



Managing Future Growth in Mount Uniacke

Final Report

Submitted by: Innovative Growth Solutions

Submitted to: The Municipality of East Hants

Completed in conjunction with Dalhousie University's School of Planning

April 13, 2023

Project Team & Acknowledgements



Innovative Growth Solutions (IGS) is a Nova Scotia based planning firm that specializes in growth management for municipal clients. At IGS, we are dedicated to helping our municipal clients build communities that are walkable and livable, and that strike an appropriate balance between fostering new development and the preservation of community character and natural environments. In advising our municipal clients, sustainability and economic viability are core principles we aspire to.

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Table of Contents

01 Executive Summary	26 Local Consultation
04 Project Overview	27 Community Character & Desires
05 Provincial Growth Context	28 Development Trends & Needs
05 Local Growth Context	29 Policy Challenges & Opportunities
06 Goal & Objectives	30 Policy & Document Review
07 Approach & Methods	31 Intended Growth Patterns
08 Demographic Profile	33 Limits to Growth in Unserviced Areas
09 Population & Demographics	34 Infrastructure: Limits & Opportunities
11 Households & Dwellings	36 Jurisdictional Scan
12 Implications for future growth policy	37 Overview: Cluster Septic Systems
13 Spatial Analyses	39 Managing Cluster Septic Systems
14 Transportation Network Analysis	40 Enabling Cluster Septic Systems
17 Growth Management Area Analysis	41 Nova Scotia's On-Site Wastewater Regulations
18 Mount Uniacke GMA Land Use Analysis	42 Regulatory Frameworks
20 Growth Analysis	44 Site Level Analysis
21 Recent Development Patterns	46 Wastewater Management Districts in Nova Scotia
22 Population Growth Scenarios	48 Discussion
23 Land Use Capacity	

49 Enabling and Encouraging Cluster Septic Systems	55 Conclusion
50 Municipal Ownership & Management	57 References & Appendices
51 Expanding the Study	58 References
52 Recommendations	61 Appendix A: Interview Questions
54 Conclusion	62 Appendix B: Septic Field Lot Size Requirements
55 Project Limitations	63 Appendix C: Project Fact Sheet

List of Figures

05 Figure 1: Growth in Nova Scotia and the HRM, 2016 - 2021
06 Figure 2: Map depicting the Mount Uniacke GMA within the regional context
07 Figure 3: Mixed-methods approach explained graphically
09 Figure 4: East Hants Census Aggregate Dissemination Areas
10 Figure 5: Population by mobility status 2016 - 2021, Uniacke/Rawdon ADA
11 Figure 6: Population counts by birthyear cohort in Uniacke/Rawdon ADA
14 Figure 7: Map depicting Nova Scotia's highway networks and population density levels as they relate to East Hants' Growth Management Areas
15 Figure 8: Map depicting traffic volume along highway corridors as they enter East Hants
16 Figure 9: Map depicting various driving distances to the Mount Uniacke GMA
19 Figure 10: Map depicting the percentage of land coverage of different zones in the Mount Uniacke GMA
21 Figure 11: Map depicting active (e.g., being built) and approved subdivisions in the Mount Uniacke GMA

- 22 | Figure 12: Graph depicting population growth scenarios for the Mount Uniacke GMA between 2021 and 2051
- 23 | Figure 13: Map depicting undeveloped residential zoned land in the Mount Uniacke GMA
- 25 | Figure 14: Available residential land under a normal scenario
- 25 | Figure 15: Available residential land under a strong scenario
- 32 | Figure 16: Map depicting East Hants' Growth Management Areas and Growth Reserve Areas
- 37 | Figure 17: Basic cluster septic system connection model
- 38 | Figure 18: Site plan highlighting the level of density that can be achieved through private on-site servicing
- 38 | Figure 19: Site plan highlighting the level of density that can be achieved through cluster septic system servicing
- 45 | Figure 20: 2022 subdivision plan for a 57 acre parcel on East Uniacke Road in Mount Uniacke
- 46 | Figure 21: 2022 subdivision plan re-imagined through cluster septic system servicing model

List of Tables

- 10 | Table 1: Uniacke/Rawdon ADA growth rate compared to the entire Municipality
- 11 | Table 2: Private household data for the Uniacke/Rawdon ADA
- 12 | Table 3: Occupancy of private dwellings for the Uniacke/Rawdon ADA
- 18 | Table 4: Estimated populations and density levels for all four Growth Management Areas
- 21 | Table 5: Lots created by subdivision, 2016 - 2023
- 22 | Table 6: Development permit data 2016 - 2023, Mount Uniacke GMA and Region

- 24 | Table 7: Total number of single detached units that can be integrated into the Mount Uniacke GMA under different population growth scenarios
- 33 | Table 8: Minimum lot size requirements for prominent zones in the Mount Uniacke GMA
- 43 | Table 9: Estimated minimum lot sizes for apartment buildings serviced by a cluster septic system in Nova Scotia

Glossary

Bare land condo - refers to individual ownership of a parcel of land that falls within a larger parcel owned and operated by a condominium corporation (Highlander Law Group, 2019).

CDD - Comprehensive Development District

'Cluster septic system' or **'cluster system'** - refers to septic systems that service multiple buildings, structures, or dwellings on land that is not serviced by central municipal water or wastewater infrastructure.

GMA - Growth Management Area

'The GMA' - The Mount Uniacke Growth Management Area

'The HRM' - The Halifax Regional Municipality

IGS - Innovative Growth Solutions

LUB - East Hants' Land Use Bylaw

MPS - East Hants' Municipal Planning Strategy

Unserviced - refers to lands and properties that are not connected to central municipal water and wastewater systems.

Executive Summary

Executive Summary

In January 2023, the Municipality of East Hants contracted Innovative Growth Solutions to complete a project whose goal was to provide recommendations for how future growth in Mount Uniacke could be best managed. The Municipality envisioned that the recommendations made through this project could serve to guide the eventual development of a secondary planning strategy for Mount Uniacke. In line with the Municipality as a whole, Mount Uniacke – a rural community located a 30-minute drive northwest from downtown Halifax – has been experiencing population growth and subsequent development pressure in recent years. While designated as one of four Growth Management Areas (GMAs) in East Hants, Mount Uniacke is unique in that it is the only GMA not connected to central municipal water and wastewater services. This lack of servicing, coupled with the growth and development pressure being experienced in Mount Uniacke, is what led the Municipality to commission a project exploring new ways to manage growth.

This project's goal was met through the completion of the three objectives, which were to:

- » Identify drivers and barriers to growth in Mount Uniacke;
- » Identify land use arrangements and associated policies that similarly situated municipalities have utilized to manage growth in unserved areas;
- » Assess the suitability of new and existing policies and strategies for managing growth in Mount Uniacke.

A mixed-methods approach was utilized to complete these objectives. Quantitative approaches included demographic analysis, spatial analyses, and growth analysis, while qualitative approaches included semi-structured interviews, a policy and document review, and a jurisdictional scan. The findings made through this project demonstrated that (a) Mount Uniacke can expect continued growth, and (b) alternative development patterns are needed. Specifically, Mount Uniacke was found to be in need of development patterns that support higher levels of density, increasingly diverse housing types, and greater opportunities for commercial, recreational, and institutional uses.

Mount Uniacke's housing stock was identified as having little diversity, being dominated by single detached dwellings. This lack of diversity was found to pose challenges for seniors looking to downsize and age-in-place within their communities, as well as for the now greater number of one- and two-person households living in the area. Several locational factors (e.g., proximity to the HRM) were identified as contributive to Mount Uniacke's recent emergence as an attractive location for new growth and development. However, challenges to achieving growth patterns that would support Mount Uniacke's increasingly diverse needs were also identified, including that (a) current zoning regulations in the GMA largely support low-density residential uses and limit mixed-uses, (b) there are limited services and amenities in the GMA to support long-term growth, and (c) recent development patterns continue to add single-detached dwellings on large lots into the GMA's housing stock. A further review of recent (2021 – 2023) subdivision application data found that residential development patterns are occurring inefficiently in the GMA.

In semi-structured interviews, two Mount Uniacke Councillors and five municipal planning staff members were in unanimous agreement that current growth patterns – largely a result of limiting policy frameworks – were inconducive to meeting local needs. A review of current growth policy frameworks and zoning regulations for the GMA confirmed the insufficiency of policy to foster needed development patterns, in large part due to the constraints of the GMA being entirely unserved.

To identify how Mount Uniacke could achieve the development patterns identified as needed, a jurisdictional scan was conducted. Here, the use of cluster septic systems was identified as an alternative servicing model that allows for denser and more diverse development patterns. Residential dwellings and other structures serviced by cluster septic systems no longer require the large minimum lot sizes they would need to account for having a private on-site system, therefore allowing for denser development patterns and smaller dwellings - both of which are needed in Mount Uniacke. A review of Nova Scotia's on-site wastewater regulatory frameworks found that while limited, avenues to utilizing cluster septic systems for the purpose of fostering density and smaller dwelling types in rural Nova Scotia are available.

In consideration of these findings, three recommendations were provided. These were to:

- » Enable and encourage the use of cluster septic systems in a secondary planning strategy for Mount Uniacke;
- » Expand the growth management study to (a) understand municipal capacity to own/manage cluster systems, and (b) better understand land and soil conditions in Mount Uniacke;
- » Explore Provincial interest in a collaborative pilot project wherein the Municipality owns and manages a cluster system through a Wastewater Management District by-law for the purpose of fostering non-traditional development patterns in an unserved area.

Project Overview

- 5 Provincial Growth Context
- 5 Local Growth Context
- 6 Goal & Objectives
- 7 Approach & Methods

Project Overview

Provincial Growth Context

Between the 2016 and 2021 censuses, Nova Scotia grew by 5% – the highest rate seen in the Province since the early 1970s (Statistics Canada, 2022b). Growth continued in 2022, with the Province’s population estimated to have grown by 2.89%, passing the one million mark to a total of 1,019,725 residents (Storring, 2023). High growth rates in Nova Scotia have been attributed to increases in international immigration and interprovincial migration to the Maritime provinces (Statistics Canada, 2022b). Population growth has been both encouraged and prioritized by the Government of Nova Scotia – who set the long-term goal of reaching a population of two million by 2060.

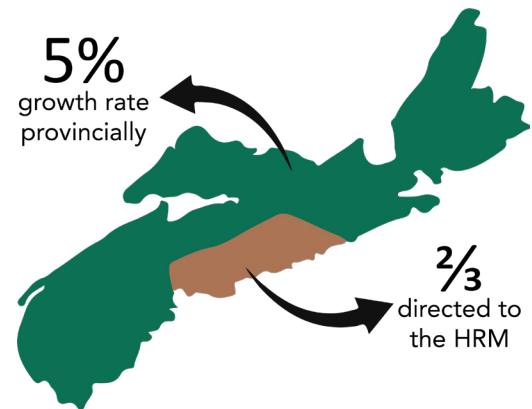


Figure 1: Growth in Nova Scotia and the HRM, 2016 - 2021

After decades of stagnation, this growth can be expected to increase development pressure throughout Nova Scotia. Moreover, new challenges related to housing, infrastructure, and service delivery can also be anticipated (Statistics Canada, 2022b). It is estimated that over two-thirds of this growth has been directed to the Halifax Regional Municipality (HRM) to date. Such growth in the HRM will likely contribute to development pressure on neighbouring regions such as East Hants, particularly in areas near the municipal boundary like Mount Uniacke.

Local Growth Context

East Hants is a centrally located municipality in Nova Scotia that to its south borders Atlantic Canada’s leading economic and population centre, the HRM. East Hants has experienced significant development growth in recent years, primarily focused along the ‘South Corridor’ which extends along Highway 102 and includes the communities of Enfield, Elmsdale, and Lantz. The South Corridor is one of four areas that have been designated as Growth Management Areas (GMAs), along with Milford, Shubenacadie, and Mount Uniacke (East Hants, 2016d). The Mount Uniacke GMA (see Figure 2 on the following page) is unique in that it is the only GMA not connected to municipal water or wastewater infrastructure, and that it is currently intended to act as both a Growth Management Area and Growth Reserve Area simultaneously (East Hants, 2016d).

According to East Hants’ (2016d) Municipal Planning Strategy, GMAs intend to minimize or prevent urban sprawl by designating specific areas where compact, sustainable, and economically viable growth can occur. To ensure that future growth in Mount Uniacke occurs efficiently, sustainably, and in a way that will actualize a desired character for the community, the Municipality of East Hants requested the completion of a project that provides recommendations for managing growth in Mount Uniacke. The Municipality hopes this project will determine if current growth management policy is sufficient for guiding future growth in Mount Uniacke, or if newer and/or more innovative land use arrangements and policies should be consid-

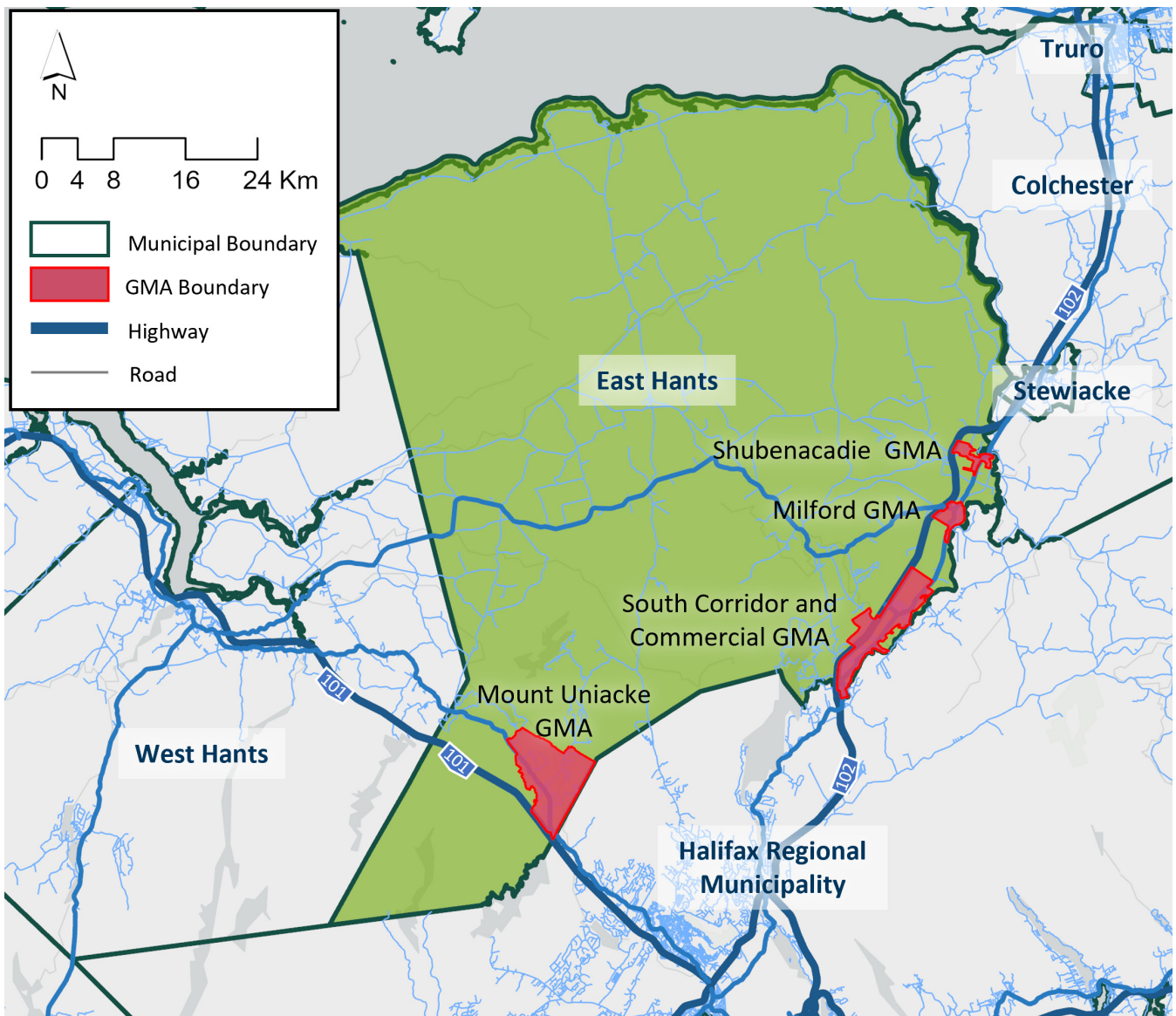


Figure 2: Map depicting the Mount Uniacke GMA within the regional context

ered for implementation. It was envisioned that the findings and recommendations made through this project will serve to guide the eventual development of a secondary planning strategy for Mount Uniacke.

Goal & Objectives

The goal of this project was to provide the Municipality of East Hants with a series of recommendations for how future growth in Mount Uniacke can be managed. This goal was met through the completion of the objectives listed below:

- » Identify drivers and barriers to growth in Mount Uniacke;
- » Identify land use arrangements and associated policies that similarly situated municipalities have utilized to manage growth in unserved areas;
- » Assess the suitability of new and existing policies and strategies for managing growth in Mount Uniacke.

Approach & Methods

A mixed-methods approach was used to meet these objectives and inform the development of recommendations. While the approach and methods utilized are highlighted in Figure 3 below, detailed explanations of each method are provided in the corresponding report (sub)sections. Quantitative methods were used to develop a thorough understanding of the local growth context, while qualitative methods were used to assess the suitability of new and existing policies to manage growth in Mount Uniacke. The findings made through this mixed-methods approach were then analyzed and synthesized, resulting in a series of recommendations.



Figure 3: Mixed-methods approach explained graphically

Demographic Profile

- 9 Population & Demographics
- 11 Households & Dwellings
- 12 Implications for Future Growth Policy

Demographic Profile

To better understand the growth and development that has occurred since 2016, a demographic analysis of the study area was conducted. Demographic change provides insight into how shifting demographic features can be reflective of changing local needs in housing, amenities, transportation, and infrastructure – all of which are essential to the formulation of growth management policies. The following analysis is presented in the form of a demographic profile of the Uniacke/Rawdon ‘Aggregated Dissemination Area’ (ADA), focused mainly on changes in population, household status, and dwelling types. The findings made through this demographic analysis aim to guide this project’s recommendations for growth management in Mount Uniacke. It should be noted that the Uniacke/Rawdon ADA boundary does not correspond directly with the Mount Uniacke GMA boundary. Nonetheless, the Census data for the Uniacke/Rawdon ADA contains demographic data relevant to the Mount Uniacke GMA unavailable through other means.

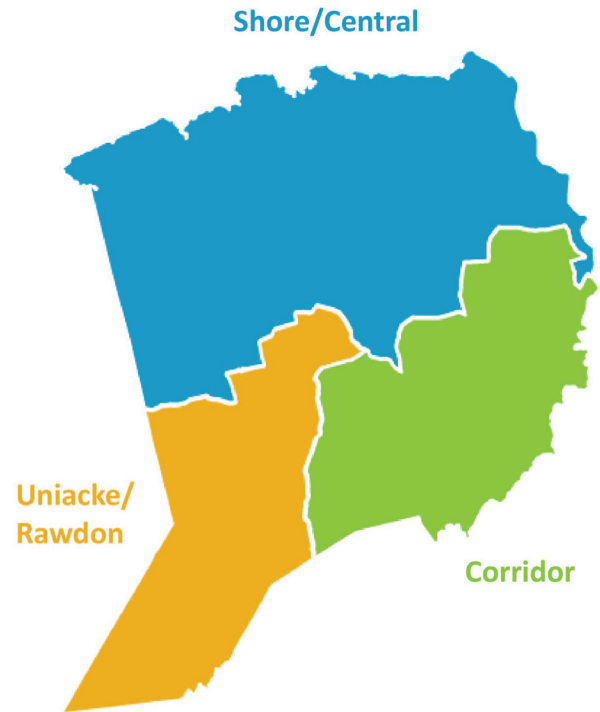


Figure 4: East Hants Census Aggregate Dissemination Areas

This demographic profile was developed using 2021 Census data, as well as the *2016 Socio-Economic Study* that East Hants published for the 2016 Census year (East Hants, 2018). In its *2016 Socio-Economic Study*, East Hants analyzed demographics using data from three Census ‘Aggregate Dissemination Areas’ (ADAs): Corridor, Shore/Central, and Uniacke/Rawdon (see Figure 2) (East Hants, 2018). To identify notable demographic changes, 2021 Census ADA data (Statistics Canada, 2023) was compared to data used in East Hants’ *2016 Socio-Economic Study*.

Population & Demographics

In 2021, the Uniacke/Rawdon ADA had 4,948 residents, accounting for 21.6% of East Hants’ total population (22,892). Between 2016 and 2021, the Uniacke/Rawdon ADA led all ADAs with a growth rate of 5.05% – more than double the municipal average of 1.96%. Of the 439 people who moved into East Hants between 2016 and 2021, over half (238), settled in the Uniacke/Rawdon ADA. As a result, the ADA saw higher rates of occupied dwellings in 2021, as well as higher rates of newly constructed dwellings. Further, population density saw a slight increase, from 11.3 to 12 persons per square kilometre from 2016 to 2021.

The growth in population that occurred in the Uniacke/Rawdon ADA can be attributed to both natural growth

and net in-migration, as the area saw significant population movement between 2016 and 2021. Migrants who moved into the ADA between 2016 and 2021 accounted for 22.06% of the population in 2021 – an increase from 17.43% between 2011 and 2016. Of the 1,040 in-migrants to the ADA for 2021, 810 came from within Nova Scotia, while an additional 200 came from other Canadian provinces (see Figure 5 below). Despite this high level of in-migration, the ADA’s population only rose by 5.05%, meaning there was also significant out-migration.

Area	2016 Population	2021 Population	Growth Rate (2016 - 2021)
East Hants	22,453	22,892	1.96%
Uniacke/ Rawdon ADA	4,710 (20.9% of population)	4,948 (21.6% of population)	5.05%

Table 1: Uniacke/Rawdon ADA growth rate compared to the entire Municipality

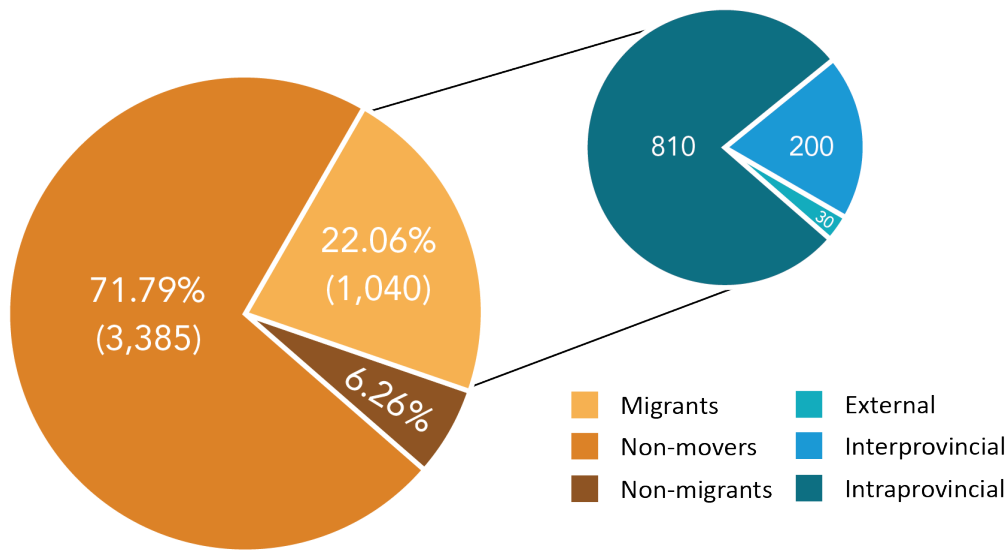


Figure 5: population by mobility status 2016 - 2021, Uniacke/Rawdon ADA

A comparison between 2016 and 2021 population counts by birthyear cohort in the Uniacke/Rawdon ADA provides further insight into the in- and out-migration that has occurred. As Figure 6 on the following page shows, net population gains were particularly strong in the 1987 – 1991 birthyear cohort, with the 1992 – 1996 and 1982 – 1986 birthyear cohorts also showing moderate gains. This indicates that through both natural growth and in-migration, the ADA has seen an increase in young adults of working age between the ages of 25 and 39. By contrast, net population losses between 2016 and 2021 occurred primarily in birthyear cohorts before 1961. Over half of the population decrease seen in senior age cohorts occurred in those younger than the average life expectancy in Nova Scotia (80.6) (Storring, 2022). This suggests that many seniors are leaving the ADA in their retirement years.

The lack of overall gain in population despite significant in-migration is particularly notable when looking at the 2017 – 2021 birthyear cohort. If the Uniacke/Rawdon ADA saw a net population increase of 238 people – 220 of which were aged between 0 – 5 years old – this would support the notion that many younger people growing up in the ADA are leaving once they transition to work or postsecondary education. Were more young people staying in the Uniacke/Rawdon ADA, there would likely not be decreases in the 1997 – 2001 and 2002 – 2006 (ages 15 – 24) birthyear cohorts, while the gains seen in the ages 25 – 39 cohort would likely be even higher.

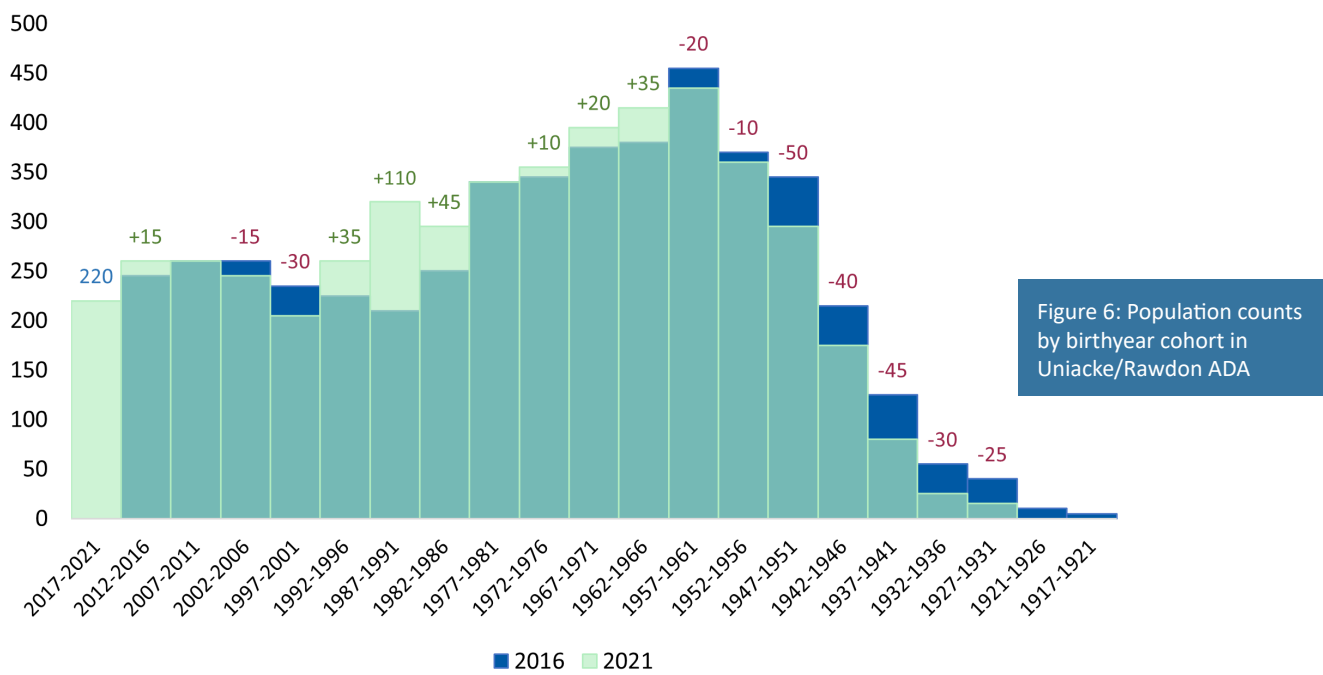


Figure 6: Population counts by birthyear cohort in Uniacke/Rawdon ADA

Households & Dwellings

As of 2021, there were 2,065 total private households in the Uniacke/Rawdon ADA – meaning 150 new private households were formed since 2016 (see Table 2). This increase in total private households corresponds to increasing households with two or less people since 2011. Of these 2,065 private households, 1,610 are census families. Statistics Canada defines census families as households consisting of couples or one parent with or without children, while non-census families are defined as households consisting of people who live alone, with other family members, or share their residence with non-relative others (Statistics Canada, 2021b). As Table 2 shows, the prevalence of non-census families has increased significantly between 2016 and 2021.

In 2021, single-detached homes accounted for 87% of total occupied dwellings in the Uniacke/Rawdon ADA, which aligns with traditional development patterns in rural Nova Scotia. The next most prevalent housing type was movable dwellings at 11%, while semi-detached homes, rowhouses, and apartments together accounted for 2% of dwellings in the ADA. Despite the population growing by 238 people between 2016 and 2021, the ADA saw only 40 new private dwellings added to its housing stock (see Table 3 on the following page). By contrast, the number of unoccupied dwellings decreased by 122, indicating that in-migrants to

Year	Total private households	Households with 2 or less people	Census families	Non-Census families	% of private households as non-census families
2011	1,855	1,140	1,505	350	18.87%
2016	1,915	1,250	1,570	345	18.02%
2021	2,065	1,360	1,610	455	22.03%

Table 2: Private household data for the Uniacke/Rawdon ADA

the ADA were primarily moving into existing housing stock. Finally, it should be noted that between 2016 and 2021, an additional 155 single-detached homes were recorded as occupied in the ADA – a trend likely attributable to single-detached homes being the dominant housing type within the ADA’s stock.

	2016	2021
Total private dwellings	2,237	2,277
Dwellings occupied by usual residents	1,941	2,063
Unoccupied dwellings/secondary residences	296	214

Table 3: Occupancy of private dwellings for the Uniacke/Rawdon ADA

Implications for Future Growth Policy

Changes in population mobility and household size between 2016 and 2021 have many possible implications for the development of future growth policy in the Mount Uniacke GMA. Most importantly, the lack of diverse housing options may pose challenges. While no conclusions can be made as to what the housing preferences of in-migrants are, it is clear that single-detached homes saw higher levels of occupancy because they dominated the ADA’s housing stock. Additionally, this lack of diversity in housing options could help explain the out-migration of seniors, as they have few (if any) options to downsize and age-in-place within the community. The lack of diversity in housing options is also significant in the context of shrinking household sizes.

The shift in household dynamics towards greater numbers of one and two person households suggests there is a greater need to consider smaller and alternative dwelling types (e.g., semi-detached houses, rowhouses, apartments) and forms of tenure (e.g., more rental units) to support this population’s integration into the GMA. The development of smaller and denser dwellings would provide greater opportunities for smaller households to choose the dwelling type most suitable to their needs, instead of being directed towards single-detached homes exclusively.

Finally, the high levels of both in and out-migration recorded between 2016 and 2021 in the Uniacke/Rawdon ADA raise the broader question of whether population increases can be held in the long term. While greater housing options and enhanced servicing alone cannot prevent out-migration (particularly among young adults leaving for postsecondary education), developing growth policy that emphasizes housing diversity and enhanced servicing can help to better support population retention.

Spatial Analyses

- 14 Transportation Network Analysis
- 17 Growth Management Areas Analysis
- 18 Mount Uniacke GMA Land Use Analysis

Spatial Analyses

Transportation Network Analysis

To begin identifying the spatial factors that could serve as drivers and/or barriers to future growth in the Mount Uniacke GMA, a transportation network analysis was conducted. Being that transportation connections are an essential factor that impact any area's potential for future development and economic activity (Rodrigue, 2020), this analysis sought to identify how the Mount Uniacke GMA was connected to the rest of East Hants and other neighbouring municipalities.

In East Hants, there are two major highway corridors that have had a marked impact on where development has occurred and is planned to occur: Highway 101 to the west and Highway 102 to the east. Figure 7 below depicts both Nova Scotia's highway networks and population density levels (East Hants, 2016a; Nova Scotia, 2023a, 2023c; Statistics Canada, 2021a), highlighting the importance of these two highway corridors to growth and development in East Hants. First, it is important to note that both highway corridors

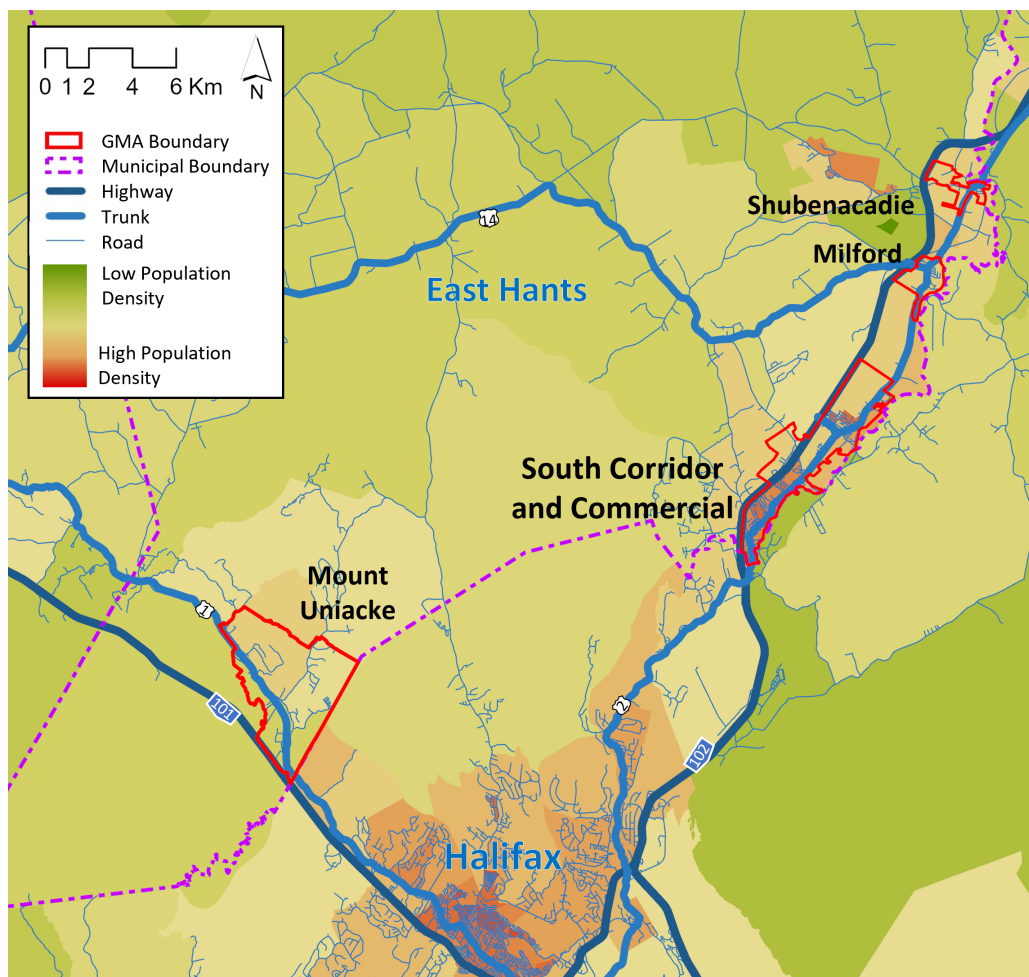


Figure 7: Map depicting Nova Scotia's highway networks and population density levels as they relate to East Hants' Growth Management Areas

are connected to the HRM – the economic and population centre of Nova Scotia. As Figure 7 shows, the dissemination areas closest to where both highway corridors enter the Municipality are the most densely populated in East Hants. In recognition of these densely populated areas and their proximity to major provincial highways, East Hants has designated all four of its Growth Management Areas (GMAs) in these areas. As Figure 7 shows, three GMAs are located along the Highway 102 corridor to the east, while the Mount Uniacke GMA is the sole GMA along Highway 101 to the west.

Using Annual Average Daily Traffic data, Figure 8 below shows that both highway corridors have higher traffic volumes in the HRM than in East Hants, with the western corridor having a slightly higher overall traffic volume than the eastern corridor (East Hants, 2016a; Nova Scotia, 2022a, 2023a, 2023a). There being more traffic volume in the HRM is unsurprising, as there are significantly more services, amenities, and employment opportunities when compared to Mount Uniacke. One possible explanation for the western corridor having slightly more traffic volume than the eastern corridor is that residents do not have to travel outside of the Municipality for goods and services as frequently in the eastern corridor. Another possible

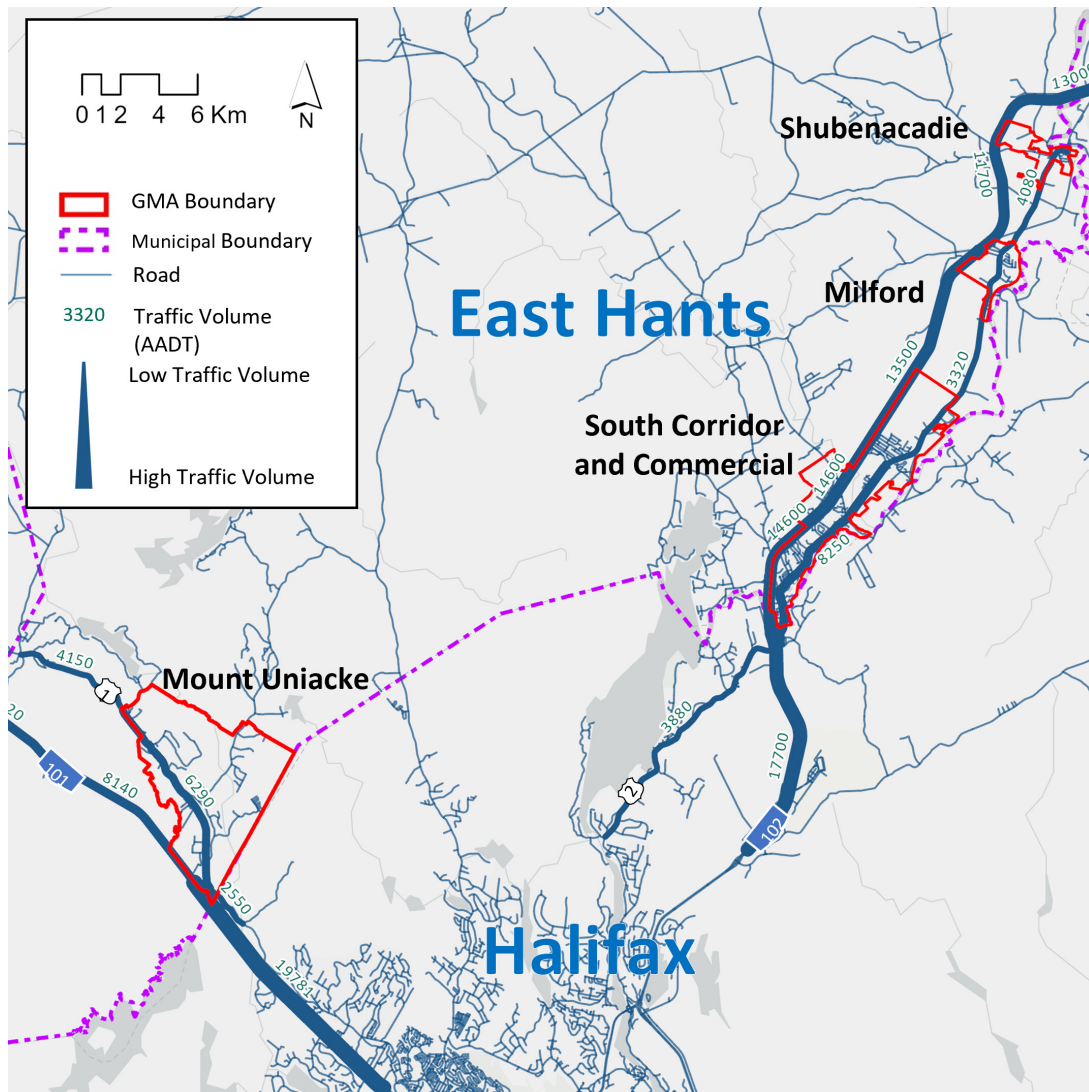


Figure 8: Map depicting traffic volume along highway corridors as they enter East Hants

reason is that Mount Uniacke serves as a transportation node connecting East Hants' northwestern rural lands to the HRM. Together, the GMA's proximity to the HRM, current lack of services, and its status as a transportation node make it well-positioned for future growth to occur. However, growth in commercial, recreational, and institutional uses will be needed to properly meet the needs of a growing community.

GMA's, despite being designated for future growth and the most densely populated areas of East Hants, are not strongly connected. The three GMA's along Highway 102 are spatially separated from Mount Uniacke, with no highways or trunks connecting them. The Mount Uniacke GMA is, however, well-connected with the HRM (particularly Sackville) and Windsor. Generated using the network analysis tool in ArcGIS Pro, Figure 9 below displays various driving distances to the Mount Uniacke GMA (East Hants, 2016a; Nova Scotia, 2023a, 2023c). Whereas the Mount Uniacke GMA can be reached from Sackville, Bedford, and Burnside in the HRM and Windsor in the West Hants Regional Municipality within a 30km (20 minute) driving distance, the closest and largest GMA in East Hants is a 50km (40 minute) driving distance away. Being that the Mount Uniacke GMA can only offer limited services to its residents at present (e.g., lack of a grocery store, recreation center, and clinics), residents will often have to travel outside of the GMA for goods and

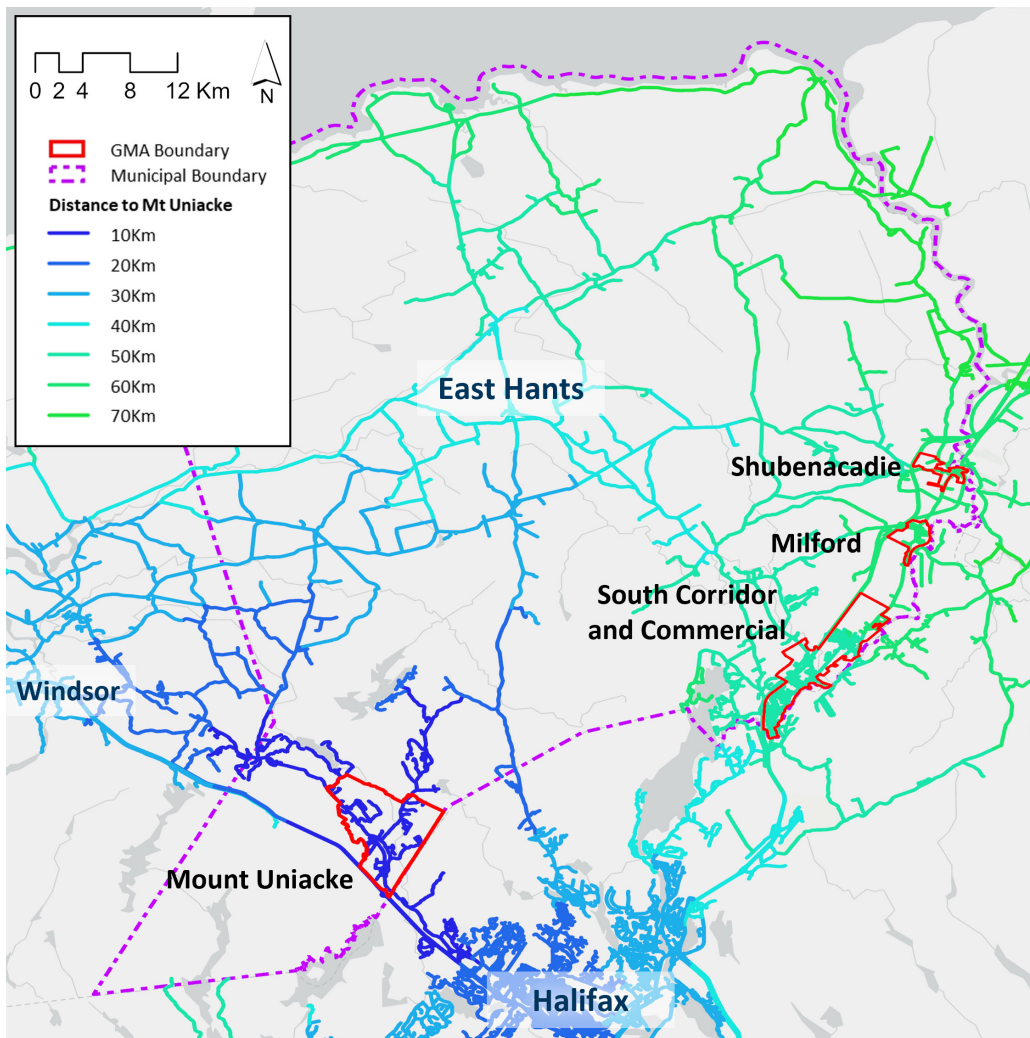


Figure 9: Map depicting various driving distances to the Mount Uniacke Growth Management Area

services. The long distance between the Mount Uniacke GMA and the three GMAs along Highway 102 make it unlikely that residents living in the GMA will access goods and services within East Hants, instead turning to neighbouring communities like Sackville who can offer amenities to meet daily needs. While short-term population growth in the Mount Uniacke GMA can continue to be facilitated by the services offered in nearby communities, the GMA will likely need to introduce more mixed-use and commercial land uses in the long-term. Further, as growth continues, new social and cultural facilities may be needed in the Mount Uniacke GMA to meet the needs of a growing population.

The lack of connectivity between the Mount Uniacke GMA and the three GMAs located along Highway 102 also has implications for the extension of infrastructure networks. As water and wastewater pipeline networks are typically constructed alongside road networks, the lack of road networks between the currently unserved Mount Uniacke GMA and the served GMAs along Highway 102 (all three are connected to municipal wastewater system) presents challenges (both physical and economical) to extending existing municipal infrastructure into the Mount Uniacke GMA. As such, any water and wastewater infrastructure used to service growth in the Mount Uniacke GMA in the short-term will need to be developed independently from the central systems located in the three GMAs along Highway 102. If higher growth trends are expected to continue in the Mount Uniacke GMA, the Municipality will need to consider using independent infrastructure systems (e.g., on-site servicing) that can support this growth efficiently.

Growth Management Areas Analysis

To understand the degree to which East Hants' growth management policy has directed growth to the four GMAs, as well as to gain further insight into Municipality's population and growth patterns, an analysis of the four GMAs was conducted. Statistics Canada provides population values for communities within each census subdivision but does not provide population values by municipal GMA boundaries. To address this limitation, approximate values were derived by combining population counts from the 2021 Census dissemination block areas and residential civic addresses within each GMA boundary (Nova Scotia, 2023b; Statistics Canada, 2021a). Although this model may be impacted by other factors such as the prevalence of seasonal dwellings and household size, the estimated values of the model provide helpful information to evaluate the four GMAs with.

To derive these estimated populations for the four GMAs, the ArcGIS platform was utilized. First, civic address data was collected and cleaned for analysis. This involved removing the addresses of vacant lots, street names, and other non-residential addresses. The remaining civic addresses were considered households for analysis. The second step was to calculate the size of different households. The 2021 Census dissemination data provided the population of each dissemination block area, allowing for average household size estimates to be developed within the dissemination area. This value was then divided by the number of households (civic addresses) to obtain the household size. The final step was to calculate the population of all four GMAs by using the number and size of households (civic addresses).

Results from this model indicated that in East Hants, the four GMAs accommodate over 39.5% of the population on only 4.5% of the Municipality's land. This suggests that growth management policy has generally

	Mount Uniacke GMA	South Corridor/ Commercial GMA	Shubenacadie GMA	Milford GMA	Not in GMA
Population	2,212	7,497	542	742	17,528
% of population	7.8%	26.3%	1.9%	2.6%	61.5%
Area (sq km)	24.1	17.9	2.4	2.9	1,813.6
Density (pop. per sq km)	91	417	230	255	10
Servicing	None	Water/wastewater	Water/wastewater	Wastewater	None

Table 4: Estimated populations and density levels for all four GMAs

been effective in limiting population growth within the four GMA’s boundaries – particularly in the ‘South Corridor and Commercial’ GMA where population density is highest (see Table 4 above). It should, however, be noted that the Mount Uniacke GMA remains rural in nature, with a population density of 91 people per sq km. As per Statistics Canada, population centres must have at least a population of 1,000 and a population density of 400 sq km to be considered ‘urban’ (Statistics Canada, 2022a). Under this classification, the three GMAs located along Highway 102 are more urban in nature than the Mount Uniacke GMA, likely due to the Mount Uniacke GMA being unserviced. Despite being unserviced, Mount Uniacke has the second highest estimated population of the four GMAs and has plenty of developable land, making it an important settlement along East Hants’s western corridor.

Mount Uniacke GMA Land Use Analysis

Zoning regulations and existing land use patterns are crucial components in determining the level of growth that any area can facilitate. Residential use zoning dictates the types of residential forms and density levels that can be achieved, while other types of zoning ensure that there are sufficient services, amenities, and open space to support growing communities. It is, however, important to note that existing land use patterns may not always conform to municipal zoning regulations. To gain a better understanding of how current zoning regulations and existing land use patterns in the Mount Uniacke GMA may impact the GMA’s capacity to grow, a review of zones in the GMA and a series of site visits were conducted. These site visits were used to provide an enhanced understanding of how land was being utilized in the GMA and through what built forms.

Figure 10 on the following page quantifies land coverage for different zones in the Mount Uniacke GMA (East Hants, 2016a, 2016b; Nova Scotia, 2023c). The most widely applied zone to the GMA is the Rural Use zone, accounting for 35.9% of the GMA’s area. The intent of the Rural Use zone is to allow for agricultural and residential uses – the latter in the form of 1- and 2-unit structures by right, and up to 8-unit structures by development agreement (East Hants, 2016c). As a result of the lack of Rural Use zoned land being used for agricultural uses (which was confirmed on site visits), IGS has, for the purposes of this analysis, considered the Rural Use zone to be a residential zone in the GMA. The Established Residential Neighbourhood (R1) and Two Dwelling Unit Residential (R2) zones also occupy significant land areas in the GMA, accounting for 19.3% and 16.5% of the GMA’s area respectively. These two zones generally intend to foster low-density residential developments in the form of 1- to 2-unit structures by right, with room for small multiplexes (4 units) through conditional approval in the R2 zone (East Hants, 2016c). Further, smaller portions of land

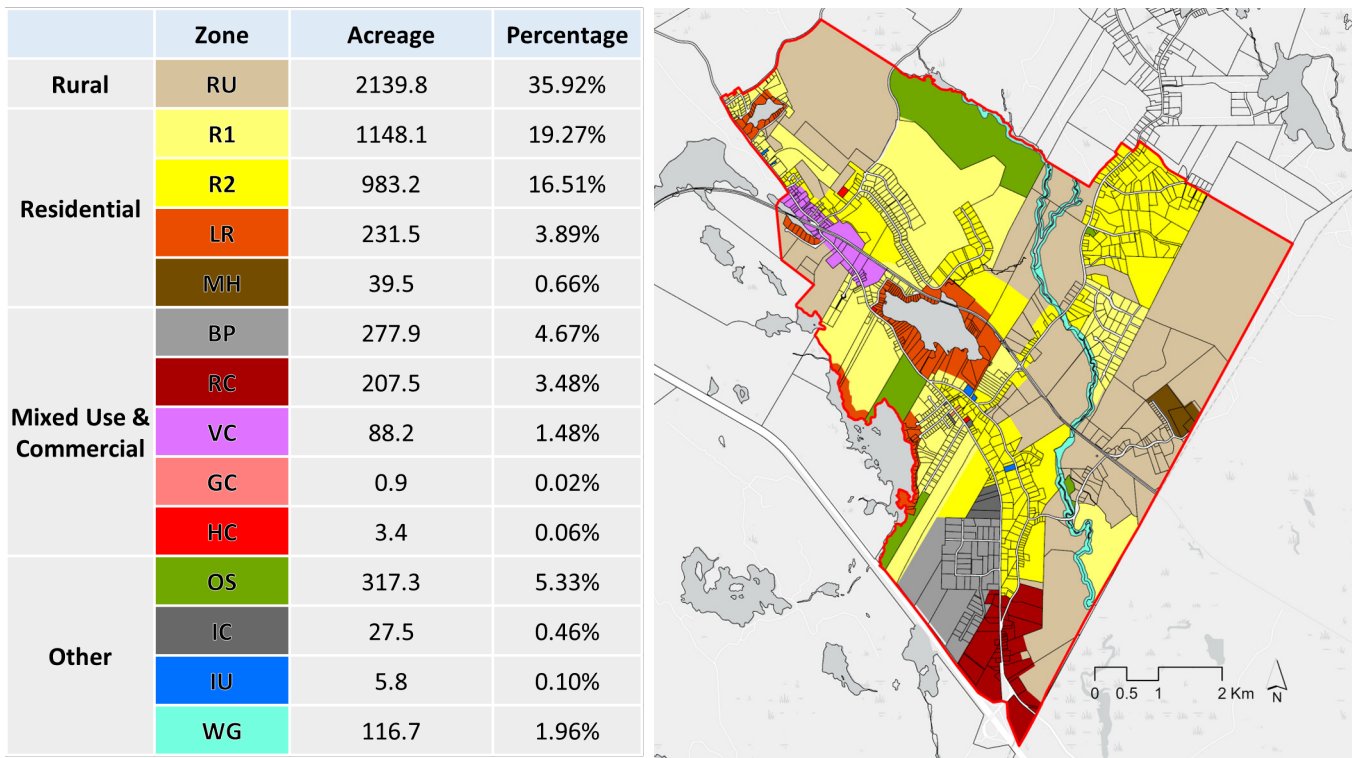


Figure 10: Map depicting the percentage of land coverage of different zones in the Mount Uniacke GMA

near Norman Lake and Pentz Lake are zoned as Lakeshore Residential. Again, this zone is meant to foster low-density residential development, here in the form of single-detached homes exclusively (East Hants, 2016c). Together, the four residential zones that have been applied to the GMA show that residential development is intended to occur in low-density patterns. Further, as the entire GMA is currently unserved, the minimum lot size for any residential use in these four zones is 3,720 sq m (East Hants, 2016c), which at nearly an acre is further conducive to large lot, low-density residential development patterns. Site visits confirmed that low-density residential uses are most common in the GMA (even with the R2 zone), with single-detached homes on large lots dominating the residential landscape.

In addition to residential-zoned land, there are two areas zoned for mixed and commercial uses in the Mount Uniacke GMA. First, just north of Pentz Lake, there are 99 acres of land zoned as Village Core – a mixed-use zone that permits higher-density residential uses and commercial uses (East Hants, 2016c). While the Village Core zone does permit for multi-units up to 20 dwellings by development agreement (East Hants, 2016c), few examples of higher-density residential structures were noted during site visits. Instead, the GMA area zoned as Village Core contained mostly single-detached homes and a series of small businesses. Second, at the exit of Highway 101 where the GMA boundary begins, there is a large area planned as a commercial centre consisting of 228 acres of land zoned as Business Park, 208 as Regional Commercial, and 28 as Industrial Commercial. While the Regional Commercial zone does intend to allow for mixed uses, East Hants’ (2016c) Land Use Bylaw holds that for mixed-use developments, a connection to municipal water and wastewater services is required. This has a limiting effect on mixed-use development potential in the GMA.

Growth Analysis

- 21 Recent Development Trends
- 22 Population Growth Scenarios
- 23 Land Use Capacity

Growth Analysis

Recent Development Patterns

To understand how recent development patterns have materialized in and around the Mount Uniacke GMA, 2016 - 2023 subdivision application data and was reviewed and mapped. First, all new lots created by subdivision were compared between the Mount Uniacke Region and the Mount Uniacke GMA. The Mount Uniacke Region is comprised of the communities of Mount Uniacke, East Uniacke, South Uniacke, and Lakelands (see Figure 11 below). As Table 5 shows, the total number of lots in both the GMA and Mount Uniacke Region created through subdivision increased significantly after 2020.

	2016	2017	2018	2019	2020	2021	2022	2023
Mount Uniacke Region (excluding the GMA)	13	3	3	2	4	40	31	0
Mount Uniacke GMA	45	16	8	7	8	79	150	46
Grand Total	58	19	11	9	12	119	181	46

Table 5: Lots created by subdivision 2016, – 2023

Where subdivision occurred after 2020 is shown Figure 11 (East Hants, 2016b, 2016a, 2023b; Nova Scotia, 2023a, 2023c) to the right. Most subdivisions occurring within the GMA are occurring in lands that are zoned as R1, except for one 35-unit subdivision being situated on Rural Use zoned land. Through a combined review of subdivision application documents and site visits, it was determined that the dominant built form in new subdivisions is (or is planned to be) single-detached homes on large lots. This is unsurprising considering the zoning regulations that are

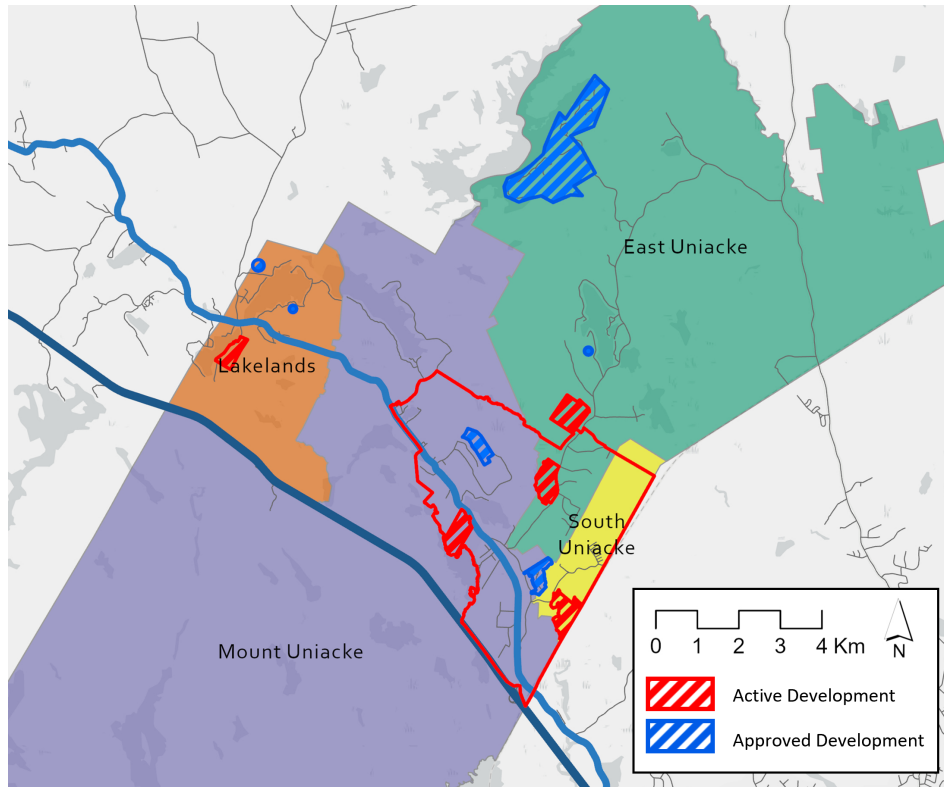


Figure 11: Map depicting active (e.g., being built) and approved subdivisions in the Mount Uniacke GMA

currently in place intend to foster low-density residential uses. Furthermore, this combined review revealed that the prevailing development model in these subdivisions is to divide large lot areas and then sell them to homebuilders or small developers. Interestingly, one 64-unit subdivision on East Uniacke Road was identified as occurring outside of the GMA boundary in Rural Use zoned land – a subdivision that might be

at odds with current growth policy frameworks. The only other subdivisions occurring just outside of the GMA boundary were smaller in nature, around Lake Head and Lewis Lake.

In addition to this review of subdivision application data, development permit data for new residential starts (not including subdivisions) from 2016 – 2023 for the Mount Uniacke GMA and Mount Uniacke Region was reviewed. As table 6 shows, new residential starts peaked in 2021. Of these new residential starts, 92.15% were for single-detached homes (East Hants, 2023a).

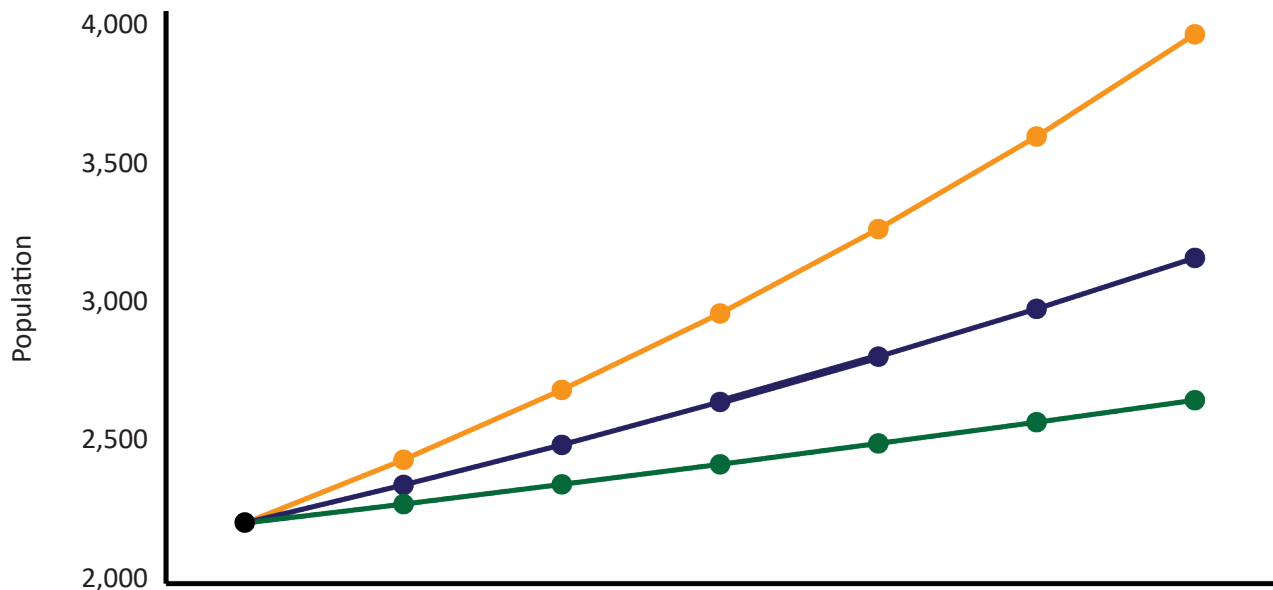
Year	Mount Uniacke GMA	Mount Uniacke Region	Total
2016	5	7	12
2017	9	20	29
2018	3	12	15
2019	7	18	25
2020	9	26	35
2021	19	40	59
2022	6	23	29

Table 6: Development permit data 2016 – 2022, Mount Uniacke GMA and Mount Uniacke Region

Population Growth Scenarios

The above-noted increases in subdivision and development activity indicate that the 5.1% growth rate that occurred in the Uniacke/Rawdon ADA between 2016 – 2021 has resulted in new housing demand and interest from developers. To understand how the Mount Uniacke GMA can accommodate continued growth, it is imperative to evaluate the land capacity of the GMA to integrate growth under various population growth scenarios.

An annual percentage compound growth method was utilized to create three population growth scenarios for the GMA. These scenarios include moderate (3%), normal (6%), and strong (10%) growth rates, displayed



Scenario	2021	2026	2031	2036	2041	2046	2051
Moderate (3%)	2,212	2,278	2,347	2,417	2,490	2,564	2,641
Normal (6%)	2,212	2,345	2,485	2,635	2,793	2,960	3,138
Strong (10%)	2,212	2,433	2,677	2,944	3,239	3,562	3,919

Figure 12: Graph depicting population growth scenarios for the Mount Uniacke GMA between 2021 and 2051

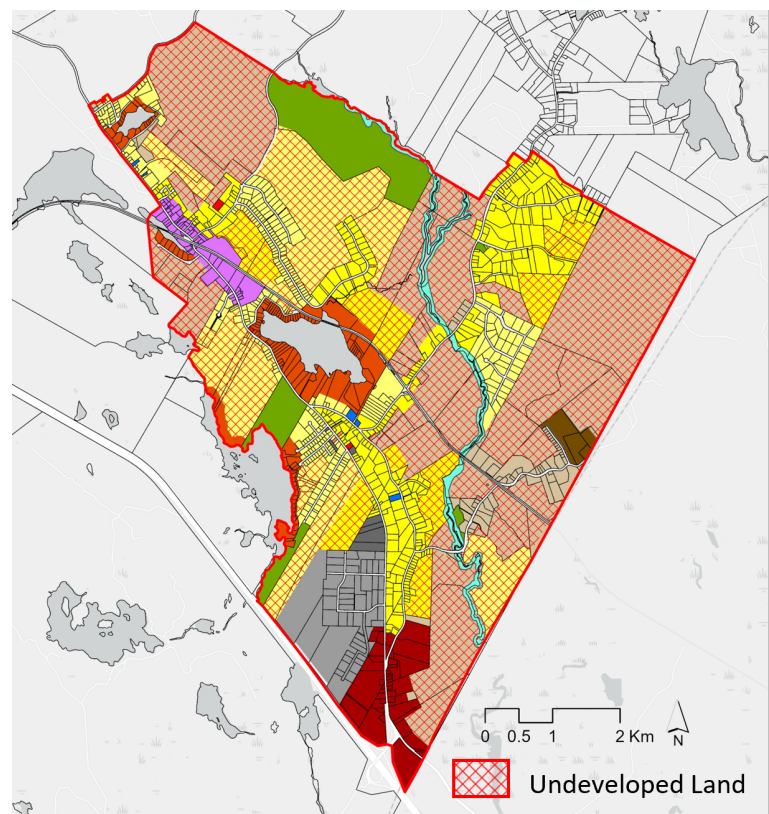
in five-year intervals. The moderate scenario suggests that growth in the GMA will slow down and return to a lower rate. The normal scenario assumes that the GMA will maintain a growth rate close to that experienced between 2016 – 2021 as highlighted in the *Demographic Profile* section. The strong scenario assumes the GMA will experience a higher growth rate than what has been most recently recorded. As Figure 12 on the previous page shows, if the GMA maintains a normal growth rate, the population is projected to reach 2,793 by 2041, meaning 581 additional residents would be added to the GMA’s population. By contrast, the GMA’s population will reach 3,239 under the strong scenario by 2041, representing a total population that is roughly 1.5 times the size of the GMA’s current population. Even under the moderate scenario, an additional 278 residents would need to be accommodated by 2031.

Whether actual growth falls into any scenario, the GMA will require increased residential development to accommodate new residents. Further, if growth were to occur in line with the normal or strong scenarios, it is likely that increased commercial and community services would be required to meet local demand and needs. In consideration of recent growth trends in Mount Uniacke, as well as in the HRM and in Nova Scotia more broadly, it can be reasonably anticipated that growth will fall between the normal or strong scenarios.

Land Use Capacity

Through a combined review of East Hants’ current land use zoning map and Provincial civic address point data (East Hants, 2016b; Nova Scotia, 2023b), it was determined that there is an estimated 3,107 acres of undeveloped land within the GMA zoned for residential development. This estimation does not take land suitability into account but does account for active subdivision development taking place (see Figure 13 on the following page). To evaluate the land use capacity of the GMA, estimations of land requirements for single-detached homes were developed under three development pattern scenarios.

As Table 7 on the following page shows, a development pattern scenario was first created for “current development patterns.” The land needed per unit under this scenario was calculated by taking the total land area for all new subdivisions in the GMA from 2021 – 2023 and dividing that total by the total number of lots that were



Zoning	Undeveloped Land (acres)	% of land undeveloped
R1	766.95	66.8%
R2	357.57	36.4%
RU	1,982.81	92.7%

Figure 13: Map depicting undeveloped residential zoned land in the Mount Uniacke GMA

created. It should also be noted that this calculation takes into account other factors such as land needed for roads, parkland, or frontage. This calculation indicated that on average, new lots are 19,424 sq m (4.8 acres). If residential development continues to occur on large lots of this size, it is estimated that 647 new single detached homes could be integrated into the GMA. This number could be even lower when accounting for land suitability.

Land use capacity was also estimated under a development pattern scenario that aligned with current minimum lot size allowances for residential zoned land in the GMA. To calculate the land required for a single detached home in this scenario, the following land use regulations and other assumptions were utilized:

- » In the Rural Use, R1, and R2 zones, the minimum lot size requirement is 3,720 sq m;
- » A minimum frontage of 30 m is required in each of these zones;
- » Assuming the right-of-way width is 30 m, each lot will require at least 450 sq m of land for roads;
- » East Hants' Subdivision By-law requires that 10% of land in new subdivisions is to be designated for parkland;
- » It is assumed that an additional 10% of the land will not be developable due to land shape and lot layout.

In applying these regulations and assumptions, under policy frameworks the minimum land area required for a single-detached home is estimated to be 5,212 sq m $((3,720+450)/(1-10\%-10\%))$, which is equal to 1.29 acres. In such a scenario, 2,413 new single-detached units could be integrated into the GMA.

A third development pattern scenario was developed, wherein minimum lot size is reduced to 1,850 sq m. This scenario represents a case where a new or innovative servicing technique has been introduced into the GMA, therefore allowing minimum lot size requirements to be reduced. In incorporating the additional land use regulations and assumptions used in the second scenario, the minimum land area required for single-detached units under this scenario would be 2,875 sq m. In this scenario, the GMA would be able to accommodate 4,374 new single detached homes. This total represents nearly two times the density reached under the current minimum lot size scenario, and seven times the density reached under the current development pattern scenario.

Using the normal and strong population forecasts and assuming that average household size will be two persons based on findings made in the *Demographic Profile* section, Figures 14 and 15 show how residential zoned land in the GMA will be able to integrate growth over time based on all three development pattern scenarios. As both graphs highlight, Mount Uniacke has an abundance of land for residential development

Development Pattern Scenario	Minimum lot size (sq m)	Land needed per unit (sq m)	Maximum Units
Current development patterns	3,720	19,424	647
Current minimum lot sizes	3,720	5,212	2,413
New/innovative servicing	1,850	2,875	4,374

Table 7: Total number of single-detached units that can be integrated into the Mount Uniacke GMA under different development pattern scenarios

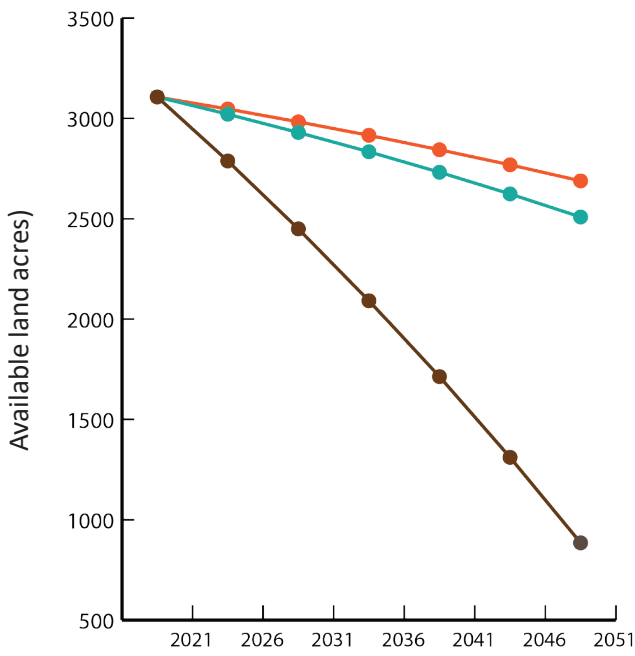


Figure 14: Available residential land under a normal scenario

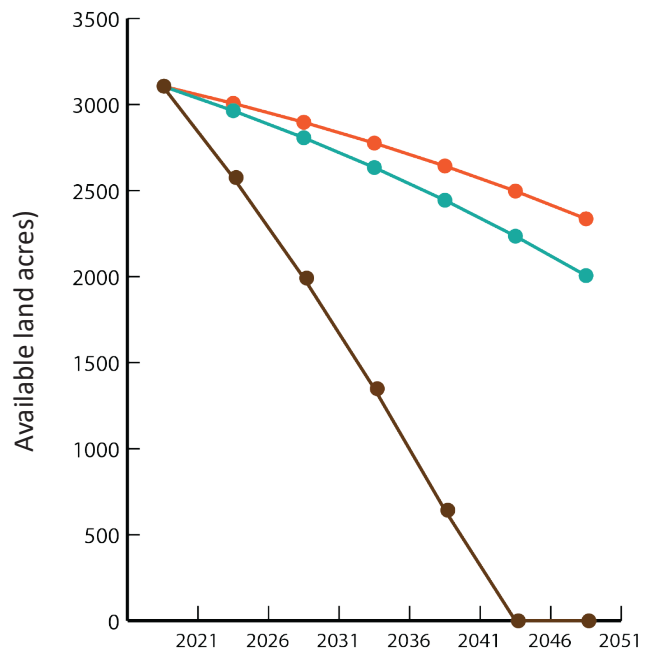


Figure 15: Available residential land under a strong scenario

- Current development patterns
- Current minimum lot sizes
- New/innovative servicing

that can be anticipated to last long into the future, so long as current large-lot, single detached home development patterns are altered. If development patterns were to align more closely with current minimum lot size requirements, land would be used more efficiently and would be able to integrate population growth into the GMA in the long-term. It should, however, be noted that current minimum lot requirements in the Rural Use, R1, and R2 zones are restrictive in the GMA due to it being unserved. As the new/innovative servicing development pattern scenario highlights, the introduction of alternative servicing that would allow for reductions in minimum lot sizes in the GMA would allow for an increasingly efficient land use. Further, alternative servicing would likely allow for a greater diversity in residential dwellings (e.g., smaller single detached homes, townhouses, small apartments), which could serve to better meet the needs of the GMA as it grows.

Local Consultation

- 27 Community Character & Desires
- 28 Development Trends & Needs
- 29 Policy Challenges & Opportunities

Local Consultation

To better understand the Mount Uniacke GMA's local context, a series of interviews were conducted with two local area councillors and five municipal planning staff members. Councillors and planners were selected as interviewees for their knowledge of Mount Uniacke's local population and its values, development environment, and current growth management policies. Engagement with the public was not conducted as this was not within the scope of this project.

The interviews conducted were "semi-structured", meaning that while an interview guide with questions was utilized (see Appendix A for interview questions), respondents were encouraged to expand on subject areas they deemed important. As research unfolded concurrent to the interview process, two new questions that addressed emerging topics of interest to the project were added. Ultimately, findings derived from the interviews intend to give a qualitative sense of the community, development pressure, and effectiveness of current growth management policies, which can then be compared to the quantitative findings made in this report. This process intends to ensure that recommendations made through this project are grounded in local knowledge, and that recommendations reflect possible actions that professional planners are interested in/believe should be considered and decision makers have political will to see implemented.

Community Character & Desires

Mount Uniacke was often described as tight knit, with residents well connected by formal and informal social networks. Community-based initiatives and fundraising projects were described as common, particularly when a community member(s) was in a time of need. Both councillors and planners were clear that Mount Uniacke serves as a bedroom community for the HRM (and to a lesser extent Windsor) – which was explained as being attractive for those who want to work in the city but maintain a rural "feel" at home. Interestingly, one councillor noted that in recent years (post-pandemic) many seasonal residents to the area had become full-time residents, being drawn to the open space and community offered in Mount Uniacke. Several interviewees noted that local residents wanted to see an increase in services available in Mount Uniacke, with commercial and recreational opportunities being most needed. This lack of services, one interviewee explained, was causing some local residents to feel excluded from the Municipality.

"We are considered a bedroom community, but we are very much a rural feel community as well. Outdoor activities – 4-wheeling, boating, walking, equestrian – those are all things that have been pillars of the community" – Councillor

Nearly every councillor and planner noted the importance of the natural environment to Mount Uniacke and its residents. Being surrounded by lakes, the Sackville River, open space, and historical trail networks was described as essential to characterizing Mount Uniacke. Preserving these aspects of the natural environment was noted as a concern among residents who greatly enjoy the recreational activities (e.g., boating, fishing, hunting, ATVing) that Mount Uniacke has to offer. Losing informal trail networks as new

development arrives in the area was noted as a particular concern among some residents.

Development Trends & Needs

Councillors and planners were unanimous in explaining that over the past five years, development activity has increased significantly in Mount Uniacke. The shift from seeing a few dozen new homes built each year to multiple subdivisions being approved in a year was described as a significant change for Mount Uniacke. This change has been a cause for concern for a number of residents, who have questioned the degree to which new development will impact local infrastructure. These concerns are primarily focused on possible impacts on road quality, traffic, and water supply. Ultimately, many planners and councillors explained, community members understood that growth could provide benefits for Mount Uniacke but want to ensure it occurs sustainably and non-intrusively. Along with these physical pressures of development, many interviewees noted that there would be a need for more services in the area as growth continued, which would likely need to come in the form of commercial and recreational opportunities.

“Mount Uniacke has become more attractive for developers . . . instead of incremental growth we’re now seeing larger developments all being proposed at once” – Planner

Even more pressing in the face of growth and development was a need for more housing options in Mount Uniacke – which councillors and planners unanimously agreed needed to be achieved. As highlighted in this report’s *Demographic Profile* and *Spatial Analyses* sections, the residential growth that has recently occurred in Mount Uniacke has been largely limited to single-detached homes on large lots. While this growth has been welcomed, it was acknowledged that relying exclusively on single-detached homes on large lots is not conducive to meeting changing housing needs in Mount Uniacke. Of particular concern was a lack of housing options for seniors looking to downsize and age-in-place. Both councillors and planners noted being aware of several seniors who had to move to neighboring communities with smaller housing options as none were available in Mount Uniacke. Another concern was the lack of housing options for residents who cannot afford; or do not require or aspire to a single-detached home on a large lot.

“One of the biggest problems in our community is seniors have to move out . . . it’s just sad because you invest 30, 50 years in a community and there’s nowhere to go now . . . even for our young people now, this community is becoming unaffordable.” – Councillor

Several respondents noted that young adults who grew up in Mount Uniacke have few affordable options – a challenge that was also said to be impacting those working in the community. Stemming from these types of responses, most councillors and planners expressed that new multi-unit developments (e.g., apartment complexes, semi-detached homes, rowhouses) are urgently needed in Mount Uniacke. Some respondents also noted that denser and more compact development forms could incorporate mixed uses to provide the area’s growing population with greater services and amenities it will require going forward.

Policy Challenges & Opportunities

Neither councillors nor planners were certain about when Mount Uniacke had been designated as a Growth Management Area. However, one planner did note that the designation likely took place during an early 2000s Official Community Plan review process. When asked if current growth management policy for Mount Uniacke was sufficient for guiding future growth and development in the area, councillors and planners were unanimous in their doubt. To facilitate a more diverse housing supply and commercial and recreational opportunities, it was explained that policy and zoning together needed to be more permissive. The most significant challenge to achieving a greater diversity in dwelling types (apartments and condo buildings were mentioned frequently) noted by councillors and planners was that Mount Uniacke was not connected to municipal water and wastewater services. This, it was explained, was reflected in policy that necessitates large lot sizes to account for private on-site wastewater systems. One councillor also referred to the lack of residential development potential in certain mixed-use zones, emphasizing that residential development is not possible in the Regional Commercial under current policy.

When asked if the use of ‘communal’ or ‘cluster’ septic systems for the purpose of allowing more compact and diverse forms of development was common in the Municipality, respondents only noted two examples – both of which were owned and operated by condominium corporations. When asked if the Municipality would have interest in owning and managing these types of systems as part of a growth management strategy for Mount Uniacke, most respondents agreed that such an approach was worth further exploring.

While financial and staffing capacity levels were noted as possible barriers to the Municipality owning and operating ‘communal’ or ‘cluster’ septic systems, there was a clear interest in these systems’ ability to foster higher densities and more diverse housing types that are not currently possible under existing policies and zoning regulations. One councillor also noted that the Province would likely be supportive of cluster systems being used in such an approach, given recent trends of growth and development pressure across Nova Scotia.

“I’ve had the conversation here with our infrastructure and operations director about his willingness . . . about the Municipality owning and operating these small systems . . . there is a willingness to learn more and discuss it at least” – Planner

“Technology is always getting better. Things are becoming more cost-effective . . . if you have the science and the data now, I believe with the way the Province is currently moving . . . this is the window to make these changes” - Councillor

Policy & Document Review

- 31 Intended Growth Patterns
- 33 Limits to Growth in Unserved Areas
- 34 Infrastructure: Limits & Opportunities

Policy & Document Review

To establish a thorough understanding of how growth in East Hants is intended and permitted to occur, a policy and document review of the Municipality's planning documents and related reports was conducted. This review sought to identify policy and regulatory frameworks that could have implications for future growth in the Mount Uniacke GMA. Growth policy in East Hants is primarily managed through the Municipal Planning Strategy (MPS), while the Land Use Bylaw (LUB) and Subdivision Bylaw contain additional provisions with implications for how growth can occur. Supportive information on local context for growth patterns, pressure, and management was found in consultant studies on growth management and sewer capacity, as well as the municipally conducted *2016 Socio-Economic Study*. Specifically, this policy and document review highlights how growth is intended to occur in East Hants and the Mount Uniacke GMA, the limits to achieving growth in unserviced parts of the Municipality, and what infrastructure-related challenges and opportunities are present under current policy.

Intended Growth Patterns

In broad terms, East Hants is concerned with protecting existing community character while simultaneously encouraging and enabling the development patterns needed in growing communities. As noted in the *2016 Socio-Economic Study*, residential development in East Hants has historically taken the form of single unit dwellings (East Hants, 2018) – which, as identified through this report's *Demographic Profile* and *Spatial Analyses* sections, remains true today. This is important to note, as East Hants often refers to the existing character of communities and their landscapes in official documents. The MPS describes East Hants as attractive to its residents and visitors in part due to the blending of urban and rural residential settings, history, and landscapes (East Hants, 2016d). The MPS also directs the LUB and Subdivision Bylaw to respect community character in existing residential areas, and raises the importance of local context when determining appropriate density and development types to be permitted (East Hants, 2016d).

The importance of local context is especially prevalent in rural areas of the Municipality, where the MPS calls for low density development that is “consistent with the type of development occurring in rural areas” (East Hants, 2016d). If taken to refer to single unit dwellings, ‘existing character’ as described in the MPS makes it clear that existing single unit development patterns are intended to be broadly protected in East Hants, particularly in rural areas like the Mount Uniacke GMA. Specifically, Mount Uniacke is identified in the MPS as an area with a village core in which the desired development forms seek to uphold a small-town urban character (East Hants, 2016d).

Although the protection of existing character features prominently in East Hants' planning documents, the Municipality does recognize a need for multi-unit development to better address local housing needs and accommodate future population growth. As noted in the *2016 Socio-Economic Study*, since the mid-2010s there has been an increase in the number and proportion of multi-unit dwellings being added to the Municipality's housing stock (East Hants, 2018). This increase is attributed to economic forces, smaller household

sizes, lifestyle changes, and an aging population (East Hants, 2016d). The MPS acknowledges that planning for the emerging trend of multi-unit dwellings has been “one of the most controversial planning issues in East Hants” and, perhaps in an effort to address this controversy, calls for ‘context-sensitive’ intensification and density (East Hants, 2016d). To support the demand and need for new multi-unit development, the MPS’s residential development section asserts that a range of housing types are supported and encouraged in the Municipality (East Hants, 2016d). For rural areas, the MPS’ Rural & Agricultural Lands section expresses an openness for small multiplex dwellings pursuant to development agreements.

The MPS also presents a supportive view of mixing land uses, specifically; commercial, residential, recreational, and institutional uses to encourage density and housing variety (East Hants, 2016d). This suggests support for the development of multi-unit dwellings. Mixed-use development is primarily encouraged in the Mount Uniacke GMA through the Municipality’s Village Core designation, which applies to the core of the GMA and intends to allow for a mixture of commercial and residential uses (East Hants, 2016d).

In terms of *where* growth is intended to occur, East Hants aims to direct future growth into four designated Growth Management Areas (GMAs), which seek to discourage urban sprawl and promote contiguous forms of compact development around existing built-up areas (East Hants, 2016d). GMAs encompass areas with existing development and generally provide municipal services in the form of road, water, and wastewater infrastructure, with the goal of delivering these in a cost-effective and sustainable manner. The Mount Uniacke GMA differs from the other three GMAs in that it is unserviced and is intended to act simultaneously as a Growth Reserve Area (GRA) (East Hants, 2016d).

There are three GRAs in total, all of which are not serviced by municipal water and wastewater infrastructure and have not been developed to the extent seen in the GMAs (East Hants, 2016d). East Hants views GRAs as having a strong potential to accommodate future residential and commercial development when needed (East Hants, 2016d). Policy directing GRAs sets out three conditions as to when urbanizing development should be permitted should a GRA meet one or all of the following: (1) development density of GMAs meets desired capacity, (2) it is in the significant or overall best interest to extend services to the GRA, or (3) the Municipality and its taxpayers can absorb the costs for providing water and wastewater services in the GRA (East Hants, 2016d). All municipal policy as it relates

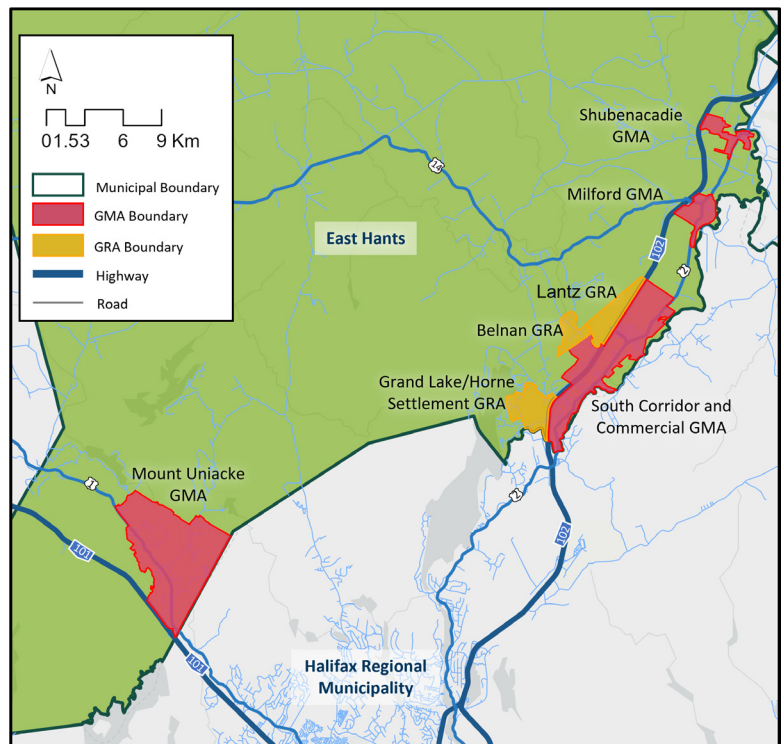


Figure 16: Map depicting East Hants’ Growth Management Areas and Growth Reserve Areas

to GRAs and GMAs is listed in the MPS with accompanying policy goals and statements (East Hants, 2016d).

Limits to Growth in Unserviced Areas

The degree to which growth can occur in unserviced areas in East Hants is limited through both policy and land use regulations. Higher minimum lot size requirements are set in East Hants’ Land Use By-Law (LUB) for zones located in areas without servicing than those serviced by municipal water and wastewater infrastructure. Such requirements have implications for the level of density that can be achieved in the Mount Uniacke GMA. Table 8 below takes the seven most prominent developable (e.g., allow for residential and commercial land uses) zones in the Mount Uniacke GMA (as identified in this report’s *Spatial Analyses* section) to highlight the degree to which the GMA being unserviced limits its development potential (East Hants, 2016c).

Zone	Estimated Land Coverage in Mount Uniacke GMA	Minimum Lot Size (sq m) By Servicing Level		
		On-Site	Sewer and Water	Sewer Only
Rural Use	35.92%	3,720	N/A	N/A
R1	19.27%	3,720	500	928
R2	16.51%	3,720	550	920
Business Park	4.67%	4,000	1,858	N/A
Lakeshore Residential	3.89%	3,720	N/A	N/A
Regional Commercial	3.48%	8,100	920 - 1,860	N/A
Village Core	1.48%	3,716	700	700

Table 8: Minimum lot size requirements for prominent zones in the Mount Uniacke GMA

While there are provisions within the Rural Use zone to enable denser forms including 8-unit multiplexes, zero-lot line and 2-unit dwellings in the R1 zone, and 4-unit multiplexes in the R2 zone, lot size servicing requirements present challenges to actualizing these development types. Further, the requirement that 4-unit and 8-unit multiplexes be approved through a development agreement process in unserviced areas (East Hants, 2016c) makes their development more costly and time consuming for developers – making these development types less likely to occur. Similarly, commercial zones (e.g., Business Park and Regional Commercial) require large lot sizes for unserviced developments. In addition, the LUB regulates the maximum floor area of buildings in commercial zones, restricting developers to building smaller structures on larger lots in unserviced areas like the Mount Uniacke GMA. Finally, opportunity for mixed-use development is limited in zones intending to foster such uses if lands are unserviced. The mixed uses typically permitted in the Regional Commercial zone are not permitted in unserviced lands, while mixed uses in the Village Core and Rural Use zone are only achievable through a development agreement. Ultimately, these provisions highlight that density in the Mount Uniacke GMA is limited by current policy and regulations.

Infrastructure: Limits & Opportunities

East Hants places importance on municipal infrastructure being financially sustainable. The Municipality emphasizes that future developments serviced by new infrastructure must be able to fully pay for its capital and operating costs through property taxes (East Hants, 2016d). This approach to service provision is reflected in the Municipality's approach to GRAs (which the unserviced Mount Uniacke GMA acts as), where development is to be limited by council to prevent sprawl – a development pattern which would render the future extension of municipal servicing to such areas costly (East Hants, 2016d).

In its 2014 Growth Management Review report for East Hants, consulting company WSP found that developed areas in the Mount Uniacke GMA have a relatively low density, anticipating that such patterns would likely continue with only on-site servicing available in the area (WSP, 2014). Notably, WSP suggested that the GMA's population density could be increased through augmented service provision, either through the extension of central municipal water and wastewater services or purchase of these services from the HRM's nearby supply in Upper Sackville (WSP, 2014). To alter low-density growth patterns in the GMA, WSP explained that East Hants could allow an opening for subdivisions through development agreements to be built under environmentally sustainable 'conservation design guidelines', which would minimize the costs of future municipal infrastructure (WSP, 2014).

In its related 2015 Sewer Capacity Study, WSP ultimately did not recommend an expansion of wastewater services beyond the three GMAs already serviced, as these GMAs were anticipated to be able to accommodate all commercial and residential development in need of municipal servicing to 2046 (WSP, 2015). These conclusions were made in 2015, a time in which growth in unserviced areas like the Mount Uniacke GMA, were experiencing significantly less development pressure. To accommodate growth and allow for the non-traditional development patterns needed in the GMA today, certain policy statements indicate that East Hants will consider innovative servicing models.

The consideration of using alternative servicing systems is particularly notable in relation to the use of Comprehensive Development Districts (CDDs). The MPS notes that developments enabled by a Rural CDD designation could make use of alternative servicing systems such as 'cluster' septic systems for servicing (East Hants, 2016d). Policy Statement RR13 stipulates that the adequacy of properties in a Rural CDD to support a private or clustered septic system as well as provide an adequate and safe water supply should satisfy council as part of the rationale to consider entering a development agreement, which allow for the creation of CDDs (East Hants, 2016d). As such, the use of Rural CDD designations in the Mount Uniacke GMA could serve to achieve needed and desired development patterns.

Along with water and wastewater infrastructure, policy and regulations related to roads play a major role in determining how growth occurs in East Hants and the Mount Uniacke GMA. Under the Subdivision Bylaw, all lots created in a GMA or GRA must have frontage on a public street or highway, with the Village Core zone permitted to have frontage on private roads or right-of-way easements with conditions (East Hants, 2016e). Lands zoned as Rural Use (other than those within the Rural Subdivision Development Area, which is north of the Mount Uniacke GMA) are not permitted to create new public streets or private roads

through subdivision (East Hants, 2016e) – a regulation that is particularly significant for the Mount Uniacke GMA. As a result, subdivision in the Rural Use zone – which accounts for an estimated 35.92% of the Mount Uniacke GMA’s land – would be limited to parcels that have frontage on public streets or highways. This could have implications for developers looking to build in the GMA, as some parcels currently zoned as Rural Use would have to be re-zoned to either R1, R2, or Rural CDD in order for subdivision to occur. Again, the Rural CDD designation could be a particularly useful tool for foster subdivision in the GMA, as planning staff have recommended that no new private roads be built in the Municipality aside from extensions to existing private roads or those serving a Rural CDD (Uloth, 2021).

Jurisdictional Scan

- 37 Overview: Cluster Septic Systems
- 39 Managing Cluster Septic Systems
- 40 Enabling Cluster Septic Systems

Jurisdictional Scan

A key component of this project was a jurisdictional scan to identify new and innovative land use arrangements that other municipalities have enabled to allow for growth in unserved areas. Specifically, this scan sought to identify the policies, by-laws, and strategies that municipalities have used to enable and encourage these land use arrangements. Ultimately, this scan intended to provide a suite of growth management policy options to analyze for suitability in a future secondary planning strategy for Mount Uniacke. As key word searches and an initial scan of planning documents began, one approach to achieving growth in unserved areas emerged as being relatively well-known and viable – the use of ‘community’ or ‘cluster’ septic systems. As such, cluster systems became the focal point of the jurisdictional scan. By synthesizing research conducted on municipalities who have enabled the use of cluster systems and related reports and documents, this section provides an explanation of how cluster systems work, what benefits they can provide to municipalities, how they are managed, and how they have been enabled through municipal policy.

To enhance the project team’s understanding of cluster septic systems, a series of informal interviews and conversations were held with provincial engineers and planning professionals in Nova Scotia. These communications served to mitigate the project team’s lack of knowledge related to technical servicing requirements. Further, these communications provided insight into how cluster systems are enabled through policy in Nova Scotia. Ultimately, these communications ensured that any recommendations made in this report related to cluster systems were well-informed and relevant to the provincial and local context.

Overview: Cluster Septic Systems

On-site septic systems are typically associated with low-density and rural residential land uses having their own private systems. Unlike the use of private on-site septic systems, cluster systems generally refer to septic systems that service multiple buildings, structures, or dwellings (USEPA, 2022). The use of cluster systems often allows for development patterns that are more compact than what is typically possible in areas where municipal infrastructure (e.g., central water and wastewater) is yet to exist (WSP, 2019). When serviced by cluster systems, rural properties no longer require the large minimum lot sizes they would need to account for having a private on-site system. Instead, through cluster systems the septic field and tank are typically located on a separate lot independent of the

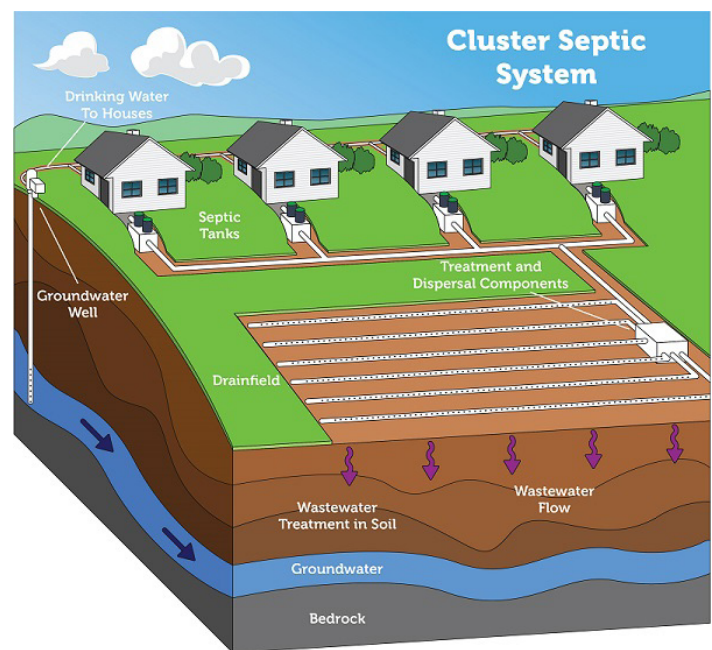


Figure 17 : Basic cluster septic system connection model (USEPA, 2022)

lots with properties that are connected to the system (see Figure 17), which in effect allows for each lot size to be significantly smaller, ultimately allowing for increasingly compact development patterns (WSP, 2019). A comparison between development patterns achieved through private on-site systems and cluster systems is highlighted in Figures 18 and 19.

By allowing unserviced areas to develop more compactly, cluster systems offer municipalities a number of potential benefits. First, cluster systems can increase a municipality’s revenue generated through property taxes by allowing levels of density and housing types that would be unachievable through the use of private on-site systems. Second, by enabling land use that is more efficient (e.g., uses less space) than land use serviced by private on-site systems, cluster systems can serve to preserve open space and greenspaces (SAA Design Group, 2014). This can be particularly valuable for rural communities who strongly value open space and the natural environment. Third, cluster systems allow for mixed-use and residential development types (e.g., townhouses, rowhouses, bare land condos, multi-unit apartment complexes) that would be unachievable with traditional private on-site systems. This can be particularly valuable for areas seeking to diversify their housing stock (e.g., create aging-in-place options for seniors, options for younger adults) and enable residential development types that are more likely to be affordable than single-detached dwellings on large lots. Finally, in requiring a centralized authority to design, monitor, and maintain the on-site system, cluster systems mitigate the challenges posed by the mismanagement of private on-site systems.

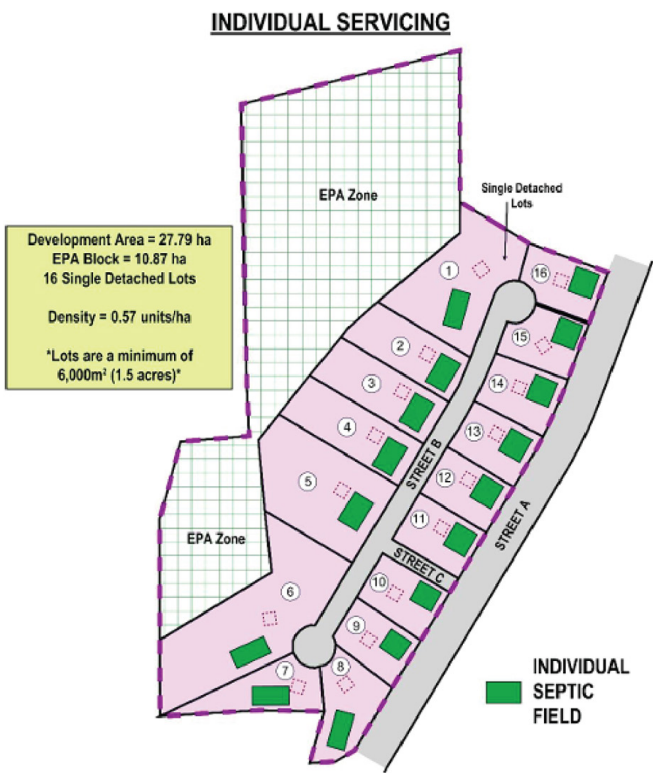


Figure 18: Site plan highlighting the level of density that can be achieved through private on-site servicing (WSP, 2019)

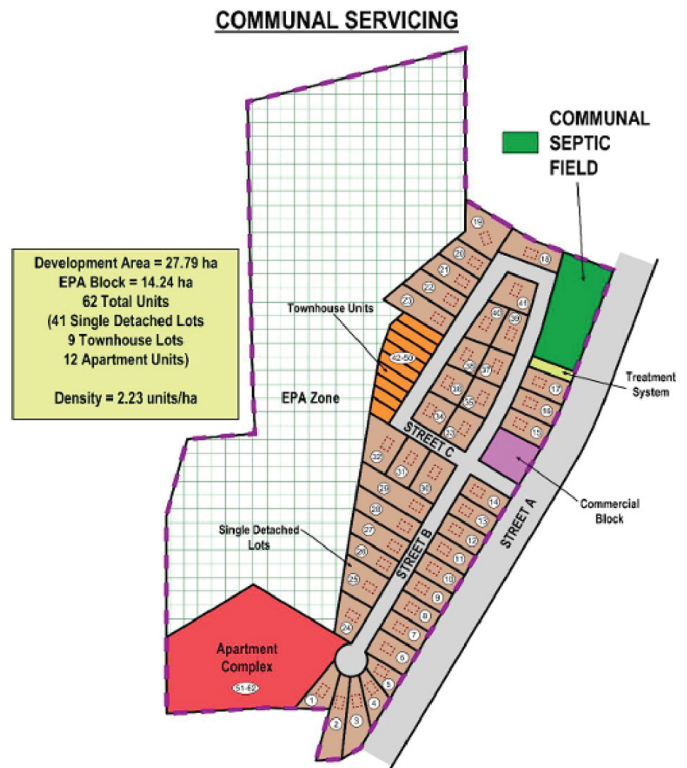


Figure 19: Site plan highlighting the level of density that can be achieved through cluster septic system servicing (WSP, 2019)

Managing Cluster Septic Systems

As the cases encountered in our jurisdictional scan highlighted, cluster systems are nearly always built by private developers. In building the system, developers are required to meet the particular jurisdiction's on-site sewage disposal requirements, which are typically set by municipalities, provinces, or states. Once built, there are two pathways for cluster systems to be managed: through municipal or private management.

For a municipality to assume responsibility for managing a cluster system, policies and by-laws would first need to be enacted granting the municipality such authority. The transfer of the system from the private developer to the municipality typically takes the form of 'transfer agreements' (Regional Municipality of Ottawa-Carleton, 1997; Rocky View County, 2011; SCRD, 2022). These transfer agreements often stipulate that the system is only to be turned over to the municipality on a no-cost and deficiency-free basis (Rocky View County, 2011). To further ensure that privately built cluster systems are well-functioning, municipalities often stipulate that systems must first be managed privately for a period of two years (Regional Municipality of Ottawa-Carleton, 1997; Rocky View County, 2011; SCRD, 2022; WSP, 2019). Then, once the system is proven to adequately function, the municipality completes the 'transfer agreement' and assumes responsibility for the system. While the management of cluster systems is often undertaken by a municipality's public works (or equivalent) department, there are examples of municipalities establishing and subsequently funding new organizations for the specific purpose of managing cluster systems (WSP, 2019). Such organizations are typically referred to as 'municipal service corporations' (WSP, 2019).

To manage cluster septic systems prudently, municipalities have developed asset-management databases and other tools to track the operational status of municipally owned systems. The development of an inventory of municipally owned cluster systems is common, wherein a municipality tracks and updates maintenance records for the systems it owns (Mason County, 2023; Mason County Public Health, 2007). In addition, GIS databases can be used to track the location of cluster systems and the individual properties connected to the systems (USEPA, 2022). Both of these approaches aim to ensure that inspection and maintenance of municipally owned cluster systems occurs in a timely and efficient manner.

A variety of financing models can be used by municipalities for the management of cluster systems. Traditionally, municipalities recover costs for managing cluster systems through "dedicated user fees", which are charged to property owners serviced by the system on a yearly basis (Snider et al., 2016). To reduce financial burden on cluster system users, some municipalities have classified the management of cluster systems as a type of economic development program, thus granting the municipality the ability to use funding from the general property tax levy for management and maintenance costs (Snider et al., 2016). Finally, many municipalities have taken advantage of provincial and federal infrastructure funding programs for rural communities to finance municipal cluster system management programs (MCR, 2023; MODL, 2023; Snider et al., 2016).

In cases where municipalities do not have the capacity or policy framework in place to assume responsibility for managing cluster systems, management can be undertaken by private entities. Being that cluster systems are often used in 'bare land condo' developments, management typically becomes the responsibility of

condominium corporations. Here, a condominium corporation would likely contract out the maintenance and repair of the cluster system to an authorized entity – a process paid for using revenue generated through condominium fees. Once a maintenance contract is secured, the management of the cluster system would use many of the same tools used by municipalities to ensure that maintenance of the system occurs in a timely and efficient manner. Municipalities relying exclusively on the private management of cluster systems must consider whether they are comfortable with forgoing what is typically a core municipal responsibility – the provision of water and wastewater – and leaving this responsibility with private entities.

Enabling Cluster Septic Systems

To enable the use of cluster systems managed municipally or through private entities, a municipality would need to develop a range of policies, by-laws, standards, and guidelines. First, a definition of cluster septic system would need to be developed, which can typically be written into the municipality's land use by-law, or a by-law granting the municipality authority to own and manage cluster septic systems (Regional Municipality of Ottawa-Carleton, 1997; Rocky View County, 2011; SCRD, 2022). Second, the municipality would need to establish standards and guidelines for the construction of cluster septic systems. Municipalities with the capacity to own and manage cluster systems may develop design standards for cluster systems through by-laws (Rocky View County, 2011; SCRD, 2022), while others may simply require that the cluster septic system built by a private developer gains approval from the appropriate provincial authority (Regional Municipality of Ottawa-Carleton, 1997; WSP, 2019). Third, in cases where municipalities seek to own and manage cluster systems, a by-law granting the municipality such authority would need to be enacted. Fourth, a municipality would need to set lot size requirements for buildings, structures, or dwellings serviced by cluster septic systems. These lot size requirements are typically much smaller than those for single lots using private on-site systems and should be determined in consideration of typical ground and soil characteristics in the municipality. Finally, municipalities may consider implementing a range of complimentary policies and requirements related to the use of cluster systems, including, for example: environmental regulations (e.g., open space requirements) (SAA Design Group, 2014) or zoning regulations (e.g., designating where the use of cluster systems is permitted).

Nova Scotia's On-Site Wastewater Regulations

- 42 Provincial Regulatory Frameworks
- 44 Site Level Analysis
- 46 Wastewater Management Districts in Nova Scotia

Nova Scotia's On-Site Wastewater Regulations

Analysis of development records has shown that growth is occurring in the Mount Uniacke GMA at an unprecedented rate. In terms of residential growth, subdivisions with 20 to 50 single-detached homes on large lots are most common (East Hants, 2023b) – a trend indicative of the limited choices developers have in the GMA. Our multiple analyses coupled with what we heard from East Hants' planning staff and Mount Uniacke area councillors have indicated that denser development patterns are both suitable and desirable in the GMA as growth continues. As our jurisdictional scan has shown, the use of clustered on-site water and wastewater systems offers unserviced communities the ability to allow for denser development patterns through an economically viable and sustainable servicing model. While clustered systems could offer a pathway for densification and greater housing diversity in the GMA, their use must conform with Nova Scotia's servicing regulations. These regulations need to be understood before any type of policy is established enabling and encouraging the use of cluster systems in the GMA.

Provincial Regulatory Frameworks

Nova Scotia's *On-site Sewage Disposal Systems Regulations* stipulate that through subdivision, a minimum lot size of 2,700 square meters is required for the installation of an on-site wastewater system (Nova Scotia, 2018). At over half an acre, this minimum lot size requirement is reflective of traditional residential development patterns in rural and unserviced parts of Nova Scotia – meaning large lot, single unit residential dwellings. While the majority of Nova Scotia's on-site wastewater regulations apply to these traditional development patterns, Section 5.13 of the Province's *On-Site Sewage Disposal Systems Technical Guidelines* addresses the on-site servicing of denser residential land uses, as well as industrial, institutional, and commercial land uses through the use of cluster systems.

Here, a cluster system is defined as “a system intended to service more than one building, structure or dwelling” (Nova Scotia, 2013). For approval to install and use a cluster system, the system must occur on the same lot as the buildings, structures, or dwellings it services, except in cases of ‘condominium developments’ and ‘municipal developments’ serviced by ‘municipal systems’ – all of which will be explored in greater detail later in this subsection (Nova Scotia, 2013). To install and use a cluster system without the establishment of a ‘condominium development’ or a ‘municipal development’, demonstration that the property and buildings are owned by an individual or provincially registered business must first be provided (Nova Scotia, 2013). As such, without the establishment of a ‘condominium development’ or ‘municipal development’, two or more owners of single lots with buildings, structures, or dwellings would not be permitted to share a cluster system.

It can be inferred that these regulations intend to ensure that cluster systems occurring on single lots are used to service land uses such as:

- » Multi-unit apartment complexes (rental) or single structure condominium buildings;
- » Duplexes, triplexes, townhouses, or rowhouses that are owned by one individual entity (e.g., a rental company or a condominium corporation);
- » Commercial, industrial, or institutional facilities.

For the first 1,500 liters per day of design flow (e.g., estimated amount of water used daily by the system), single lots serviced by a cluster system are subject to the same minimum lot size requirements found in the *On-site Sewage Disposal Regulations* – meaning a minimum of 2,700 square meters per lot (or more depending on the depth of permeable soil) (Nova Scotia, 2013, 2018). As per Nova Scotia’s *On-site Sewage Disposal Systems Standard*, an average daily flow of 1,500 liters per day is commensurate with a residential structure containing four bedrooms with high water use fixtures (Nova Scotia, 2022c). For every additional 1500 liters of design flow (or part thereof), the minimum lot area must be increased by at least half of the original minimum lot requirements (Nova Scotia, 2013). Table 9 below highlights these requirements using the example of apartment buildings, demonstrating how minimum lot sizes increase in accordance with density levels on single lots using cluster systems. As this example demonstrates, modestly sized multi-unit structures would be subject to large minimum lot requirements in unserved areas were they to occur on a single lot.

# of units (1-bed) in an apartment complex	# of litres per day of design flow	Minimum lot size, sq m	Minimum lot size, acres	Area required per unit, sq m
4	1,500	2,700	0.67	675
6	2,250	3,375	0.83	562.5
8	3,000	4,050	1	506.25
10	3,750	4,725	1.17	472.5
12	4,500	5,400	1.34	450

Table 9: Estimated minimum lot sizes for apartment buildings serviced by a cluster septic system in Nova Scotia

Unlike cluster systems occurring on single lots, ‘condominium developments’ and ‘municipal developments’ serviced by ‘municipal systems’ – all of which are defined below – allow individual property owners to be served by the same cluster system (Nova Scotia, 2013):

Condominium development: means a development on property owned and registered in accordance with the Condominium Act and Condominium Regulations.

Municipal development: means the servicing of more than one individual lot by a municipal system, located on a separate property.

Municipal system: means a sewage collection system owned and operated by or on behalf of a municipality.

In rural and unserved parts of Nova Scotia, ‘condominium developments’ would likely take the form of a ‘bare land condo’ ownership model. Whereas ownership in a traditional urban condominium would take

the form of individual ownership of a single unit within a structure, ownership in a ‘bare land condo’ would take the form of individual ownership of a parcel of land that falls within a larger parcel owned and operated by a condominium corporation (Highlander Law Group, 2019). Under this model, the condo corporation would assume responsibility for “common elements”, which in unserviced areas can include the installation, management, and maintenance of a cluster system (Highlander Law Group, 2019).

By contrast, a ‘municipal development’ would likely take the form of a series of individually owned properties serviced by a cluster system that is managed and maintained by a municipality. For a series of individually owned properties to be serviced under this model, a municipality would need to have a Wastewater Management District (WMD) by-law in place. Through such a by-law, municipalities retain the power to designate specific areas (e.g., a set of lots) as Wastewater Management Districts, wherein the municipality establishes the type of system to be used in the WMD, as well as the extent to which the municipality is responsible for the repair, upgrading, or replacement of the system (Nova Scotia, 2022b). In the case of a WMD serviced by a cluster system, individual property owners on different lots would be sharing the system – an arrangement that is not possible without the municipality acting as the entity responsible for the cluster system’s management.

In both ‘condominium developments’ and ‘municipal developments’, minimum lot sizes are based upon the minimum lot sizes for the municipality in which they are located, with the exception of the lot that contains the cluster system disposal field (Nova Scotia, 2013). The lot containing the disposal field is subject to the same minimum lot requirements noted above for single lots using cluster systems (Nova Scotia, 2013), meaning a sizable amount of land is required for cluster systems to occur in ‘condominium developments’ and ‘municipal developments’. While this disposal field requirement would have a limiting effect on the level of density that can occur on the area being serviced by a cluster system, the level of density achieved would still be higher than that achieved through traditional private on-site wastewater systems.

Site-level Analysis

To highlight how the use of cluster septic systems under a ‘condominium development’ or ‘municipal development’ framework could achieve a higher level of density and more diverse housing types in Mount Uniacke, a site-level analysis was conducted using a 2022 site plan for an approved subdivision in the area. The site is approximately 57 acres in size and is located on East Uniacke Road. After being re-zoned from Rural Use to R1, the developer subdivided the parcel into 35 new lots for development, which on average were 6,579 sq m per lot (1.6 acres) (East Hants, 2023c) . This original subdivision plan is detailed in Figure 20 on the following page.

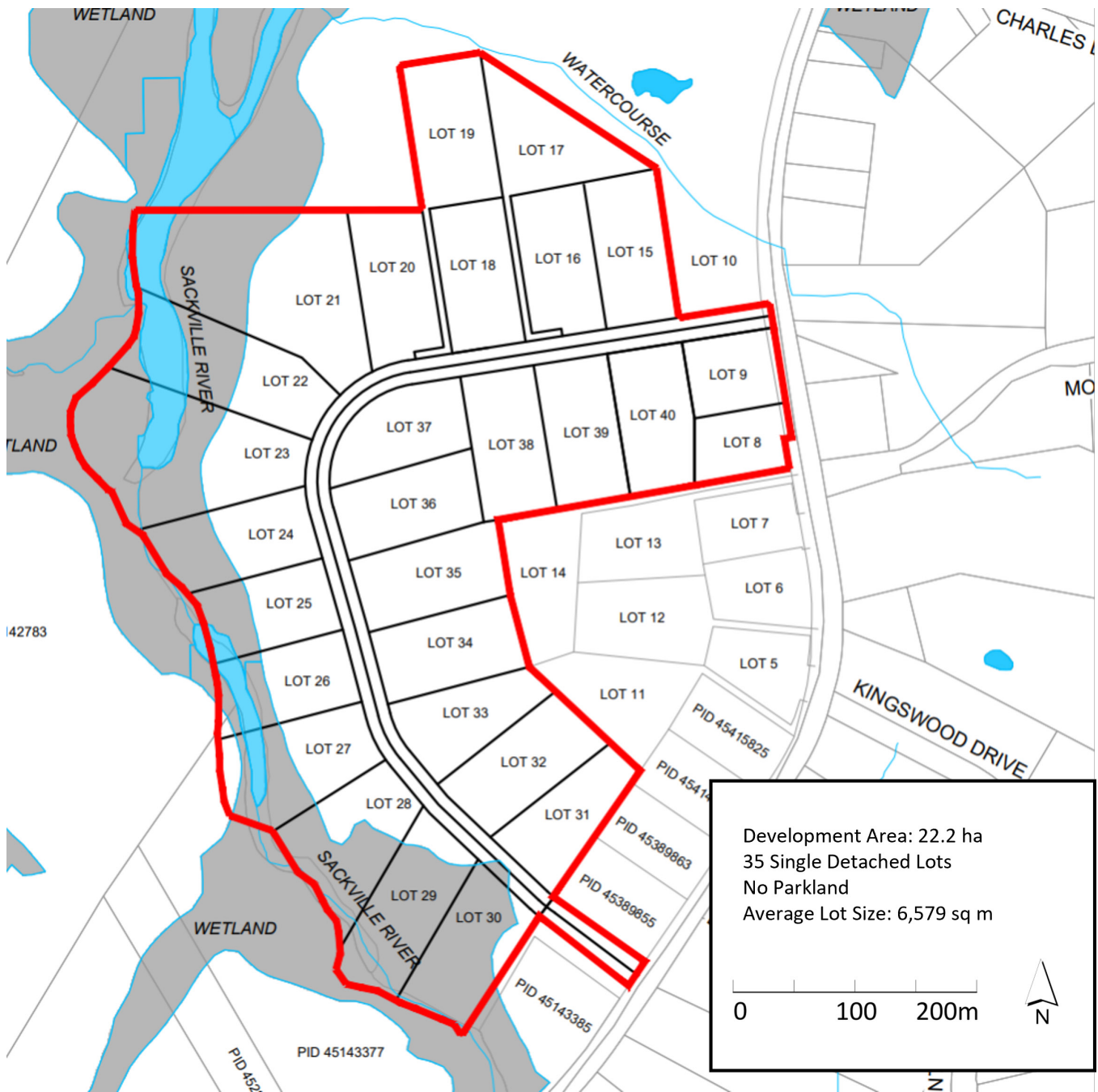


Figure 20: 2022 subdivision plan for a 57 acre parcel on East Uniacke Road in Mount Uniacke.

To demonstrate how higher density and a greater diversity in dwelling types could be achieved on this same parcel, a conceptual plan was developed wherein a cluster septic system was utilized to service the subdivision. A series of new minimum lot sizes for different dwelling types were developed for this conceptual plan, which were 1,850 sq m for single-detached homes and multiplexes and 550 sq m per townhouse unit. As shown in Figure 21 on the following page, when serviced by a cluster system, the same parcel is able to accommodate 44 single-detached homes, 14 townhouses, and two 8-unit multiplexes. This not only doubles the level of density achieved in the original site plan, but also offers a greater diversity in housing choice for different sectors of the population (e.g., young adults, seniors). Through the development of

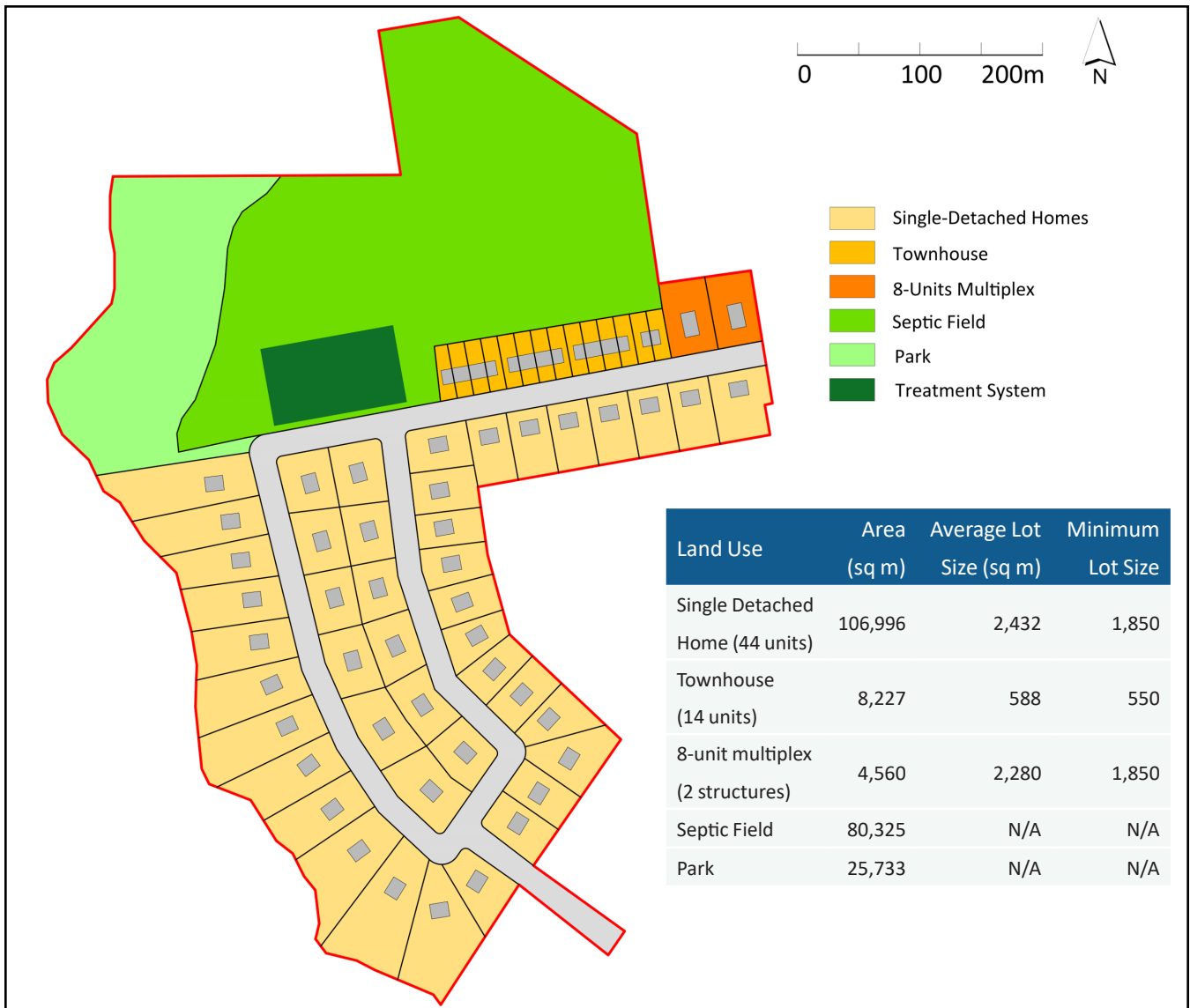


Figure 21 : 2022 subdivision plan re-imagined through cluster septic system servicing model

a simplified model that would estimate lot size requirements for the lot containing a septic field based on Nova Scotia’s regulatory frameworks (see Appendix B for detailed explanation), this conceptual plan includes an 80,325 sq m (19.8 acre) lot for the cluster system’s septic field and treatment system. While it is unclear within current regulatory frameworks if this lot can accommodate any recreation or park uses (e.g., if they are reasonably separated from the treatment system and septic field), this lot would preserve open green space on the larger parcel. To account for this uncertainty, an additional 25,700 sq m was also left undeveloped for parkland and recreational use.

Wastewater Management Districts in Nova Scotia

In Nova Scotia, there are few examples of municipalities using Wastewater Management District (WMD) by-laws to encourage compact development patterns and diverse housing types in unserved areas. Instead, WMD by-laws tend to be used in cases where private on-site systems are failing, with the municipi-

pality then establishing a WMD by-law to take on responsibility for replacing the failing system(s), and then subsequently managing the installation and maintenance of a new system.

The Municipality of the County of Richmond's (MCR) use of WMDs is the most expansive in the Province and provides a strong example of how WMDs are utilized and funded in Nova Scotia. Results from a study commissioned by the MCR found that 80% of private on-site sewer systems in one of its districts were either malfunctioning or inadequate (Nova Scotia, 2015). In response to this finding, the MCR – through the establishment of a Wastewater Management District by-law – developed their Wastewater Management Project. Through this project, residents were able to receive an appropriately designed on-site system that would be operated and maintained by the Municipality for seven years (MCR, 2023). At a cost of \$5,800 to each property owner, it is estimated that this program saved residents roughly 66% of the cost for installing the new system, as an estimated two-thirds of the costs were covered by federal, provincial, and municipal funding streams (MCR, 2023).

The Municipality of the District of Lunenburg (MODL) has used WMD by-laws for similar reasons, albeit at a smaller scale. With the intent phasing out the use of straight pipes (e.g., sewage flowing directly into a watercourse) in the Lower LaHave River area, MODL designated the area as a WMD (MODL, 2023). Through this WMD designation, property owners were able to apply for the replacement of their straight pipe with an appropriate on-site system designed and installed by the Municipality (MODL, 2023). Like in the Municipality of the County of Richmond's use of WMDs, MODL's program featured a two-thirds cost sharing model and sees MODL operating and managing the system for the first seven years (MODL, 2023).

That WMDs are mainly used in cases where private on-site systems are failing rather than for the facilitation and encouragement of denser development patterns can be in part explained by the Province's broader stance on infrastructure. In the *Statement of Provincial Interest Regarding Infrastructure*, it is asserted that WMDs and cluster systems should be considered "where on-site disposal systems are experiencing problems (Nova Scotia, 2023e)". In the case of WMDs, this statement aligns with how they have been applied in the Province to date. That WMDs serviced by cluster systems could help the Province to ensure that development occurs more efficiently is not acknowledged. A reassessment of the Province's framing of WMDs and cluster systems as solutions to failing systems rather than as tools to foster efficient land uses could serve to broaden the applicability of these two approaches. Nonetheless, any municipality seeking to use WMDs and cluster systems to achieve denser and more efficient development patterns would be able to do so under current regulatory frameworks, which, in unserved areas facing development pressure like Mount Uniacke, should be explored for implementation.

Discussion

- 49 Enabling and Encouraging Cluster Septic Systems
- 50 Municipal Ownership & Management
- 51 Expanding the Study

Discussion

This project's findings have demonstrated a clear need for alternative development patterns in the Mount Uniacke GMA. Recent growth has predominantly come in the form of single-detached homes on large lots, which dominate the local housing stock. As a result, housing options are very limited – a reality that poses numerous challenges given that Mount Uniacke can be expected to continue growing due to:

- » the geographic location;
- » the growth that is occurring in the neighbouring HRM and Nova Scotia;
- » the large amount of developable land.

To accommodate population growth for a variety of household sizes, ages, and income levels, Mount Uniacke will require a greater variety of dwelling types, as well as increased commercial, recreational and institutional development.

Current growth policies and zoning regulations that apply to the GMA are limited in their ability to foster development patterns supportive of a diverse population, in large part due to the GMA being unserved. A possible solution to this limitation is enabling and encouraging cluster septic systems. The use of cluster systems to service new subdivisions and development could allow for the greater density and diversity of housing types needed. While limited in application, avenues for using cluster systems for the purpose of supporting non-traditional development patterns in rural Nova Scotia are available. As such, enabling and encouraging the use of cluster septic systems should be considered.

Enabling and Encouraging Cluster Septic Systems

Were the Municipality to develop policy and land use regulations aimed at enabling and encouraging the use of cluster septic systems, several considerations need to be made. In terms of developing standards for the construction of cluster systems, the most suitable approach for the Municipality would be to allow for any cluster system approved by Nova Scotia's Department of Environment to be built. The development of an internal guide and/or standards would likely be lengthy and costly, particularly when considering that cluster systems are explicitly omitted from Nova Scotia's *On-Site Sewage Disposal Systems Standard* (Nova Scotia, 2022c).

The Municipality will also need to consider where it wants to direct the use of cluster systems in Mount Uniacke. The existing Village Core zone along the Evangeline Trail may not be appropriate for the use of cluster systems – particularly in cases of mid- to large-scale subdivisions. As such, the Municipality may need to develop policy and zoning regulations stipulating where subdivisions serviced by cluster systems are most appropriate. This action could allow the Municipality to play a more direct role in dictating where growth occurs.

The development of policy and regulations related to minimum lot sizes and dwelling types will also require

consideration. The minimum lot size that is set for lots containing structures serviced by cluster systems will need to be set in consideration of local ground and soil conditions – which there is currently a lack of information on. Whether the Municipality conducts further research on ground and soil conditions to set this minimum lot size in a land use by-law or proceeds on a case-by-case basis based on development interest will need to be determined. When considering residential dwelling types, the Municipality should seek to create policy encouraging smaller single detached homes, townhouses, and small (4 – 8-unit) multiplexes on lots and subdivisions serviced by cluster systems.

Municipal Ownership & Management

Whether the Municipality wants to enact a Wastewater Management District (WMD) by-law for the purpose of achieving a greater diversity in residential dwelling types also needs to be considered. If the Municipality uses a WMD by-law to assume responsibility for operating and maintaining cluster systems after they have been installed, it would be taking a more direct role in determining how development occurs. Through a WMD by-law, the Municipality could actively seek out opportunities with developers to build compact, diverse, and mixed-used developments serviced by cluster systems – particularly through larger-scale subdivisions. In such cases, policy stating that the Municipality will utilize the Rural Comprehensive Development District designation to collaborate on subdivisions to be serviced by municipally operated cluster systems could be useful.

While this approach to WMDs is uncommon in Nova Scotia, utilizing it as such could position East Hants as a leader and innovator in developing on unserved lands in the Province. A prudent course of action with regards to WMD by-laws would be to first explore their use through a collaborative pilot project on a single site with both a private developer and the Province. Given recent growth trends and the Province’s position on growth, there is a strong possibility that the Province may have interest in collaborating with the Municipality on a pilot wherein WMDs are reconceptualized to better accommodate growth in unserved areas. Through provincial support and subsidy, the level of risk could be mitigated for both the Municipality and the developer. Further, this pilot would allow the opportunity for East Hants to better understand the fiscal capacity and staffing levels required to own and manage cluster systems.

Were this pilot to be successful, both East Hants and the Province would reap significant benefits. Land could be developed more efficiently in East Hants, in turn allowing for a higher number and greater diversity of residential dwelling types. This would serve to generate increased property tax revenue while also providing the much-needed dwelling types currently unavailable in Mount Uniacke. For the Province, the success of this pilot could have greater implications for managing growth. Given that 45% of the Province currently relies on private on-site sewage disposal systems (Nova Scotia, 2023d), innovative servicing techniques will likely need to be explored if the Province wants to achieve its growth goals by 2060 (Houston, 2021). If the use of cluster septic systems under a municipally owned and provincially supported model is determined to be successful, this model could be expanded throughout other unserved areas to support future growth.

The development of a pilot does not mean that cluster systems should not be enabled and encouraged from the beginning stages of the development of Mount Uniacke’s secondary planning strategy. Cluster systems

should be enabled and encouraged in cases of private construction and management, with policy indicating that the Municipality will play a supportive role in allowing developments serviced by cluster systems to occur. However, a municipal commitment to managing and owning cluster systems through a WMD-style by-law should not be made before either (a) a pilot project is explored, or (b) internal management capacity and long-term infrastructure goals for Mount Uniacke are determined.

Expanding the Study

To ensure that cluster septic systems are a suitable servicing option for Mount Uniacke, the Municipality will likely need to commission further research into ground and soil conditions. If there are specific areas where bedrock or other ground conditions would make the installation of a cluster system unfeasible, the Municipality would benefit and could direct growth elsewhere in within the GMA.

Further, the Municipality will likely need to conduct an internal analysis into its capacity to own and manage cluster septic systems. Here, a model(s) could be developed to better understand the costs of owning and managing cluster systems. Anticipated yearly ‘user fees’ for property owners connected to a municipally operated and owned system must be identified and set with consideration to the costs of owning and maintaining a private on-site system. A capacity model should also consider that through the widespread use of cluster systems, Mount Uniacke could, in the long term, be in a much better position to be connected to a centralized water and wastewater system. If extending central services to Mount Uniacke remains a broader municipal goal, the initial costs incurred for the management and maintenance of cluster septic systems can be further justified.

Recommendations

Recommendations

Recommendation #1: Enable and encourage the use of cluster septic systems in a secondary planning strategy for Mount Uniacke. Action items include:

- a. Define cluster septic systems in the secondary planning strategy and relevant land use by-law;
- b. Develop policy establishing that private developers are responsible for the construction of cluster septic systems;
- c. Develop policy establishing that cluster septic systems are to be approved by Nova Scotia's Department of Environment;
- d. Develop policy statements in the secondary planning strategy asserting that cluster septic systems are enabled to counteract sprawl, use land more efficiently, and allow for diverse housing types;
- e. Set new minimum lot size requirements in the relevant land use by-law for structures occurring on lots connected to cluster septic systems;
- f. Develop policies and zoning regulations that direct mid- to large-scale developments serviced by cluster septic systems to lands deemed most suitable.

Recommendation #2: Expand the growth management study. Action items include:

- a. Commission a study into land and soil conditions in the Mount Uniacke GMA;
- b. Conduct an internal investigation into the Municipality's capacity to own, manage, and maintain cluster septic systems.

Recommendation #3: Explore Provincial interest in collaborative pilot project wherein the Municipality owns and manages a cluster system through a Wastewater Management District by-law for the purpose of fostering non-traditional development patterns in an unserved area. Action items include:

- a. Draft a memorandum to the Province that (1) explains the Municipality's interest in owning and managing cluster septic systems for the purpose of integrating new growth, (2) highlights the potential benefits the Province could derive from participating in the pilot, and (3) provides a conceptual framework for a pilot project.
- b. Begin a dialogue with the Province for updating current infrastructure policy and technical guidelines/requirements as they relate to cluster systems to better support growth in unserved areas.

Conclusion

55 Project Limitations

55 Conclusion

Conclusion

Project Limitations

While this project has resulted in a series of recommendations for how future growth in Mount Uniacke can be managed, it is important to acknowledge its limitations. These limitations are listed below:

1. This project serves as a preliminary study on growth management in Mount Uniacke. As reflected in the recommendations provided, there is a need for expanded secondary analysis on a variety of associated subject areas. This preliminary study should be supported by further technical studies as well as an internal investigation into East Hants' capacity to own and manage cluster septic systems.
2. While this report was developed with a wide range of skillsets, the project team lacked knowledge and experience related to the technical/engineering aspects of wastewater management systems. While steps were taken to mitigate this lack of knowledge, there is still a need for the recommendations made through this project to be further developed in consultation with engineering/public works professionals.
3. Due to timing constraints, there was a lack of engagement with representatives from East Hants' Infrastructure & Operations department. Through engagement with these representatives, a clearer picture of the Municipality's capacity or willingness to implement and manage new servicing systems (e.g., cluster septic systems) could be highlighted.
4. While engagement with local residents would have provided invaluable information about Mount Uniacke (e.g., character, community desires, challenges), timing constraints and the expectation that residents would be engaged with once the development of a secondary planning strategy was underway led to the decision to interview councillors and planners exclusively.
5. Finally, the data used for part of the demographic analysis may not be a fully accurate representation of the region. The census ADA and the GMA do not directly align thus there may be slight differences in the true population. Additionally, due to the small population the census sample size may distort or not fully represent certain factors in the area.

Conclusion

The findings made through this project demonstrated a clear need for alternative development patterns in Mount Uniacke. Population growth and development pressure can be expected to continue in Mount Uniacke, largely as a result of its geographic location and large amount of developable land. To accommodate population growth for a variety of household sizes, ages, and income levels, it is critical that the Municipality of East Hants begins planning to achieve development patterns in Mount Uniacke that better support higher levels of density, increasingly diverse housing types, and greater opportunities for commercial, recreational,

and institutional uses. To achieve these development patterns, the Municipality must consider enabling, encouraging, and (possibly) managing cluster septic systems as an alternative to private on-site systems. Without the introduction of alternative servicing systems, the level of density and diversity of land uses possible in Mount Uniacke will continue to be significantly limited.

The Municipality is in a unique position, in that by exploring the feasibility of alternative servicing systems, it could become a leader and innovator in developing on unserviced lands in the Province. As population growth continues to be experienced and welcomed in Nova Scotia, solutions to developing on unserviced lands will become increasingly sought after and valuable. As such, there is no better time than now for the Province and municipalities to begin the process of embracing change and developing solutions that will lead to efficient and sustainable growth.

References & Appendices

- 58 References
- 61 Appendix A: Interview Questions
- 62 Appendix B: Septic Field Lot Size Requirements
- 63 Appendix C: Project Fact Sheet

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Appendix A: Interview Questions

The following questions were asked at each interview conducted with East Hants' planning staff members and Mount Uniacke area councillors:

1. In broad terms, how would you characterize Mount Uniacke? What is unique about the community? (Possible prompts: housing types, local landmarks, bedroom community, etc.)
2. What shared values do residents in Mount Uniacke hold? (Possible prompts: love of the natural environment, friendly/tight-knit atmosphere, etc.)
3. Has Mount Uniacke experienced any notable changes over the past five years? If so, please describe the change, its causes, and impacts.
4. More recently, what changes have constituents/residents been calling for in the community? Is there anything specific they want to see built in the community?
5. Has there been more interest from developers to build in Mount Uniacke in recent years?
6. What, if anything, have you heard from constituents/residents with regards to Mount Uniacke turning into an area where development pressure/growth is expected in the immediate future?
7. In your opinion, what types of development should be prioritized in Mount Uniacke? (Possible follow-up question: Should denser developments/multi-units be considered, retail, commercial?)
8. What challenges could arise were densification to be sought in Mount Uniacke? (Possible prompts: ineffective zoning, public pushback/NIMBYism, etc.)
9. Are privately-owned clustered/shared water and wastewater systems common in the municipality? Are there any barriers to installing these types of systems?
10. Do you have any knowledge of the history of Mount Uniacke being designated as a Growth Management Area?
11. If so, do you believe that current policy related to growth management for Mount Uniacke is sufficient to guide future growth and development in the community?

As research continued, two additional questions were asked to some interviewees:

12. Is there a desired vision for Mount Uniacke's future?
13. Would there be a willingness or capacity to support the development of 'Wastewater Management Districts' in East Hants?

Appendix B: Septic Field Lot Size Requirements

The table below provides estimates for both (a) the minimum size that a single lot with buildings, structures, or dwellings serviced by a cluster system must be, and (b) the minimum size that the lot containing the cluster system disposal field must be in ‘condominium developments’ and ‘municipal developments’ in Nova Scotia.

The calculation undergirding this table is based on the provincial regulation stipulating that for the first 1,500 liters per day of design flow, single lots serviced by a cluster system are subject to the same minimum lot size requirements found in the *On-site Sewage Disposal Regulations* – meaning a minimum of 2,700 square meters per lot (Nova Scotia, 2018). As per Nova Scotia’s (2022c) *On-site Sewage Disposal Systems Standard*, an average daily flow of 1,500 liters per day is commensurate with a residential structure containing four bedrooms with high water use fixtures. For every additional 1500 liters of design flow (or part thereof), the minimum lot area must be increased by at least half of the original minimum lot requirements, here meaning 1,350 square meters (Nova Scotia, 2013). The lots in ‘condominium developments’ and ‘municipal developments’ containing the cluster system’s septic field are held to these same requirements (Nova Scotia, 2013), making the minimum lot sizes listed in table’s third and fourth columns applicable to these cases as well.

Basic formula = for every additional 1,500 liters of design flow, minimum lot size increases by 1,350 sq m.

# of bedrooms	# of liters per day of design flow	Minimum lot size, sq m	Minimum lot size, acres
4	1500	2700	0.67
6	2250	3375	0.83
8	3000	4050	1
10	3750	4725	1.17
20	7500	8100	2.00
30	11250	11475	2.84
40	15000	14850	3.67
50	18750	18225	4.51
100	37500	35100	8.68
120	45000	41850	10.35
140	52500	48600	12.02
160	60000	55350	13.69
180	67,500	62,100	15.36
200	75000	68850	17.03
234	87,750	80,325	19.87
250	93750	85725	21.21
300	112500	102600	25.38
350	131250	119475	29.56
400	150000	136350	33.73

The re-imagined subdivision in Figure 21 was estimated to contain 234 total bedrooms (16 from 1-bedroom apartments, 42 from town-houses, and 176 from single detached homes).



Appendix C: Project Fact Sheet

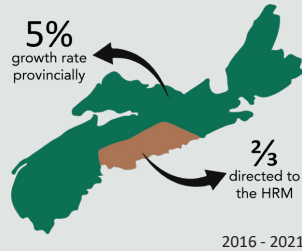
Project Overview Managing Future Growth in Mount Uniacke

Michael Bohdanowicz, Jacob Fenchak, John Gamey, Shaoqiu Gong, Ning Liang & Emily Paterson



Regional Context

Population growth is occurring throughout Nova Scotia, particularly in the HRM. This has implications for neighboring municipalities like East Hants.



Local Challenge

While designated as a “Growth Management Area”, Mount Uniacke is currently disconnected from municipal water and wastewater services. In recent years, population growth and development pressure has increased. Current growth policy and regulations may not be suitable to efficiently integrate this growth into the area. As such, new ways to manage growth in Mount Uniacke need to be considered.

Project Goal

The goal of this project was to provide the Municipality of East Hants with a series of recommendations for how future growth in Mount Uniacke can be managed.



Objectives

- 1 Identify drivers and barriers to growth in Mount Uniacke
- 2 Identify land use arrangements and associated policies that similarly situated municipalities have utilized to manage growth in unserved areas
- 3 Assess the suitability of new and existing policies to manage future growth in Mount Uniacke

Qualitative Approaches



Semi-Structured Interviews
Community/needs desires



Policy/Document Review
Opportunities/barriers to growth



Jurisdictional Scan
New land use/servicing options

Quantitative Approaches



Demographic Analysis
Population characteristics, housing typologies



Spatial Analysis
Suitability for growth, land use distributions



Growth Analysis
Growth trends, capacity for future growth

Findings: Challenges

- Insufficient housing stock for emerging needs
- Unable to retain certain sectors of the population (young adults, seniors)
- Current development patterns use land inefficiently
- Being unserved limits development potential
- Provincial servicing regulations do not intend to foster growth in unserved areas

Findings: Solutions

- Interest among area councillors/planners to amend policy to allow for greater diversity in residential dwellings, commercial/recreational uses
- Use of cluster septic systems as a tool to allow for desired/needed development types
- Potential to re-frame Province’s intent for ‘Wastewater Management District’ by-laws

Recommendations

- 1 Enable and encourage the use of cluster septic systems in a secondary planning strategy for Mount Uniacke
- 2 Expand the growth management study to (a) understand municipal capacity to own/manage cluster systems, (b) determine land suitability
- 3 Inquire whether the Province is interested in working as a partner in a pilot project where the municipality owns and manages a cluster system through a WMD by-law to foster growth in unserved lands