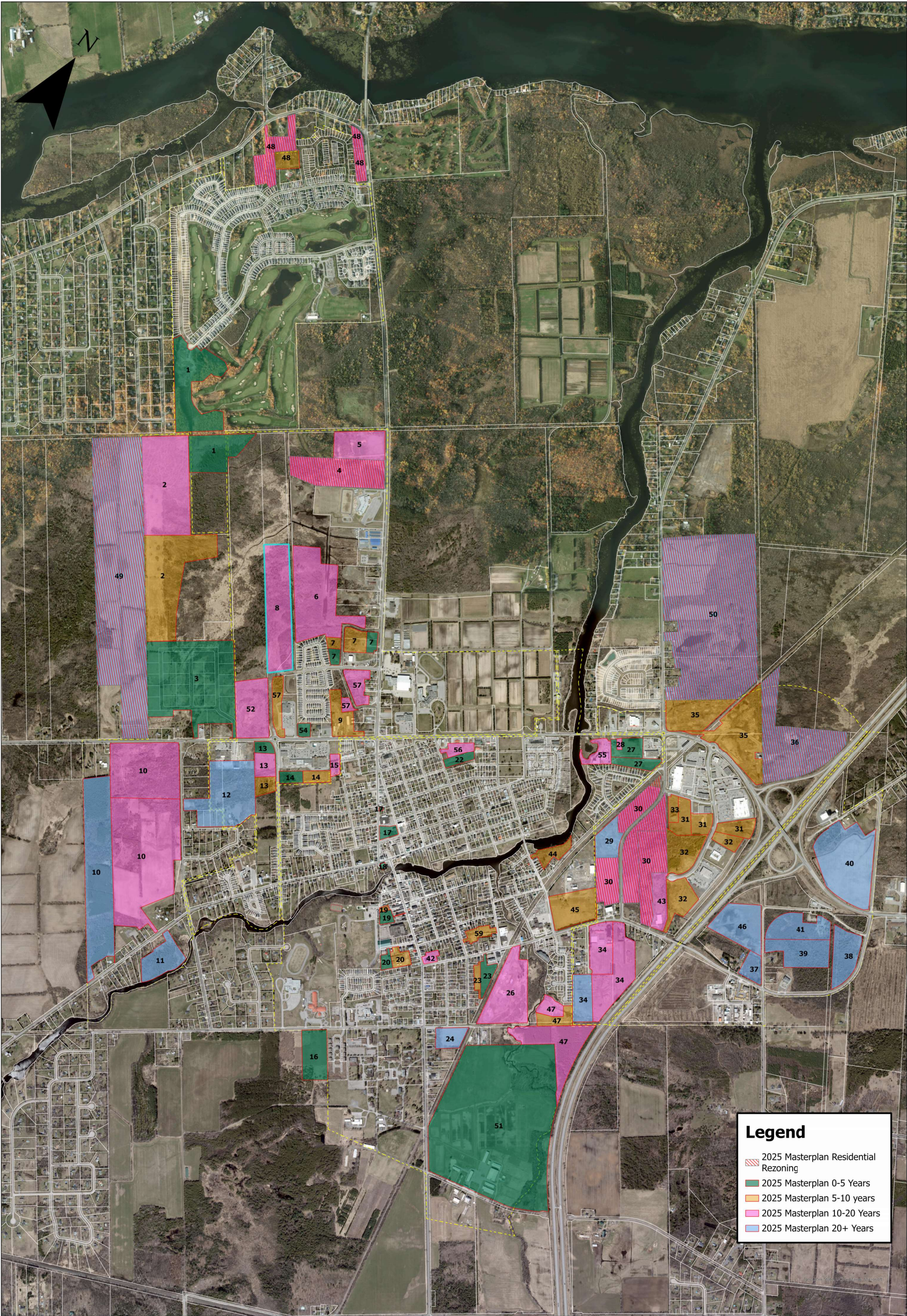
Existing and Future Population, Employment and Land Use Implications and Analysis

North Grenville Water and Wastewater Master Plan

Appendix A

Municipality of North Grenville
Servicing Masterplan

MNG SERVICING MASTERPLAN - PROJECTED DEVELOPMENTS

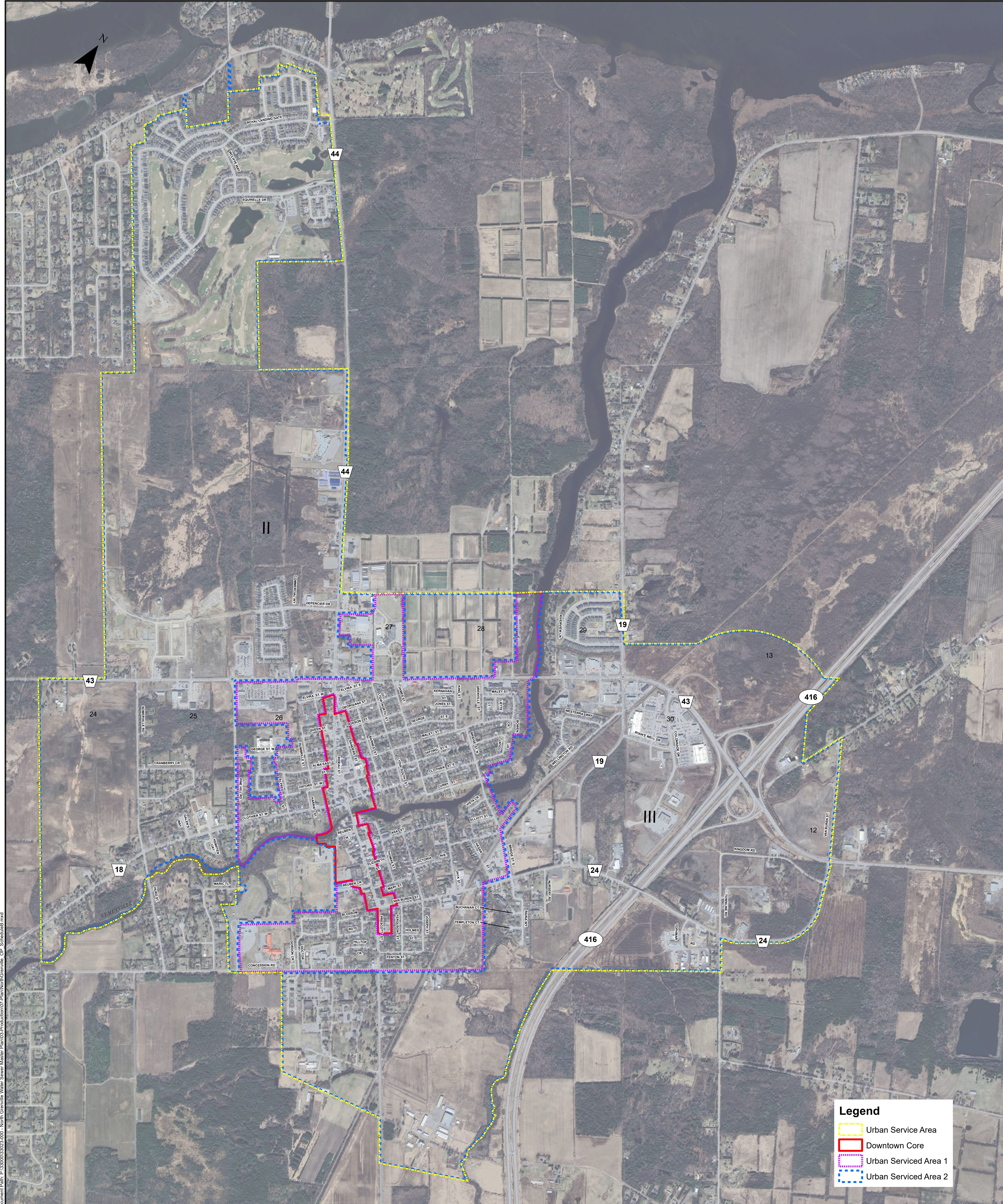


Existing and Future Population, Employment and Land Use Implications and Analysis

North Grenville Water and Wastewater Master Plan

Appendix B

Municipality of North Grenville
Urban Serviced Area Map



Legend

Urban Service Area

Downtown Core

Urban Served Area 1

Urban Served Area 2