

Sustainable Halton



Explaining Density

November 2007



HEMSON
Consulting Ltd.

EXECUTIVE SUMMARY

This report is one of a series that are being prepared for the Region of Halton as part of *The Sustainable Halton Plan*. Its purpose is to discuss how land use planning can influence the density of development and to evaluate some options available to the Region and its local municipalities to change densities.

CONTEXT

Density targets are established by the Provincial *Growth Plan for the Greater Golden Horseshoe* to which the Region and its municipalities must conform. Of particular importance to the *Sustainable Halton* process is the minimum combined density target of 50 people and jobs per hectare for development in greenfield areas.

The density of recently constructed and proposed residential development in Halton by itself exceeds the combined *Growth Plan* target. However, the residential densities in these communities are likely not high enough to offset the low densities that will almost certainly arise on greenfield areas set aside for employment activities, retail uses, and public open space.

FINDINGS

The main findings of the report are as follows:

- a. The range of density options available in Halton is to some extent a function of existing Provincial legislation and standards established by agencies outside municipal government control.
- b. With respect to local planning policy, the requirements of the *Growth Plan*, in addition to overriding the density provisions in local official plans, are much more restrictive than any of the local plans.
- c. The *Growth Plan* sets a *combined* gross density measure of people and jobs per hectare on greenfield development. By this measure, overall densities of existing and proposed communities in the Region fall short of the required density target.
- d. Achieving the target on future greenfield development in Halton is possible without radical change to local planning policies. However, because of the wide variety of land uses in the Region, achieving the targets likely requires that densities of *all* land uses in Halton be modified.

OPTIONS

When evaluating density options it is important to distinguish between density as a measure and perceptions of density. The former is critical when planning for future servicing and infrastructure. However, perceptions of density will greatly affect the ability of an area to attract new residents and industries irrespective of the actual

density of the area. Density options for the following land use types have been considered:

Residential:

Residential densities in newer communities in Halton generally exceed the combined *Growth Plan* density target. However, these densities are likely not high enough to offset the low densities that will almost certainly arise on designated greenfield areas set aside for employment land, retail uses, and public open space. To achieve the *Growth Plan* density targets a shift to higher density residential development is therefore likely required.

The only way to achieve higher residential densities for new housing in Halton is either to change the built form (to more row housing or cluster housing for example) or to change the characteristics within the built form (by changing parking allocations for example).

Employment Land:

Employment land densities in the Region are relatively low and changes to the design and function of Halton's employment land should be encouraged. However, the ability to increase densities on employment land through municipal planning policy is restricted.

Should the Region be able to redirect office development to employment areas this would increase densities but this would run contrary to other *Growth Plan* policies which seek to encourage office development in transit oriented nodes.

Retail:

Increasing densities on land used for large scale retail is largely a function of reducing the area set aside for parking. That said, construction of underground parking facilities or of multi-storey lots may be prohibitively expensive for many retail developers and any extra building costs will almost certainly be passed on to consumers.

A reduction in large scale retail land uses and a corresponding increase in smaller more localized retail outlets can be encouraged through land use planning policies and may increase densities if accompanied by a shift away from use of the car for shopping.

Mixed Use:

The concept of mixed-use development has only been applied in a significant way to combining residential and some commercial uses which do not account for the majority of the overall land use in the Region. In order to substantially increase densities in Halton the mixed-use concept needs to be applied across the full range of land uses in the Region.

Public Space:

Most of the lands required for institutional and public spaces are set in accordance with regulatory and public standards that establish road rights-of-way, school site sizes, stormwater management procedures and environmental standards. It is therefore difficult to change the use of these lands, by mixing school and parkland uses for example, through land use planning. That said, an investigation into the use of public space may reveal opportunities for using this space more efficiently and thereby increasing densities.

Transportation Uses:

Increasing the density of an area, whether it reduces the amount of road traffic or not, has little effect on the amount of roads in the area. Indeed, with increasing net residential density the proportion of land required for roads usually increases.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	<i>i</i>
I INTRODUCTION	1
II GROWTH PLAN IMPOSES DENSITY TARGETS ON NEW DEVELOPMENT	2
A. Growth Plan Requires Minimum Density of 50 People and Jobs per Hectare on Greenfield	2
B. Density Target For Three Urban Growth Centres in Halton Is 200 People and Jobs per Hectare.....	3
C. Other Legislation Influences Density but Growth Plan Drives Future Planning Policy in Halton.....	4
III CURRENT DENSITIES IN HALTON	5
A. Density Is a Relative Measure.....	5
B. How Land Is Used in Halton.....	6
C. Overall Densities in Recent and Proposed Greenfield Areas in Halton Fall Short of the Growth Plan Combined Density Target.....	11
IV ACHIEVING DENSITY TARGETS MEANS EXAMINING DENSITIES FOR ALL LAND USES IN HALTON	16
A. There Are Limitations To How Land Use Planning Can Influence Densities.....	16
B. Growth Plan Density Targets and Market Forces Can be Compatible...17	
C. If Densities Are to Rise Region Needs to Explore Higher Density Options for All Land Uses.....	18
D. Conclusion	23
APPENDIX 1	24

LIST OF FIGURES

1. Current Distribution of Land Use, Region of Halton – Total Land Area
- 2A. Current Distribution of Land Use, Region of Halton – Total Urban Area
- 2B. Current Distribution of Land Use, Region of Halton – Municipal Urban Areas

LIST OF TABLES

1. Urban Residential Densities, Region of Halton, 2006
2. Urban Employment Densities, Region of Halton, 2006
3. Combined Population and Employment Densities as per *Growth Plan*, New Urban Areas, Region of Halton

I INTRODUCTION

In June of 2006 the Province of Ontario released the *Growth Plan for the Greater Golden Horseshoe*. The *Growth Plan* provides a framework for implementing the Provincial vision for managing growth in the Greater Golden Horseshoe (GGH) to 2031. It also sets out Provincial interests and directions on many issues including: the distribution of population and employment growth; where and how that growth will be accommodated; infrastructure requirements; and the protection of key heritage and natural resources.

Municipal official plans are required to conform to the *Growth Plan* within three years of its final release, as stipulated in both the *Greenbelt Act (2005)* and the *Places to Grow Act (2005)*. In response, the Region of Halton has initiated *The Sustainable Halton Plan*. Building upon the updated *Regional Official Plan, Sustainable Halton* is to be Halton's long-term growth management strategy to address the forecast growth in the Region — a near-doubling of existing population and employment by 2031.

This report is one of a series that are being prepared as part of *Sustainable Halton*. Its purpose is to define the range of density options available to the Region and the local municipalities in Halton and to evaluate the advantages and disadvantages of different options. The report is divided into three sections:

- a) The first section summarizes the density targets established by the *Growth Plan*.
- b) In the second section, the pattern of land use and density in older, newer, and proposed communities in the Region is discussed. Population and employment densities across the Region are measured against the *Growth Plan* density targets.
- c) Section three outlines the range of options available to the Region for achieving the *Growth Plan* targets.

The report concludes that the density targets set out in the *Growth Plan* can be achieved in Halton provided that changes to land use planning policy and, to a lesser extent, patterns of settlement are made. What changes are required and desirable can only be determined with an appreciation of the current pattern of land use in the Region and an understanding that there are factors that influence density that are difficult, if not impossible, to change through land use planning. Within this framework, a range of density options is available for all land use types in Halton: residential, employment, retail, mixed-use, institutional and public space.

II GROWTH PLAN IMPOSES DENSITY TARGETS ON NEW DEVELOPMENT

The *Growth Plan* establishes clear planning objectives for development in the Greater Golden Horseshoe: more compact, mixed-use communities that support public transit. As density is a key input when planning future land use the intensification and density targets set out in the Plan are critical to achieving these objectives. Municipalities must conform to these targets.

The main focus of this report is on that portion of growth in Halton that will occur on greenfield, that is undeveloped areas that have either already been designated by the Region for new development or areas in the Primary Study Area which may be designated in the future. The *Growth Plan* limits residential development in these areas to 60 per cent of the total residential growth in the Region. The remaining 40 per cent of residential growth must be accommodated through intensification of existing built-up areas. This intensification target, and its effect on the *Sustainable Halton* process, is discussed at length in a companion Intensification Report.

With respect to density, the *Growth Plan* imposes two targets: one for greenfield areas and one for established urban centers. The density targets, and their implications for planning in the Region, are described below.

A. GROWTH PLAN REQUIRES MINIMUM DENSITY OF 50 PEOPLE AND JOBS PER HECTARE ON GREENFIELD

New development on “designated greenfield areas”, i.e. lands not currently urbanized but designated for future urban development, is required to achieve “complete communities” under the *Growth Plan*. This means that these communities must support walking, cycling, and transit, and provide public open space that supports these activities. They must also provide for mixed-use development (residential and employment).

In order to achieve complete communities the *Growth Plan* imposes a density target on greenfield development. The *Growth Plan* defines density as a “concentration of residents and jobs over a particular land area (in hectares)”. The minimum density target for greenfield areas in Halton is a combination of 50 people and jobs per hectare across the Region’s designated greenfield area excluding environmentally protected areas (which are defined in the *Growth Plan*). Municipalities in Halton thus need to calculate the area of these protected areas in order to determine whether the greenfield density target is being met.

In jurisdictions like Halton, which have a two-tier municipal governance structure, the *Growth Plan* prescribes that the upper-tier municipality identify density targets for the designated greenfield areas of the local municipalities so that the overall density

target for the Region can be achieved. This is to be undertaken in consultation with the local municipalities and it forms part of the *Sustainable Halton* process. In addition, both the Region and the local municipalities have to develop and implement official plan policies for greenfield areas that are consistent with the targets.

The number of residents and jobs per hectare will be measured using census data as the base and any other data that can be used to supplement the census. The Province will monitor the Region's conformity to the density targets though the *Growth Plan* does not contain provisions should the Region fail to meet the targets.¹

B. DENSITY TARGET FOR THREE URBAN GROWTH CENTRES IN HALTON IS 200 PEOPLE AND JOBS PER HECTARE

The *Growth Plan* identifies three “urban growth centres” in Halton: Downtown Burlington, Midtown Oakville, and Downtown Milton. It is intended that these centres be the focus of new growth and infrastructure investment. The density target for these areas is a combination of 200 people and jobs per hectare.

The density target for the urban growth centres is a minimum rather than an absolute target. Thus the Region's municipalities may set higher targets for these areas if they wish though no higher targets are currently in place in Halton.

There is still some minor uncertainty in the new rules particularly with respect to how density is to be measured. For example, the built boundaries that are used to define the designated greenfield areas have yet to be established (though they are under discussion as part of *Sustainable Halton*). Moreover, of the three urban growth centres in Halton, only Downtown Burlington has been defined to date. Measuring

the density of Midtown Oakville and Downtown Milton is not therefore possible until the boundaries of these urban growth centres has been established and planning is more advanced. Accordingly, the main focus of this report is on the density options for planned and future development on the Region's greenfield lands.

C. OTHER LEGISLATION INFLUENCES DENSITY BUT GROWTH PLAN DRIVES FUTURE PLANNING POLICY IN HALTON

Although the *Growth Plan* is new there are controls already built into the land use planning process that affect density patterns. These include other statutes, regulations and public standards such as the *Planning Act*, Provincial Policy Statements, official plans and secondary plans, zoning by-laws, and property

¹ Municipalities do not have to change their official plan policies in time for the release of 2006 census data. The 2011 census will therefore likely be the first opportunity to assess the extent to which municipalities are meeting the Growth Plan density targets.

standards by-laws. Rules affecting density are also imposed through the building regulatory system by a large body of legislation such as the *Building Code Act*, the *Fire Code Act*, and the *Heritage Act*. For example, separation distances between buildings are regulated for fire safety. Minimum distance separations are also prescribed for habitable room windows. The range of density choices available in Halton is therefore to some extent a function of existing Provincial legislation and standards established by agencies outside municipal government control.

The requirements of the *Growth Plan*, in addition to overriding the density provisions in local official plans, are much more restrictive than any of the local plans. Thus, notwithstanding other legislation, it is the *Growth Plan* that will drive future planning policy in Halton with respect to density.

Such are the density targets of the *Growth Plan* and the legislative context in which they have been imposed. In the next section of the report, the pattern of land use and density in older, newer and proposed communities in the Region is discussed.

III CURRENT DENSITIES IN HALTON

The *Growth Plan* establishes a high level gross density measure and thus provides municipalities with considerable discretion as to how land within their jurisdictions is to be used. Gross residential densities in older communities in Halton and gross employment densities throughout the Region are lower than the *Growth Plan's* density targets. In contrast, new residential communities being planned or built in the Region exceed the targets by a considerable margin.

It must be reiterated, however, that the *Growth Plan* sets a *combined* gross density measure of people and jobs per hectare. By this measure, proposed greenfield development in Halton falls just short of the required density target. Achieving the target on future greenfield development in Halton is possible without radical change to local planning policies. However, because of the wide variety of land uses in the Region, achieving the targets likely requires that densities of all land uses in Halton be modified.

A. DENSITY IS A RELATIVE MEASURE

There is no standard method for measuring density. "Gross densities" such as the total population of a given area divided by the total amount of land are simple to calculate but useful only in that they indicate orders of magnitude. Thus while the gross population densities of Canada and the United States (approximately 0.03 people per ha and 0.31 people per ha respectively) might suggest that Canadians have more space at their disposal they say little about the dramatically different topography and distribution of population within these two countries. The gross density of the urbanized Toronto Central Metropolitan Area (CMA) is approximately

25 people per ha, the highest urban density in North America, yet this figure gives little indication of the wide range of densities within the Greater Toronto and Hamilton Area (GTAH), particularly in the Region of Halton.

In land use planning the land area often used as the basis for calculating gross densities is the total area of a given jurisdiction excluding land that cannot be developed, such as natural features or hydro corridors. Only measuring developable land allows gross densities to be compared across jurisdictions for planning purposes. In this respect, the density measure set in the *Growth Plan* is a gross measure though, as we have seen, it has its own definition: a combination of people and jobs over the entire land area net of environmentally protected areas for greenfield; and a combination of people and jobs over the entire land area in the urban growth centres.

The density measure more commonly used in land use planning is *net density*, that is the number of people, houses, or jobs in an area *net* of any land that is not for private use. The definition of net density varies slightly from jurisdiction to jurisdiction, even amongst the official plans currently in place in Halton. However, the land to be excluded to calculate net density usually encompasses roads, parks, stormwater management ponds and other localized public services and infrastructure. These are in addition to the exclusions for natural features and other undevelopable lands such as hydro corridors.

The Province has chosen a high level gross density measure for the *Growth Plan* that is to be applied across the GTAH. Applying a single standard to such a wide range of jurisdictions is problematic because the land use in these jurisdictions differs greatly from place to place, and is often (particularly on land used for employment activities) not subject to municipal land use regulations. For example, if the Primary Study Area in Milton were to be designated as greenfield and developed the large hydro corridors and the Trafalgar Station in the area (both of which service much of the GTAH) as well as the Region's landfill site and CN's proposed intermodal terminal would have to be incorporated into the *Growth Plan* density calculation. These areas contain very important land uses. However, they all have extremely low densities. It would be highly unlikely that the remaining urban development in this area could develop at a density sufficient to compensate for these low employment density areas.

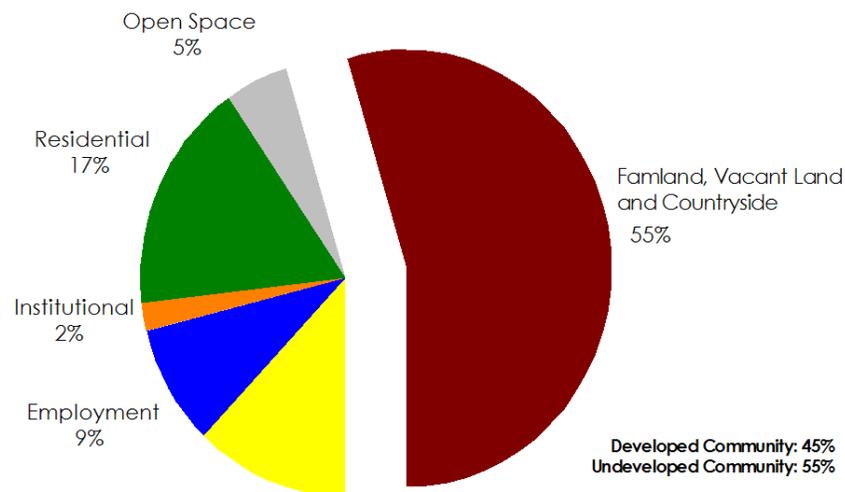
B. HOW LAND IS USED IN HALTON

The *Growth Plan* employs a gross density measure. Thus, municipalities in Halton have considerable discretion as to how greenfield land and urban growth centres within their jurisdictions are to be developed. The range of density choices in Halton can only be determined with an appreciation of how land is currently used in the Region.

The current land use in Halton is shown in Exhibit 1 below. The exhibit shows that of the total land area in the Region, approximately 97,280 hectares, the majority of land (55%) is undeveloped: it is either farmland, rural or urban vacant land, or countryside. Of the developed land (45%), less than half is privately owned residential land (that is lots). The majority of the developed land is used for employment purposes (commercial and industrial), as designated open space, for institutions, and to accommodate the road network and utilities infrastructure.¹

**CURRENT DISTRIBUTION OF LAND USE
REGION OF HALTON - TOTAL LAND AREA**

Exhibit 1



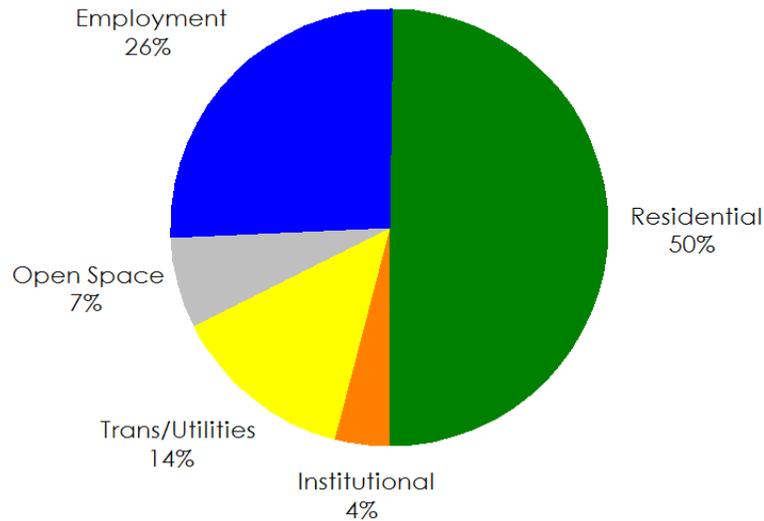
It is important to note that the developed community identified in Exhibit 1 includes development in rural areas, such as campgrounds, golf courses and isolated houses. For the purposes of determining densities, especially with reference to the *Growth Plan* greenfield density target, a sense of how the urbanized areas throughout the Region are organized is of much greater relevance.

¹ Land use definitions in the exhibits are used for the purposes of this report only. Residential land is the net residential land or the privately owned land area (i.e. a house lot or the land containing a plan of condominium). Open space is within the urbanized area and comprises mainly public parks. Most environmental areas would be included in the lands in the undeveloped community. Institutional uses are primarily schools, other educational facilities, places of worship, hospitals and cemeteries. Employment is all other employment uses including business parks and industrial areas, and retail and services uses. In other Sustainable Halton reports (as well as Provincial planning documents), the expression “employment areas” or “employment lands” is typically restricted to the business park and industrial areas. Transportation and utilities includes all local and arterial roads, highways, hydro, stormwater management, municipal utilities and pipeline rights-of-way.

For this reason, Exhibits 2a and 2b show the distribution of land uses in urban areas in the Region and in each of Halton's four local municipalities. Developed land

CURRENT DISTRIBUTION OF LAND USE REGION OF HALTON - TOTAL URBAN AREAS

Exhibit 2A



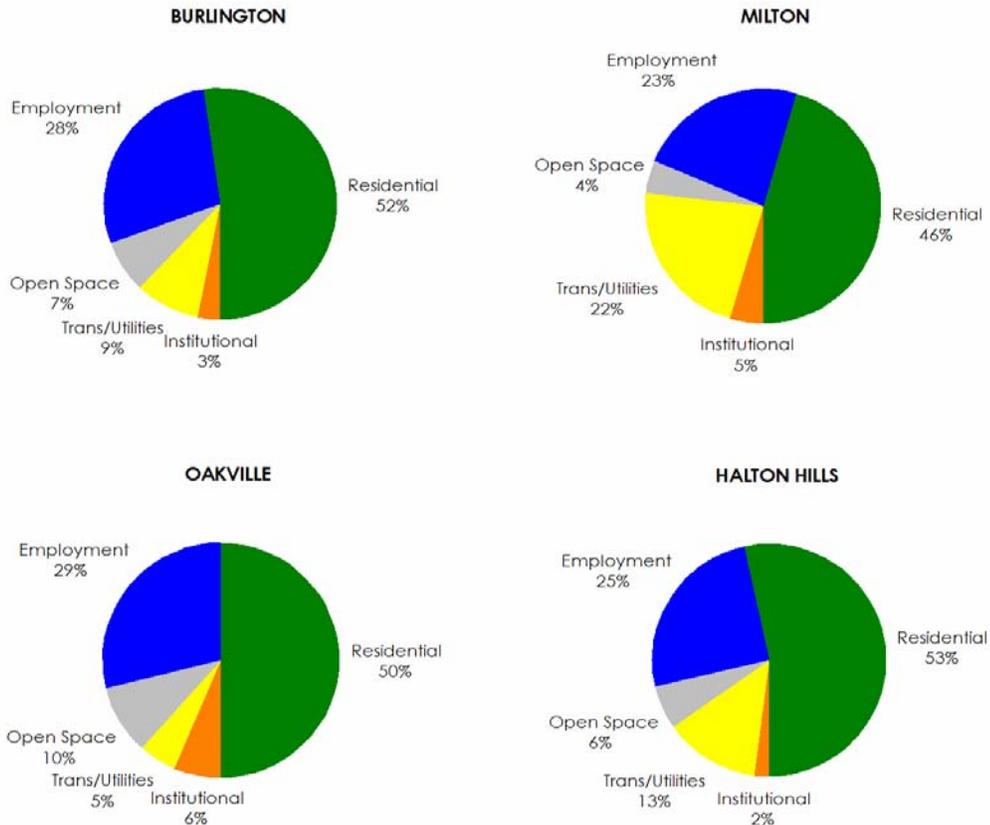
Source: Region of Halton Planning Department and Hemson Consulting Ltd.

outside the urban areas and all undeveloped land (both rural and urban) are now excluded from consideration. Exhibit 2a shows that of the entire urban land area in the Region approximately 50% is used as privately owned residential land. Another 26% is used to support commercial and industrial employment activities in areas set aside for employment (that is in business parks) as well as in residential areas. A range of public and institutional uses comprise the remaining 24% of the total urban land area.

Exhibit 2b illustrates the distribution of land use in the urban areas of each of the Region's four local municipalities. The exhibit shows that, with few exceptions, the pattern of urban land use changes little over the Region. Halton Hills has the highest proportion of urban land (53%) dedicated to residential use. In Milton, only 46% of the total land area is residential. The proportion of land used for employment ranges from a low of 23% in Milton to a high of 29% in Oakville. Of the remaining land uses, Milton has the highest share of roads and utilities (22%) and Oakville has the highest share of both institutional uses (6%) and parks and other open space (10%). Milton's share of land used for transportation and utilities stands out as it is much greater than the shares of this land use type in the other municipalities.

CURRENT DISTRIBUTION OF LAND USE URBAN AREAS - REGION OF HALTON

Exhibit 2B



Source: Region of Halton Planning Department and Hemson Consulting Ltd.

It should be noted that the *Growth Plan's* density target will only apply on future designated greenfield area which falls into the “undeveloped” area in Exhibit 1. It is likely that the distribution of land uses on this future greenfield will remain the same as the existing pattern. After all, new houses and businesses will still need roads and other public infrastructure. A significant portion of future greenfield will therefore not be made up of privately owned residential, commercial, and industrial buildings. For this reason, the full range of land uses on these lands must be examined when planning future densities.

C. OVERALL DENSITIES ON RECENT AND PROPOSED GREENFIELD AREAS IN HALTON FALL SHORT OF THE GROWTH PLAN COMBINED DENSITY TARGET

Currently, the majority of developed land in Halton (76%) is for private use and comprises residential units and their associated land as well as a range of commercial and industrial uses. The tables that follow compare the *Growth Plan*

greenfield density target to net and gross residential, employment, and combined residential and employment densities across the Region.

It must be stressed that existing communities in Halton were built and have evolved often under different planning standards and designs than those which are envisaged by the *Growth Plan*. What follows is a quantitative comparison of older, newer, and proposed communities in the Region. The comparison is in no way meant as a value judgement on past planning practice or the quality of life in current communities in Halton.

1. Gross Residential Densities On Recent And Proposed Greenfield Development In Halton Exceed 50 Persons Per Hectare

Table 1 displays current net residential densities as well as gross residential densities as determined by the *Growth Plan* in communities across the Region.

Table 1 – Urban Residential Densities — Region of Halton, 2006					
	Net Housing Density (units/ha)	Estimated Persons Per Unit (PPU)	Net Population Density (persons/ha)	Gross Population Density (persons/ha)	Population Density as Per Growth Plan (persons/ha)
Halton Hills (Georgetown)	23	2.8	64	45	36
Old Milton	14	2.8	39	27	22
Milton HUSP	35	3.1	109	76	61
Oakville	19	2.8	53	37	30
North Oakville (proposed)	41	2.6	107	75	60
Burlington	24	2.5	60	42	34

Sources: Net Housing Density for Old Milton based on Community Density Study, Hemson Consulting Ltd. For Halton Hills, Oakville and Burlington based on Regional GIS measurements of residential area and unit supply information from witness statement of Russell Mathew, ROPA 25. Milton HUSP based on witness statement of Russell Mathew, ROPA 25. North Oakville based on most recent estimates from North Oakville Secondary Plan.

Estimated PPU based on "Household Size by Unit Type by Period of Construction", Statistics Canada, 2001 Census Special Run. North Oakville estimated PPU based on most recent estimates in North Oakville Secondary Plan area at mature development.

Net Population Densities are the product of the Net Housing Densities and the Estimated PPUs, with the exception of North Oakville, which is based on most recent estimates of North Oakville Secondary Plan.

Gross Population Densities are derived from the Net Population Densities, using a net-to-gross ratio of 70%. This is slightly different from typical net-to-gross residential calculations. It accounts for roads, parks and utilities, but does not account for land uses within residential areas which accommodate employment, namely schools, places of worship and local retail. These uses are accounted for in the employment density calculations.

Population Densities as Per Growth Plan are determined by applying a factor of 80% to Gross Population Density to account for arterial road networks and utilities.

Note: North Oakville numbers are based on the North Oakville area at ultimate build-out. Milton HUSP numbers are based on what has been completed to date, which includes most of the Phase 1 (Bristol) area.

Table 1 demonstrates that in the older established communities in the Region – Georgetown, Old Milton, Oakville, and Burlington – the gross residential densities, which range between 22 persons per gross ha in Old Milton and 36 persons per gross ha in Georgetown, are lower than the *Growth Plan's* combined 50 persons and jobs per ha density target. In contrast, in recently constructed areas in Milton and in the proposed community in North Oakville the residential densities, 61 and 60 persons per ha respectively, exceed the *Growth Plan* target by a considerable margin.

2. Gross Employment Densities In Halton Are Much Lower Than 50 Jobs Per Hectare

Current employment densities across the Region are displayed in Table 2 below.

Table 2 – Urban Employment Densities — Region of Halton, 2006 (includes all employment types: business parks, retail, and institutional throughout entire urban area)					
	Total Employment	Developed Urban Employment Land (ha)	Net Employment Density (jobs/ha)	Gross Employment Density (jobs/ha)	Gross Employment Density as Per Growth Plan (jobs/ha)
Burlington	84,800	1,840	46	37	29
Oakville	86,600	2,270	38	31	24
Milton	30,700	920	33	27	21
Halton Hills	20,200	450	45	36	29
Total Region	222,300	5,480	41	32	26

Source: In this table employment is defined as all lands used for employment activities including industrial, commercial, service, retail and institutional activities. Thus it includes lands in residential areas which are used for local retail, places of worship and elementary school functions and which would usually be included in a calculation of gross residential density.

Notes: Total Employment based on Region's 'Best Planning Estimates' as of October, 2006.

Developed Urban Employment Related Land based on Region's GIS land area measurements.

Net Employment Densities are ratios of Total Employment and Developed Urban Employment Land.

Gross Employment Densities are determined by applying a factor of 80% to Net Employment Densities to account for local road networks and stormwater management ponds and other local utilities.

Gross Employment Densities as Per Growth Plan are determined by applying a factor of 80% to Gross Employment Density to account for arterial road networks and utilities.

The table demonstrates that, while most of the land used for employment activities and most of the jobs in the Region are to be found in Oakville and Burlington, the employment densities across the Region are fairly uniform. They range from a high of 46 jobs per net ha in Burlington to a low of 33 jobs per net ha in Milton. The gross employment densities throughout the Region, ranging from 29 jobs per ha in Oakville and Burlington to 21 jobs per ha in Milton, fall well below the *Growth Plan* combined density target of 50 people and jobs per ha.

3. Combined Density Of People And Jobs Per Hectare On Greenfield Development In Halton Does Not Achieve Growth Plan Target

Though the density of recently constructed and proposed residential development in the Region exceeds the *Growth Plan* target it must be stressed that the *Growth Plan* sets a *combined* gross density measure of people and jobs per hectare. Table 3 below calculates the combined gross density as per the *Growth Plan* for the designated greenfield areas of the recently constructed Milton HUSP and the proposed North Oakville communities.

Table 3 – Combined Population and Employment Densities As Per Growth Plan — New Urban Areas, Region of Halton				
	Ultimate Population Potential	Ultimate Employment Potential	Land Area as Per Growth Plan	Density as Per Growth Plan
North Oakville	54,200	34,700	2,123	42
Milton HUSP	133,000	53,900	3,800	49

Source: Ultimate population and employment potential for North Oakville based on the mature state population and employment under the most recent version of the *North Oakville Secondary Plan* for the forthcoming Ontario Municipal Board hearing. Milton HUSP area based on forecast ultimate unit potential as stated in the *Sustainable Halton* report *Land Supply Analysis* with an estimated population per unit of 2.9.

To approximate the *Growth Plan* density definition, land area for North Oakville and Milton HUSP is total gross land areas less the planned natural heritage systems.

Table 3 shows that, by the *Growth Plan* measure, the densities of new urban areas in Halton fall just short of the required greenfield density target by approximately 8 people and jobs per hectare in the proposed North Oakville community and by approximately 1 person or job per hectare in the Milton HUSP area.

The combined densities of the Milton HUSP and North Oakville communities come very close to the *Growth Plan* density target. Therefore, achieving the target on future greenfield development in Halton is possible without radical change to local planning policies. However, because of the wide variety of land uses in the Region, achieving the target likely requires that densities of all land uses in Halton be modified. How this can be done is discussed in the following section.

IV ACHIEVING DENSITY TARGETS MEANS EXAMINING DENSITIES FOR ALL LAND USES IN HALTON

When evaluating density options it is important to distinguish between density as a measure and perceptions of density. The former is critical when planning for future servicing and infrastructure. However, perceptions of density will greatly affect the ability of an area to attract new residents and industries irrespective of the actual density of the area.

Achieving the *Growth Plan's* density targets in Halton is possible. However, because of the wide variety of land uses in the Region, achieving the targets likely requires that densities of *all* land uses in Halton be modified: residential, employment, retail, mixed-use, institutional and public space.

A. THERE ARE LIMITATIONS TO HOW LAND USE PLANNING CAN INFLUENCE DENSITIES

Density, as it applies to planning and development is often misunderstood. This is because perceptions of density vary greatly from place to place, even within the GTAH. What is considered high density in the Region of Halton may not be considered high in Toronto, or even Mississauga. Even within Halton, where there is a range of settlement patterns, notions of density may vary.

Any discussion of density options must therefore acknowledge the difference between actual density and perceived density. The former is useful to planners as a relative measure: it serves as a basis for comparing jurisdictions and for setting community standards. However, actual density targets should not be an end to themselves. Rather they are best used as a means to achieving broader planning objectives. In this regard, the success of planning policies will rarely be judged by community residents on whether density targets are achieved.

From a policy planning perspective, one limitation on density options is that perceptions of density can be as meaningful to residents as actual densities. For this reason, an appreciation of how people perceive density is as important as knowing what influences density. Factors which affect the perception of density but not necessarily the actual density include:

1. Building Types – certain building forms are associated with certain density levels, regardless of actual density;
2. Design – architectural elements and mixing of higher and lower density forms can reduce perceived density;
3. Context – what is perceived as unacceptably high density in one context may not be in another;

4. Size – small pockets of high density may be perceived differently than large high density developments because they may be better integrated to an area;
5. Mixed-Use – mixed-use land use is generally perceived to be of higher density, whether or not that is actually the case.

It should be noted that the widely used planning definition of net density makes only limited reference to the perceived quality of life in a community. This is because the amount and distribution of parks, recreation facilities, hospitals, and public transit, is typically excluded from the calculation of net density. Thus, the net density of a community that is 40% parkland can be identical to that of a community where parks comprise only 10% of the land area.

Moreover, there are factors that influence actual density that are difficult, if not nearly impossible, to change through land use planning. For example, it is very difficult to influence household size for a given housing type through the planning process even though household size greatly affects population density. For non-residential development it is impossible (and probably not desirable) to regulate employees use of space within buildings directly.

B. GROWTH PLAN DENSITY TARGETS AND MARKET FORCES CAN BE COMPATIBLE

The current pattern of land use in Halton, and its associated densities, has been largely shaped by market forces under the direction of planning policies. The pattern of settlement in the Region has been driven for the most part by a desire for suburban living, automobile ownership, and subdivisions of single family houses, warehouse and distribution type industries, and large scale retail shopping centres. These lifestyle preferences are still held by many residents throughout the Region and by people and businesses looking to settle in Halton.

To many people living in the Greater Golden Horseshoe, there is a discontinuity between the current planning policy environment in Ontario, which favours higher density development and the desires of individuals who often prefer low density development. A complicating factor is the current statutory and regulatory regime in the Province, which can restrict the ability to achieve high densities for certain types of development.

It needs to be stressed, however, that the objectives of the *Growth Plan* and the density targets it imposes need not be incompatible with the aspirations of the current and future residents of Halton. With respect to density in the Region, balancing the greenfield density objectives of the *Growth Plan* and market forces is entirely possible.

C. IF DENSITIES ARE TO RISE REGION NEEDS TO EXPLORE HIGHER DENSITY OPTIONS FOR ALL LAND USES

In considering planning choices under *Sustainable Halton*, each of the major land uses has its own characteristics. These characteristics largely determine the range of density options in the Region.

1. New Residential Development in Halton Already Meets Density Targets But May Have To Be Higher To Compensate For Low Employment Densities

A discussion of residential urban density is key to determining density choices for the Region. At the same time any discussion of higher density housing can be controversial. Calls for reducing urban land consumption often focus on residential development densities. At the same time, many people may enjoy living in low density suburban areas in Halton or aspire to single detached home ownership in the Region.

As demonstrated in Section 3 above, planned and recently constructed residential greenfield development in Halton by itself far exceeds the combined *Growth Plan* density target. However, the residential densities in these communities are likely not high enough to offset the low densities that will almost certainly arise on designated greenfield areas set aside for employment land, retail uses, and public open space. Should a much greater proportion of future greenfield be developed for residential use this will increase overall densities in the Region; such a scenario is however highly improbable. A shift to higher density residential development is therefore likely required.

Three fundamental factors determine residential densities: the land area on which housing units are built; the number of units on the land; and the built form on the land. These factors are not necessarily interdependent. Thus, changing the area of land on which a fixed number of units are built will change the density without changing the built form of the houses. Conversely, changing the number of housing units built on a fixed area of land also changes the density without necessarily changing the built form.

With respect to built form, it must be stressed that recent housing in Milton is more or less the densest single detached housing form possible under the current regulatory regime in Ontario. Thus, the only way to achieve higher residential densities for new housing in Halton is either to change the built form (to more row housing or cluster housing for example) or to change the characteristics within the built form. In the latter case, since parking occupies a large amount of the land needed for residential development, reducing the amount of surface parking will increase densities provided that the change is significant and that extra housing units are put in place. For example, single detached housing densities could be increased by the introduction of collective parking for blocks or groupings of houses.

Factors affecting residential density are illustrated in Exhibit 3. Appendix 1 shows how residential densities and lot sizes have changed over time in the Region and provides examples of higher density housing types being built in Halton and elsewhere in the Greater Toronto Area.

Factors Affecting Residential Density

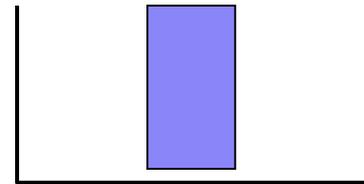
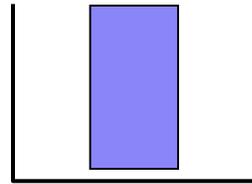
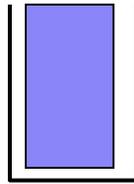
Exhibit 3

High Density

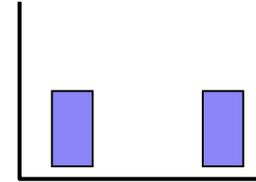
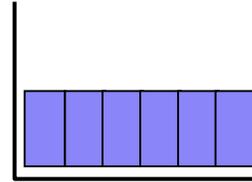
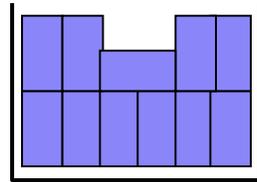
Medium Density

Low Density

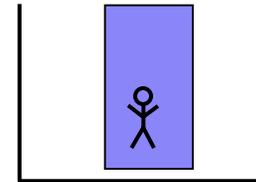
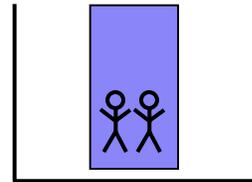
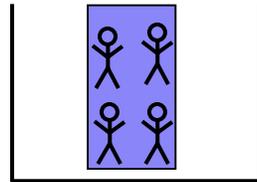
Changing the area of land on which a fixed number of housing units are built will change density without changing the built form of the units.



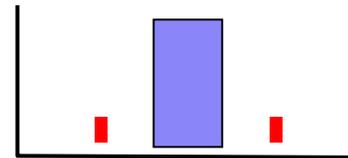
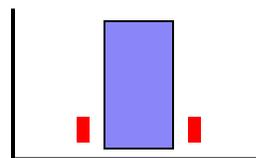
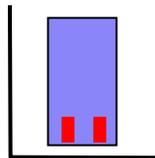
Changing the number of units built on a fixed area of land changes the density.



Changing the number of people in each unit changes the density but cannot be influenced by land use planning



Changing the amount of surface parking for a fixed number of units will change the density.



2. Employment Land Density in Halton is Relatively Low and is Difficult to Increase Without Significant Office Employment

As shown earlier, it is low employment densities that will likely cause development on greenfield areas in Halton to fall below the *Growth Plan's* combined people and jobs per hectare density targets. The main reason for this low density is the pattern of land use on "employment land". Employment land refers to business parks and other designated employment areas. There is supply of this type of land in the Region.

The ability to increase densities on employment land through municipal planning policy is restricted. Built form for industrial-type buildings is determined by the economic activity on the site and its requirements for truck loading, truck movement and parking. Firms dealing with manufacturing, distribution or sale, which predominate in Halton, find that single storey buildings are the only built forms that are economic. Other industrial activities, such as clothing manufacturing, may be slightly more flexible with respect to built form but would rarely be able to choose higher density building types.

One reason for the constraints on built form is that building density on employment land in the GTA has already increased significantly over the past 20 years. Lot coverages for typical buildings have increased from about 30% to around 40% and even to 50% in some cases. Ceiling heights have increased from as low as 12 to 20 feet or more. Moreover, the productive interior volume of these buildings is much higher today than in the past. Changes in building form coupled with rising efficiency and productivity mean that the level of economic activity is rising in employment areas; the rate of economic growth is greater than the rate at which employment land is consumed.

Competition has driven firms to increase densities on employment land in recent years. The decrease in size of the built form is the result of economic benefits that accrue from efficient use of space used coupled with increased automation. Added to this is the fact that competitive employment land in the Region is getting more and more expensive. Many companies have sought to become more efficient by consolidating their operations and their space. One way to achieve this is to build one large building instead of several smaller ones.

Land use planning policies which aim to change employment densities, by increasing high density office development for example, are very limited in scope. The amount of office development in the GTA is largely determined by the structure of the GTA economy which itself is dependent to a large degree on industrial-type activities. Attracting more offices to Halton would necessarily be at the expense of other parts of the GTA and would not therefore change the overall employment density across the region. If Halton was able to redirect its office development to employment areas, this would increase the employment density, but this would run contrary to *Growth Plan* policies which seek to encourage office development in transit oriented nodes.

Planning policies can regulate buildings and built form but cannot regulate employment activity directly. Indeed there is little role for planning in this area as the level of employment in a given building is tied to activity in the building, the corporate structure of the firm, and level of business being conducted. All of these factors are changing constantly. In short, there are few planning policies that can directly

influence employment land density, notwithstanding the *Growth Plan's* use of a density target that incorporates employment.

Without more offices, a significant change to the function and design of Halton's employment land is required. Specifically:

1. Reducing the amount of land devoted to landscaping.
2. Encouraging the very small number of industries that can make efficient use of multi storey buildings, parking, and truck bays to do so in Halton
3. Encouraging shared use of land (truck turning areas; truck bays; parking).

Creative economic incentives can stimulate these changes. However, these changes will likely be resisted by most employers. They often add to costs of operations and require cooperation in what is a highly competitive market. This shared use of land also raises insurance and liability issues.

3. Retail Land Use Densities in Halton are Typical and are Difficult to Change

Large scale commercial building densities are quite low, largely due to the amount of land set aside for parking. That said, the perception that big box store sites are underused is often misplaced. Parking for these uses is built to accommodate peak usage periods and during those peak periods, the number of people and jobs on a given site is quite large. Conventional density measures do not therefore adequately describe the pattern of use in these areas.

Reducing the land associated with large scale retail uses is largely a function of reducing the area set aside for parking. This usually involves the construction either of underground parking facilities or of multi-storey lots both of which may be a prohibitively expensive cost for many retail developers. It must also be stated that any extra building costs incurred by large scale retail developers will almost certainly be passed on to consumers.

A reduction in large scale retail land uses and a corresponding increase in smaller more localized retail outlets can be encouraged through land use planning policies and may increase densities if accompanied by a shift away from use of the car for shopping. However, it remains to be seen whether driving habits and shopping patterns can be significantly influenced in this way.

The options for changing densities on existing localized retail development land uses are similar to those available for residential uses as discussed earlier in this section and in the section below.

4. Mixed-Use Development Often Perceived To Be Higher Density Whether Or Not Actually The Case

Mixed-use development allows for land to be shared by complimentary (and sometimes competing) uses. The *Growth Plan* explicitly (and implicitly through the combined density targets) requires that development that mixes people and jobs be incorporated into local planning policy in Halton.

Mixed-use land use is generally perceived to be of higher density, whether or not that is actually the case. However, the concept of mixed-use development has only been applied in a significant way to combining residential and some commercial uses which, as has been demonstrated earlier in this report, does not account for the majority of the overall land use. In order to substantially increase densities in Halton the mixed-use concept needs to be applied across the full range of land uses in the Region.

5. More Efficient Use Of Public Space Will Increase Densities

Residential development for the most part drives the need for institutional services (schools, hospitals, churches), and public open space (parks). Typically, the denser the community, the wider variety of services and the more accessible they become to a greater number of people. This is because high densities allow for the provision of community facilities such as arenas, pools, community centres, parks, and schools to be located in close proximity to residences. When densities are low there may not be enough population and revenues generated by property taxes to justify some of these facilities.

Of all public space, parkland has the greatest effect on density. The effect of parkland on density is largely controlled by regulatory and public standards which require portions of newly developed land to be dedicated to parkland (usually at a rate per 1,000 population in new development). This can be an impediment to higher densities in newly developed areas.

The amount of newly developed land that is dedicated to open space, especially public parks, heritage lands, forestry lands, and other environmentally protected areas, in recent years far exceeds the amount set aside for open space in the past. This is why older urban communities are often much denser than new development: the standards for parks and other public uses were much lower (or not in place at all) in the past. In fact, it is likely that the rate at which this land has been added to the GTA's supply of open space is greater than the rate at which land has been urbanized or developed.

In older communities where redevelopment at higher densities has occurred it has been suggested that parks and public services lack the capacity to accommodate the additional population that results. In this respect, municipalities have the ability to provide for additional public space through the redevelopment planning process and by redeveloping land themselves where appropriate.

Most of the lands required for institutional and public spaces are set in accordance with regulatory and public standards that establish road rights-of-way, school site sizes, stormwater management procedures and environmental standards. It is therefore difficult to change the use of these lands, by mixing school and parkland uses for example, through land use planning. However, an investigation into the distribution and use of public space may reveal opportunities for using this space more efficiently and thereby increasing densities.

6. Higher Densities Increase The Proportion Of Land Use Needed For Roads

There is considerable debate about the effect higher densities have on patterns of transportation. However, whether higher densities result in an increase in the use of public transit and a corresponding reduction in road traffic or not has little impact on the amount of land dedicated to local roads in new development. This is because the vast majority of land set aside for local roads is not a product of the amount of road traffic. Roads, or road allowances, in these areas serve to sustain a wide range of public infrastructure – water pipes, sewer pipes, stormwater drains, cable networks, sidewalks, hydro poles. Roadways also provide access to this infrastructure when it needs repairing or replacing. In short, the presence and size of local road rights of way is not directly related to traffic needs.

A reduction in traffic can potentially reduce the need for arterial roads. However, any reduction in arterial road networks would have a marginal effect on densities in greenfield areas because arterial roads comprise only a small proportion of the overall land use of these areas. Moreover, the addition of dedicated bus lanes and high occupancy vehicle lanes could result in an increased need for these roads.

Increasing the density in an area and reducing the amount of road traffic therefore has little effect on the amount of roads in the area. Indeed, with increasing net residential density the proportion of land required for roads usually increases.¹

D. CONCLUSION

Achieving the *Growth Plan* density target of 50 people and jobs per hectare on future greenfield development in Halton is possible without radical change to either local planning policies or patterns of settlement in the Region. However, because of the wide variety of land uses in the Region, achieving the target likely requires that densities of *all* land uses in Halton be modified.

¹ By way of illustration think of three building lots with 70, 90 or 110 foot depths respectively. In each case the amount of road in front of the unit is the same, though the area of the lots varies by more than 50%. This in turn means the proportion of land devoted to roads for each of these lots *ranges* from a low of about 20% of the combined lot and road area for the 110 foot depth to a high of about 30% of the combined lot and road area for the 70 foot depth lot.

APPENDIX 1

EXAMPLES OF RESIDENTIAL DENSITIES

This appendix illustrates typical residential densities in the Region of Halton. It shows how lot sizes have changed over time. It also provides examples of higher density housing types being built in Halton and elsewhere in the Greater Toronto Area.

Table 1 below provides densities for a range of lot sizes and serves as a reference for the illustrations that follow.

Table 1 Residential Densities for Various Lot Sizes					
Frontage (feet)	Depth (feet)	Lot Size (sq. ft.)	Net Density		Estimated Growth Plan Density (Persons per Ha)¹
			Units per net Acre	Units per Net Ha	
20	80	1,600	27	67	89
25	80	2,000	22	54	71
30	80	2,400	18	45	59
35	80	2,800	16	38	51
40	80	3,200	14	34	44
45	80	3,600	12	30	39
50	90	4,500	10	24	32
55	90	4,950	9	22	29
60	90	5,400	8	20	26
65	100	6,500	7	17	22
70	100	7,000	6	15	20

¹ Net to gross factors are consistent with those used in the Land Supply report prepared under Sustainable Halton. PPU of 3 issued for all units

The estimated *Growth Plan* densities in Table 1 do not account for employment densities (jobs per hectare) which will, in almost all cases, have the effect of reducing the combined (people and jobs) densities to which new greenfield development must conform.

The illustrations are arranged as follows:

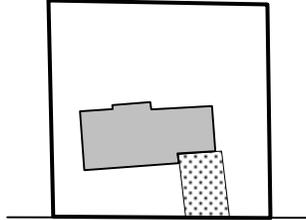
- Appendix 1A to 1B are single detached units arranged by net density (lowest to highest) for units built from 1950s to 2000s.
- Appendix 1C to 1D are semi-detached units arranged by net density (lowest to highest) for units built from 1970s to 2000s.
- Appendix 1E are row units arranged by net density (lowest to highest) for units built from 1970s to 2000s.

SINGLE DETACHED

APPENDIX 1-A

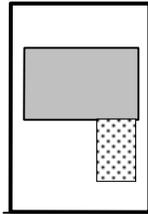
1950s - Oakville

Frontage: 40m (130ft)
Net Density: 6 uph
Bldg. Footprint Coverage: 11%



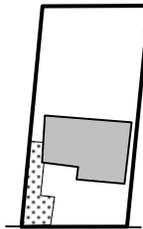
1990s - Burlington

Frontage: 20m (65ft)
Net Density: 11 uph
Bldg. Footprint Coverage: 45%



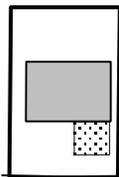
1960s - Oakville

Frontage: 18m (60ft)
Net Density: 14 uph
Bldg. Footprint Coverage: 16%



2000s - Burlington

Frontage: 16m (55ft)
Net Density: 17 uph
Bldg. Footprint Coverage: 46%

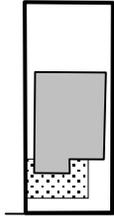


SINGLE DETACHED

APPENDIX 1-B

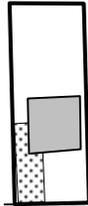
1980s - Oakville

Frontage: 15m (50ft)
Net Density: 18 uph
Bldg. Footprint Coverage: 32%



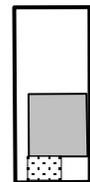
1970s - Oakville

Frontage: 12m (40ft)
Net Density: 25 uph
Bldg. Footprint Coverage: 14%



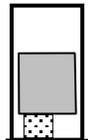
1980s - Oakville

Frontage: 12m (40ft)
Net Density: 25 uph
Bldg. Footprint Coverage: 28%



2000s - Milton

Frontage: 11m (36ft)
Net Density: 37 uph
Bldg. Footprint Coverage: 34%

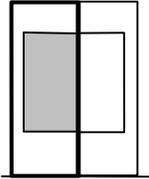


SEMI DETACHED

APPENDIX 1-C

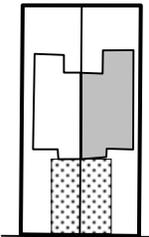
1980s – Burlington

Frontage: 10m (35 ft)
Net Density: 27 uph
Bldg. Footprint Coverage: 55%



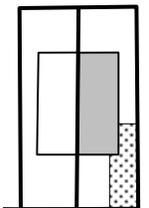
1990s - Oakville

Frontage: 9m (30ft)
Net Density: 32 uph
Bldg. Footprint Coverage: 30%



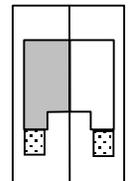
1970s - Oakville

Frontage: 9m (30ft)
Net Density: 35 uph
Bldg. Footprint Coverage: 32%



1990s - Burlington

Frontage: 7m (23ft)
Net Density: 40 uph
Bldg. Footprint Coverage: 45%

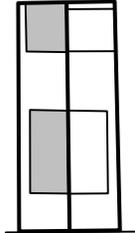


SEMI DETACHED

APPENDIX 1-D

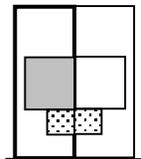
2000s – Oakville (with laneway)

Frontage: 7m (23ft)
Net Density: 42 uph
Bldg. Footprint Coverage: 40%



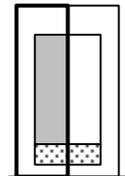
1990s - Burlington

Frontage: 10m (35 ft)
Net Density: 45 uph
Bldg. Footprint Coverage: 40%



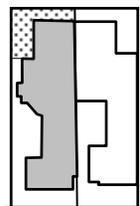
1990s - Burlington

Frontage: 9m (30ft)
Net Density: 46 uph
Bldg. Footprint Coverage: 45%



2000s – Markham

Frontage: 8m (28ft)
Net Density: 48 uph
Bldg. Footprint Coverage: 56%

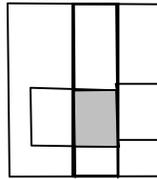


ROW HOUSING

APPENDIX 1-E

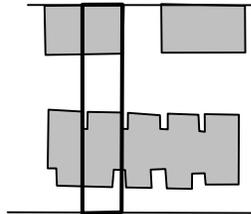
1970s - Oakville

Frontage: 7m (28ft)
Net Density: 51 uph
Bldg. Footprint Coverage: 38%



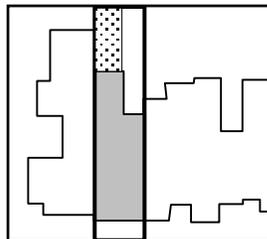
1990s - Oakville (with laneway)

Frontage: 5m (18ft)
Net Density: 63 uph
Bldg. Footprint Coverage: 58%



2000s - Markham (with laneway)

Frontage: 6m (19ft)
Net Density: 63 uph
Bldg. Footprint Coverage: 55%



2000s - Markham

Frontage: 4m (13ft)
Net Density: 92 uph
Bldg. Footprint Coverage: 55%

