

Super GTA: Urban Implications of Ontario's Greenbelt

by

Edward Johnson Martin

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.



0.01 View looking South from Rattlesnake Point on the Niagara Escarpment

Abstract

In early 2005, increasing social and infrastructural costs associated with the rapidly expanding Greater Toronto Area [GTA] pressed the Province of Ontario to initiate a growth management strategy for the region. The Provincial *Growth Plan*, coupled with its *Greenbelt Plan*, effectively legislates a minimum of 40 per cent infill development by 2015 and limits land supply until 2031. This book explores the extents and implications of this legislation, with a particular focus on the Town of Milton, a key community west of downtown Toronto, where city and Greenbelt meet.

The structure of suburban communities can and should be modified to improve their sense of identity, and reduce their environmental impact and dependency on automobiles. The thesis aims to reflect the policies inherent in the Provincial Growth Plan, which advocates placing walkable infill development in close proximity to public transit. A design proposal links natural corridors and recreational spaces with a public thoroughfare along the existing railway line in Milton, Ontario. A dense new community flanks this public armature which connects the public realm network of this rapidly developing town to the larger network of the Metropolitan Greenbelt.

The Town of Milton becomes a test case for scenarios which are common within the GTA, and examines the human impact on environmental systems moving towards symbiosis. The context of this city-building predicts a fundamental conceptual shift in the priorities of urban living, where residents understand the value of the natural environment and their relationship to it. That is to say, its context is one in which nature matters.

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For E.D.K. Martin



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0.03 Big Farms becoming Built Forms

Greater Toronto Area [GTA]

Consisting of an amalgamated Metropolitan Toronto, twenty-five municipalities and four regions covering a total area of over 7,000 square kilometers, with a population of 5.6 million, the Greater Toronto Area is Canada's largest metropolitan area. With over 100,000 companies employing a workforce of 2.9 million people it is also its economic capital.

Greenbelt

An extensive area of largely undeveloped land, surrounding or intertwined within an urban area, set aside to contain development, to preserve the character of the landscape and community, and to provide access to open space.

The Context of this Research

The research in this thesis draws on a number of primary sources dealing with regional growth management in the GTA. The Provincial *Greenbelt Plan* and *Places to Grow: The Growth Plan for the Greater Golden Horseshoe* form the basic parameters for analysis and speculation. Draft versions of these plans, their associated studies and reports, as well as research by the Neptis Foundation have played a major role in the development of this work.

Introduction

The City of Toronto is at a critical point in its life-span. As its urban region rapidly expands anticipating still further growth, it simultaneously faces the crippling infrastructural and environmental constraints associated with decades of low-density suburban expansion. While the city has the potential to develop into one of the world's strongest and most vibrant regional centres, it has been diverging from this potential due to decades of segregated planning principles, and a virtually unrestricted land base. These factors are pushing the city towards an irreconcilable condition characterized by pollution, congestion and fragmentation, and in the context of a global energy crisis, these problems will be compounded. The future of Toronto will depend upon new approaches to our city-building.

The Province of Ontario has recognized these constraints and is attempting to address them through a new approach to large-scale regional planning. The idea of a greenbelt has come to Ontario at a scale great enough to dramatically affect the future of Canada's largest urbanized area. Ontario's Greenbelt and Growth Plans re-evaluate the form of urban areas, and envision prosperous urban regions characterized by convenience, beauty and clarity.

This thesis dwells in the discussion about what the Greenbelt means for Greater Toronto Area [GTA], and how its policies will begin to change the way in which the urban region is growing. The growth management policies associated with the Greenbelt offer a catalyst for the transformation of the GTA's regional growth dynamic, advocating a more compact urban form consolidated around existing infrastructure. The primary goal of this book is to explore how new methods of city-building will arise as a result of these policies. It considers where examples of these methods might begin to germinate, and what some of the cultural implications of these transformations might be.

This thesis begins with a brief history of the Greater Toronto Area [GTA], charting the evolution of the region. It maps the conditions which form the base of a Provincially managed Growth Plan. The proposed Greenbelt and Growth Plans are re-presented and its critical policies are illustrated in order to speculate on their implications. International precedents are cited to

inform a relative reading of Ontario's approach to growth management in the global context. This analysis is paired with a localized debate over the major elements of the Plan, as there are certain assumptions within the Growth Plan that must be acknowledged and evaluated in order to understand the motives of the province.

In the next part of the book, the densification policies proposed in the Growth Plan are deciphered, and presented within the context of traditional residential and employment typologies. This is followed by a section on hybrid typologies and the evolution of urban retail over the last century. Following this is a preface to the design which speculates on certain urban and suburban typologies mixing to generate large mixed-use urban blocks.

Through an analysis of the peripheral areas of the GTA, concepts about its future metropolitan composition is explored. The location of designated and potential growth centres across the western part of the city suggest an emerging regional pattern. A comparative analysis of the existing urban forms is done in order to see how this is a regional issue, as similar urban structures are evident across the broader scope of the GTA.

The final section focuses on the Town of Milton, a peripheral suburban node which has been designated for intensification. In this section, Greenbelt intensification policies are applied to the design of a dense neighbourhood organized around a reconstructed natural corridor along Milton's existing commuter rail line. This proposal explores the ability of nature to play an integral role within communities and act as a catalyst for urban development. This exercise is an illustrated example of how Greenbelt policies could impact what is a fairly typical urban structure, and alter the climate for urban development at a regional scale.

This thesis advocates a cultural shift in the expectations we have of space, nature and how we live in the city. The value of natural systems must be revisited, as the health of the entire region depends on their continuity, vibrancy and diversity. Using the Greenbelt initiative as a starting point, this thesis proposes a shift towards development which cultivates natural areas within communities in such a way that residents are regularly exposed to natural processes, and subsequently foster appreciation for the systems that support life.

Thesis Summary

* *The Regional Growth Dynamic*

Over the next twenty-five years, the population of the Greater Toronto Area [GTA] and its urban region is expected to grow by an additional 3.7 million people.¹ The GTA has been expanding rapidly for several decades, and since World War II, most of the growth has occurred on the edges of the city at low densities. These patterns have dramatically increased the size of the urbanized region and now form the dominant model for development in the GTA.

* *Provincial Response : The Greenbelt and Growth Plan*

While the Province of Ontario sees the forecast growth as a positive thing for the GTA, it claims that the ways in which the Metropolis is currently dealing with its growth are economically and environmentally unsustainable. The Greenbelt presents a series of policies geared to transform the existing growth dynamic in the region. However, exactly how the implementation of these policies will affect communities remains ambiguous.

* *Methodology : Illustrating Policy*

Interpreting the documents presented by the Province, this thesis investigates places where certain policies could be applied now and in the future. Many of the growing areas near the city's edges exhibit a set of generic conditions. A design proposal for one of these areas exemplifies a general approach to implementing in fill development, which could be applicable across the region. The methodology also proposes an adaptation of present development practices, manipulating the forms and techniques that control the current growth dynamic of the region.

* *Towards A New Paradigm*

This work challenges our current approach to living in cities, advocating a new paradigm in which open space exists primarily in the public realm. This thesis imagines a future where suburban centres are dense and vibrant enough to offer unique civic experiences, and are enhanced by direct contact with the natural environment. It envisions a compact urban lifestyle connected to a vast metropolitan nature reserve and seamless regional transit network. The design proposal articulates what the Greenbelt could mean to the future organization and character of the Greater Toronto Area.

Key Issues with a Dispersed City

- * Urban development threatens sensitive natural features and agricultural land
- * Congested transportation network
- * Public transportation becomes less feasible
- * Increasing water and air pollution
- * Infrastructure is stretching beyond capacity and is increasingly expensive to maintain

Key Policies of the Provincial Response

- * Protection of key natural features
- * Urban growth boundary
- * Twenty-five growth centres
- * Intensification policy
- * Minimum density policy
- * "Complete communities" guidelines

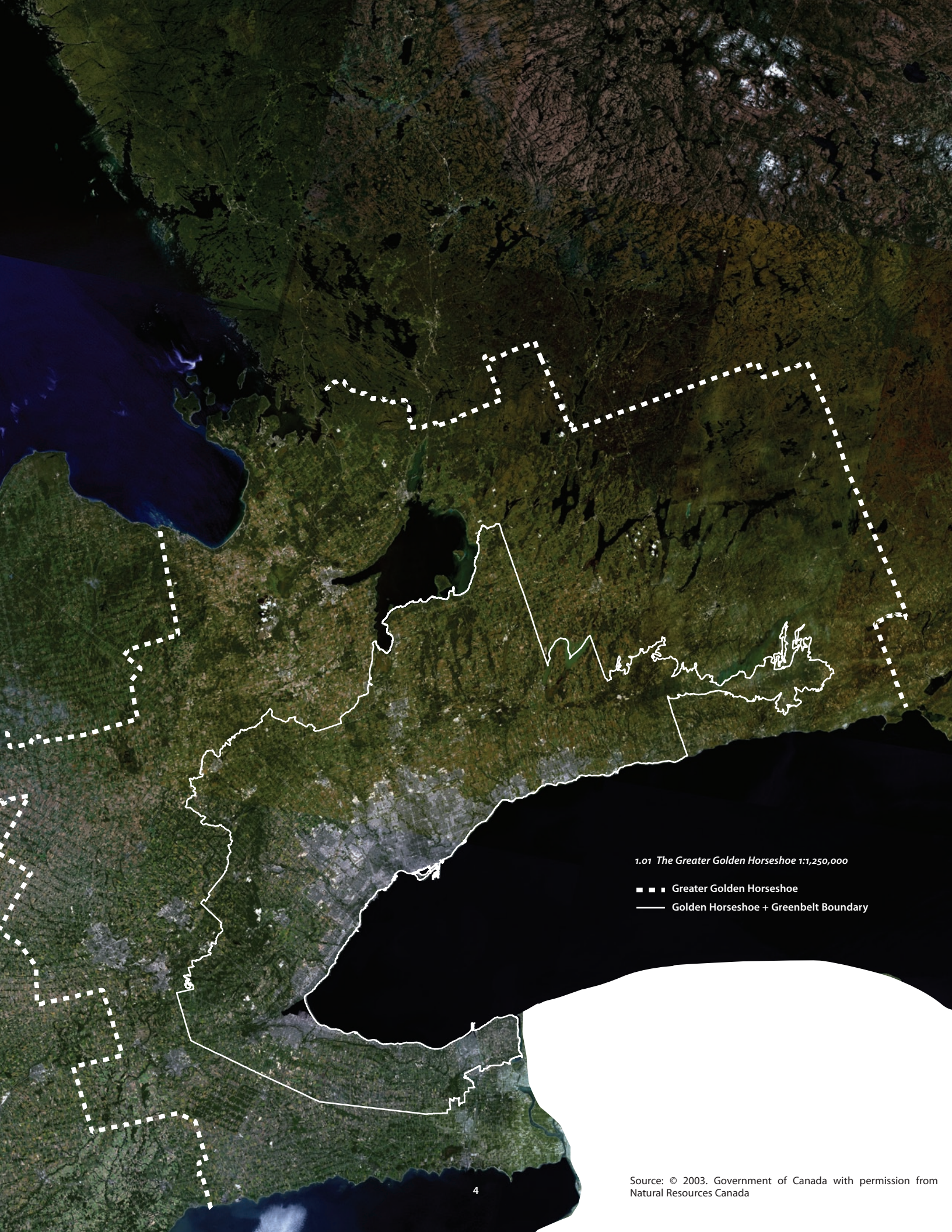
Existing Generic Conditions

- * Traditional small town or new community
- * Railway corridor
- * Major natural element(s)
- * Clusters of large brownfield or vacant sites
- * Segregated or fragmented communities

Goals for the New Paradigm


- * Natural systems support all living organisms and must exist within the city
- * Unique civic identity is possible to generate based on historic and cultural conditions
- * A strong public realm can unite communities
- * Reduction in automobile dependency is positive for environmental and social reasons

1 Hemson Consulting - Growth Outlook for the Greater Golden Horseshoe p. 22



1.01 The Greater Golden Horseshoe 1:1,250,000

- ■ ■ Greater Golden Horseshoe
- Golden Horseshoe + Greenbelt Boundary



The Golden Horseshoe

Combining the Regions of Metropolitan Toronto, Hamilton, Niagara, Halton, Peel, York and Durham, this urban "Horseshoe" wraps around the western tip of Lake Ontario and is "Golden" for its continued economic prosperity and its image from space at night.

The Greater Golden Horseshoe [GGH]

Covering most of south central Ontario, this area includes the Golden Horseshoe plus the surrounding cities of Barrie, Brantford, Guelph, the Kawartha Lakes, Orillia and Peterborough; the counties of Brant, Dufferin, Haldimand, Northumberland, Peterborough, Simcoe and Wellington; and the Regions of Niagara and Waterloo.

"The history of the city is always inseparable from its geography; without both we cannot understand the architecture that is the sign of this "human thing."

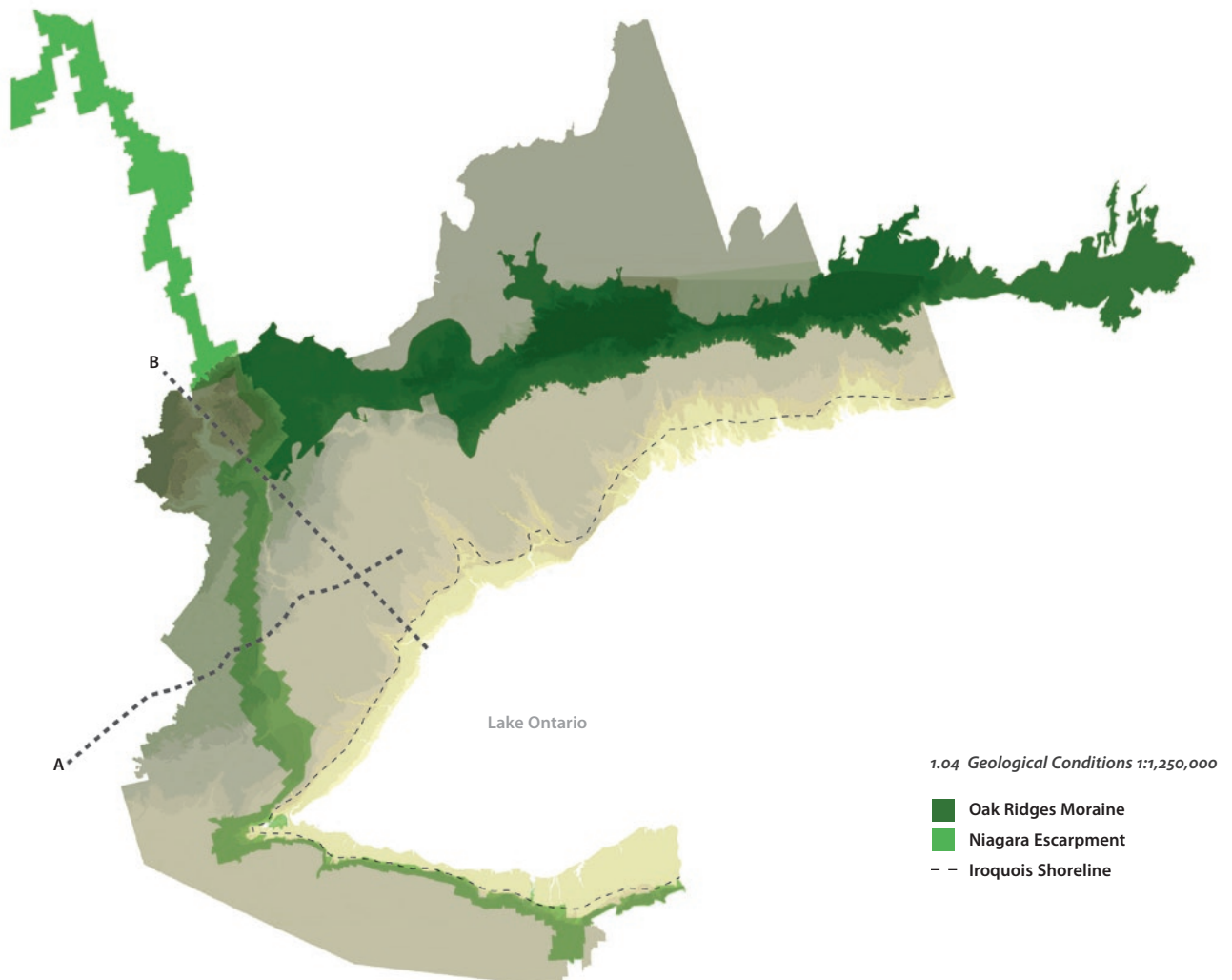
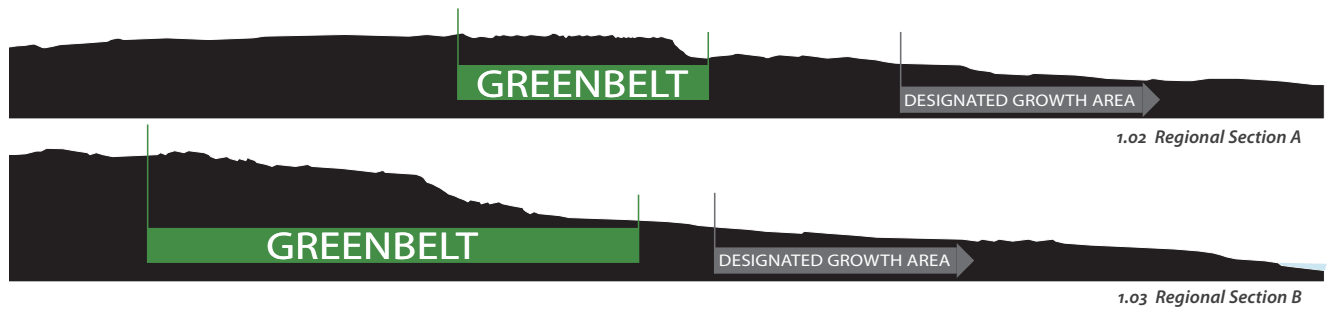
Aldo Rossi - Architecture of the City

The Greater Golden Horseshoe

The extent of Toronto's influence has expanded along side the growth of its population and urban area. Moving outwards in a concentric pattern, this influence has evolved from affecting the early settlement of Toronto, to the amalgamated Metropolitan Toronto, to the Greater Toronto Area, and finally to the large piece of Southern Ontario called the Greater Golden Horseshoe.

The evolution of the Greater Golden Horseshoe [GGH] has been influenced by a wide array of processes and events. From the natural ecology and physical constitution of the landscape, to factors of foreign influence, land ownership and governance. This section outlines the conditions that have shaped the physical form and cultural climate of the GGH. The boundaries of the proposed Greenbelt for the Greater Horseshoe form the basis for the maps which locate these conditions.

The process of transforming the wild environment of the 18th century to a cultivated urban-centred landscape has occurred in parallel with Ontario's evolving human settlements. Patterns of inhabitation in the landscape have shifted enormously, as centuries of indigenous peoples living in villages along ravines have been exchanged for the overnight construction of endless fields of suburban homes along great highways. The long term reality of such a trend presents a number of overlapping challenges for the whole of the GGH. Measured in a global context, these challenges are further compounded by an uncertain energy supply, increasing levels of pollution, human migration and competition with other regional economies.



The Oak Ridges Moraine

Created by glacial deposits 10,000 years ago, the Moraine is environmentally sensitive, geological landform. Containing the headwaters of 65 river systems, a diverse range of lakes, streams, woodlands, wetlands, and bogs, it is one of the last remaining continuous green corridors in southern Ontario. It is home to significant flora and fauna, and is the primary source of groundwater for the GTA. In 2002 the *Oak Ridges Moraine Conservation Plan [ORMCP]* was established to protect the Moraine from urban development.

The Niagara Escarpment

Running North from Niagara Falls up the Bruce Peninsula to Manitoulin Island, and south to Michigan and Wisconsin, the Escarpment is the oldest landform in the Region. Its long bluffs were sculpted by differential erosion over 440 million years ago¹. Like the Moraine, the Escarpment plays a vital role in the hydrology of the GTA. Pressure to protect this sensitive landform, through the 1960's, prompted the formation of the Niagara Escarpment Commission in 1973. A Plan to protect the Escarpment was approved in the 1985, revised in 1990, and continues to preserve this important heritage today.

Cuesta

A ridge with a gentle slope (dip) on one side and a steep slope (scarp) on the other.⁴

Wisconsin Glaciation

The Wisconsin period was the last major advance of continental glaciers in North America. Covering most of Canada and the United States it radically altered North American geography. Its presence enabled the migration of humans to the continent while its retreat was the last step in the creation of the Great Lakes and the Moraine.

The Iroquois Shore

The high point of glacial Lake Ontario, this edge is ever-present in the fabric of the GTA marked by the diagonal line of Davenport Road and by the Scarborough Bluffs.

The Escarpment, the Lake and the Moraine

The geography of the GTA is characterized by several major landforms responsible for its basic physical form and inherent natural systems. North of the GTA, running East-West, the Oak Ridges Moraine is a rich glacial deposit splitting the Lake Ontario and Lake Simcoe watersheds. To the West, running North-South to Georgian Bay and beyond, the much older Niagara Escarpment rises abruptly from the plains at its base. Formed millions of years ago, this cuesta is part of a larger geological structure stretching to the State of Wisconsin.¹ Together, these features form a gentle bowl that drains into Lake Ontario, the last and lowest in the sequence of five Great Lakes.

Receding glaciers of the last ice age sculpted and eroded the Oak Ridges Moraine and river valleys, creating Lake Ontario. The Wisconsin Glacier was the last to go after the glacial retreat began 12,000 years ago. Since it left, the water level of the Lake has changed several times. It is calculated to have been at one point approximately 40 metres higher than its current elevation,² when its edge marked an evident rise in topography now named the Lake Iroquois Shoreline. When large pieces of ice at the Lake's eastern edge eventually melted, opening an outlet to the St. Lawrence Seaway, the Lake's water level plummeted. Only slowly afterwards did the water level creep up to its current elevation.

Erosion since the last glacial retreat has created an extensive system of fast-moving streams and rivers slicing deeply into the gently sloping plains of the Toronto Bio-region. Further erosion of these ravines has revealed riverbanks that now act as great sponges absorbing and cleansing rainfall, and are the lifelines of all ecosystems in the GTA.

The evolution of these landforms has established the unique geography of the GTA, distinguishing it from the rest of Ontario. These landforms are of ecological significance and much of the Ontario Greenbelt is structured around their preservation. They remain in fluctuation, changing slowly beneath a relatively young city.

1 Niagara Escarpment Commission - Geology

2 Benn, Carl - First Peoples, 9000 BCE to 1600 CE


3 Niagara Escarpment Commission - Geology

4 New Oxford American Dictionary, 2nd Edition



1.05 Early Inhabitations 1:1,250,000

- Major Rivers
- Major Watershed Boundaries
- Early Native Settlements
- The Toronto Passage
- The Toronto Purchase



Early Villages and Settlements

In a landscape of rolling hills, fast moving streams and rivers, waterways became the expressways and lifeblood of early human inhabitation of the GTA. Evidence of consistent native settlement suggests that the area has been a natural location for civilization.

The Toronto Passage

Also known as the Carrying-Place Trail, this historic shortcut crossed the Oak Ridges Moraine to the Holland Marshes via the Humber River, connecting Lake Ontario to Lake Simcoe and eventually to Lake Huron. For early inhabitants who relied on water as a primary means of transportation, this portage served as a gateway to the rest of Canada.

The Toronto Purchase

In 1787, the British government bought 250,000 acres from the Mississauga Indians for 1,700 British pounds and 149 barrels of goods.

British Loyalists

During the American Revolution for independence from the British Monarchy, citizens who remained Loyal to Britain were rewarded with land when they sought refuge in Canada. This event sparked the growth of the predominantly English settlement in Ontario.

Inhabitations and Occupations, the Passage and the Purchase

Anthropologists and historians maintain that the first humans to inhabit North America arrived from Asia via the Bering Strait land link some time before the end of the last Ice Age.¹ Evidence points to human activity in the Greater Toronto Area as early as 12,000 years ago, coinciding with the recession of the Wisconsin glaciers². Details of this history are in the hands of archaeologists and anthropologists, as early Americans maintained an oral tradition, passing learned information from one generation to the next without written documentation. The development of these peoples occurred slowly over many generations. New discoveries, methods, and religions were rare, often occurring without noticeable change to daily life³.

Over time, the different native peoples adapted to the varied and unique North America landscapes. In Ontario, prominent hunting areas, rivers, migratory passages and trade routes were identified, used, settled and territorialized, motivating conflict and trade between small tribes of people. Villages of Huron, Iroquois and Seneca Indians dotted the riverbanks of what is now the GTA. The Humber River was of particular significance, forming the first leg of a popular overland shortcut linking Lake Ontario and Georgian Bay. Known as the Toronto Passage, this portage connected the villages to the rest of Canada via the Great Lakes. This contact imported agriculture to the area, and by the end of the 16th century, the cultivation of seeds and farming of land allowed the population to reach its peak of 20,000 people⁴.

The arrival of European settlers in 1615 exposed the population to foreign diseases and war, decimating the population⁵. In 1787, the British Empire purchased a vast expanse of land from the remaining population⁶. The purchase of this land was granted to British Loyalists as payment for their service to the Empire against the United States⁷. This transaction initiated the development of today's urban region, one initially based on Western European immigration and its economic and cultural values.

1 Wikipedia -Indigenous peoples of the Americas

2 Turner, Linda - Great Canadian Lakes

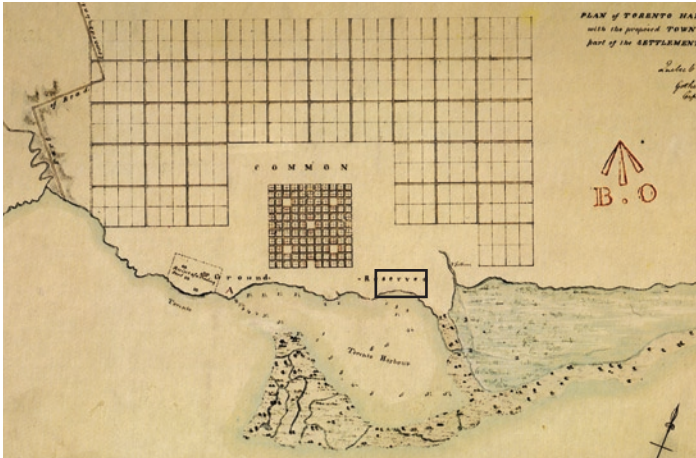
3 Benn, Carl - First Peoples, 9000 BCE to 1600 CE

4 ibid

5 Benn, Carl - Natives and Newcomers 1600-1793

6 ibid

7 ibid



1.06 Plan for Toronto 1788

Original 10 Blocks of the City
Source: Ontario's History in Maps



1.07 Plan of York 1818

Original 10 Blocks of the City
Source: Ontario's History in Maps



1.08 Structuring the City 1:1,250,000

Yonge Street
Toronto Plan
Grid of Speculation

The Town of York

Established in 1793 by Governor John Graves Simcoe on the existing site of the planned settlement of Toronto. It was made capitol of Upper Canada, moving from Niagara-on-the-Lake where it was less vulnerable to attack. The Town was renamed Toronto in 1834.

Yonge Street

Disputably the longest street in the World, Yonge Street runs north from the edge of Lake Ontario to Cochrane. It then gradually turns west as it finds its way around Lake Superior to Thunder Bay, and terminating finally in the town of Rainy River, bordering the state of Minnesota. As 'Highway 11', it stretches 1,896 km.⁴

Yonge Street, the Plan and the Grid

To affirm the Toronto Purchase and to assert British Imperial rule over the territory of Upper Canada, a Georgian Plan for Toronto was drawn up by Gother Mann in 1788. Adhering to the British rules and regulations for new towns at the time, the plan depicts a small core with a regular grid pattern of streets and blocks surrounded by common green-space, and then a zone of larger lots for more spacious villas.¹ At regular intervals, particular blocks within this plan were reserved to accommodate hospitals, markets and other public functions.²

The site for the settlement was chosen for its proximity to known trade routes as well as its location in the naturally protected harbour created by marshlands and spits which now form the Toronto Islands.

In 1793, John Graves Simcoe was appointed Lieutenant Governor of Upper Canada and came to Toronto to establish Fort York as a military base. While Simcoe was only in the region for a few years, he did much to structure the framework of the future city. He renamed the town to York (it reverted to Toronto in 1834), and laid out ten urban blocks near the mouth of the Don River. Then, using what is now Queen Street (originally called Lot Street) as a datum line, the lands north of Queen were divided into 100-acre park lots.

Later that year, Simcoe cleared the route for Yonge Street, running directly north from Lake Ontario up to the Holland River. This new street would be the first line for a survey of the whole region, and formalized the process of land division acting as a catalyst for its undertaking. This street also formed the central spine of the town defining its orientation and construction and served as a link bringing rural goods into its markets.

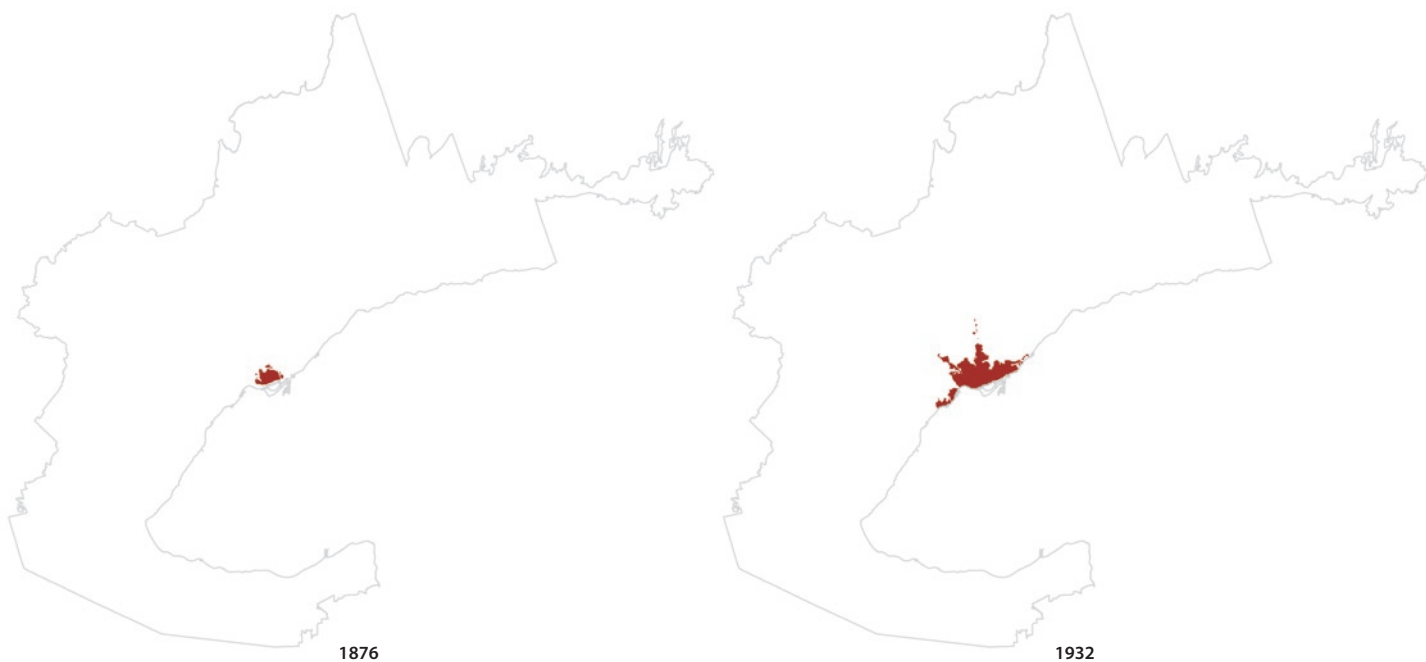
Following these basic moves, a subsequent survey grid was laid over the whole of the region irrespective of topography. The British system oriented its concessions either perpendicular or parallel to the water's edge³. The system was used to locate and connect farms together, and created a series of small rural towns serving the needs of their surrounding farmers. This system is still evident today in the patterning of farmland, the location and naming of roads and in lines of trees.

1 Gentilcore, Louis - p. 89

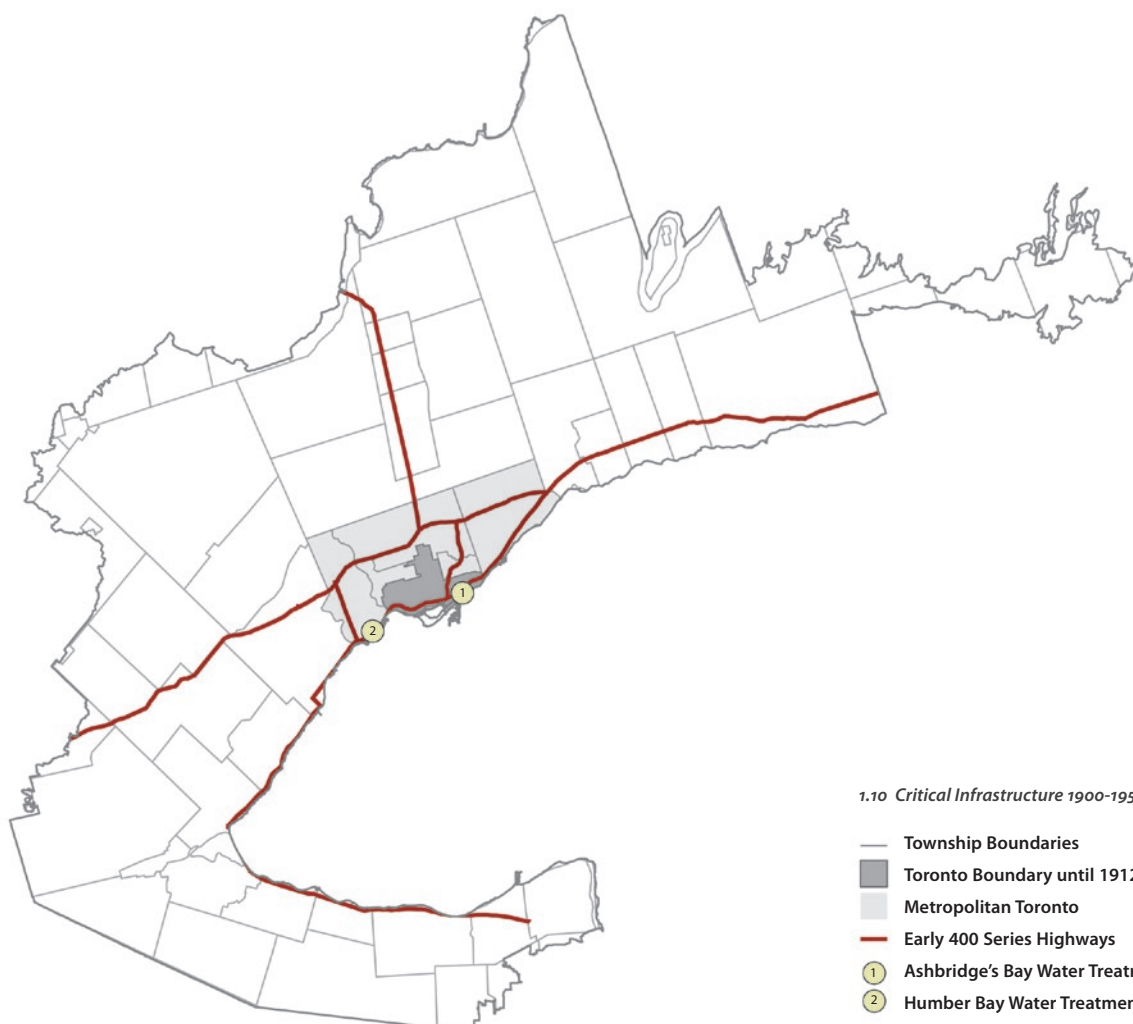
2 Van Nostrand - p. 14

3 ibid - p. 16

4 Wikipedia - Yonge Street

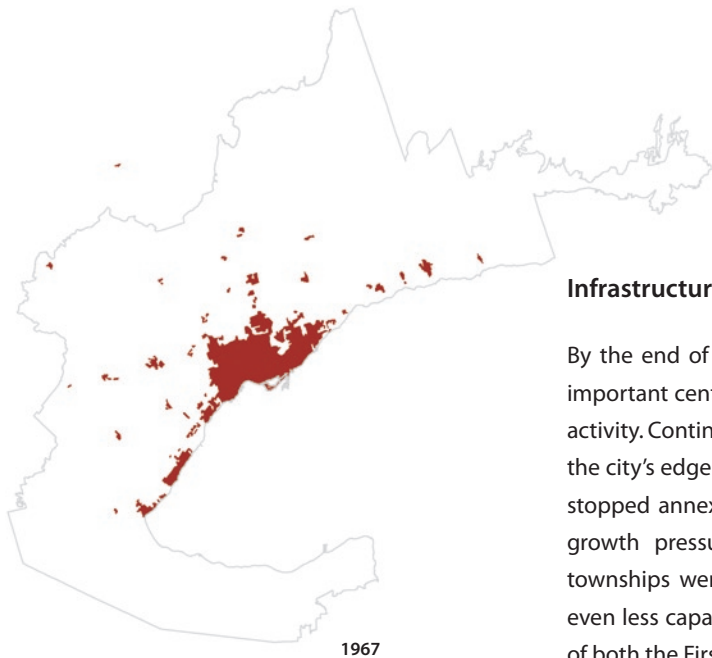


1.09 Sequential Urban Expansion 1:2,000,000



1.10 Critical Infrastructure 1900-1950 1:1,250,000

- Township Boundaries
- Toronto Boundary until 1912
- Metropolitan Toronto
- Early 400 Series Highways
- ① Ashbridge's Bay Water Treatment Plant
- ② Humber Bay Water Treatment Plant



Infrastructure in the Post World War II Expansion

By the end of the 19th century the City of Toronto established itself as an important centre with a diverse mix of residential, commercial and industrial activity. Continued growth through the first half of the 20th century expanded the city's edge faster than its ability to provide basic services. In 1912 the city stopped annexing additional land under its jurisdiction, thereby increasing growth pressure on the surrounding boroughs and townships.¹ These townships were primarily residential, and without a diverse tax base were even less capable of providing essential services than Toronto. The outbreak of both the First and Second World Wars exacerbated the problems of growth management by diverting necessary funding to the national war efforts.

After the Second World War, the ensuing population boom [the Baby Boom] increased the demand for housing and prompted the formation of the Canadian Mortgage and Housing Corporation [CMHC]. The new federal agency subsidized the construction of new homes with mortgage support, and assisted new homebuyers in obtaining financing. At this time, the provincial government finished the first phase of a major highway corridor connecting Detroit to Quebec across Ontario. The completion of the Kings Highway 401 had been on hold during the war. As the post-war economy continued to expand, so did the pressure to quickly build new housing in order to meet the growing demand. The townships surrounding Toronto were already financially stretched to their limits and were unprepared for the rapid expansion.²

It quickly became apparent that a fair distribution of municipal resources was needed. In 1953, under Provincial guidance, the City of Toronto was amalgamated with several surrounding Townships to form Metropolitan Toronto. This amalgamation endowed the new government with borrowing power, giving it access to new funds, and enabling it to respond decisively to infrastructural shortfalls.³ The construction of major water and sewage lines, the Humber and Ashbridge's Bay waste treatment plants, the first of the 400 series highways directly accessing Toronto; the Gardiner and Don Valley Expressways, and major public housing projects each demonstrated this new ability to build on a large scale. Throughout this time period, rapid growth was seen as a positive outcome of the amalgamation and these projects encouraged it.

Within a ten-year period the expanding urban area of Metropolitan Toronto would reach its borders at which point the city resisted funding further expansion of its infrastructure into the surrounding townships. Once again annexing had halted, and the surrounding townships and municipalities were caught with a serious housing demand they could not possibly hope to service without assistance.

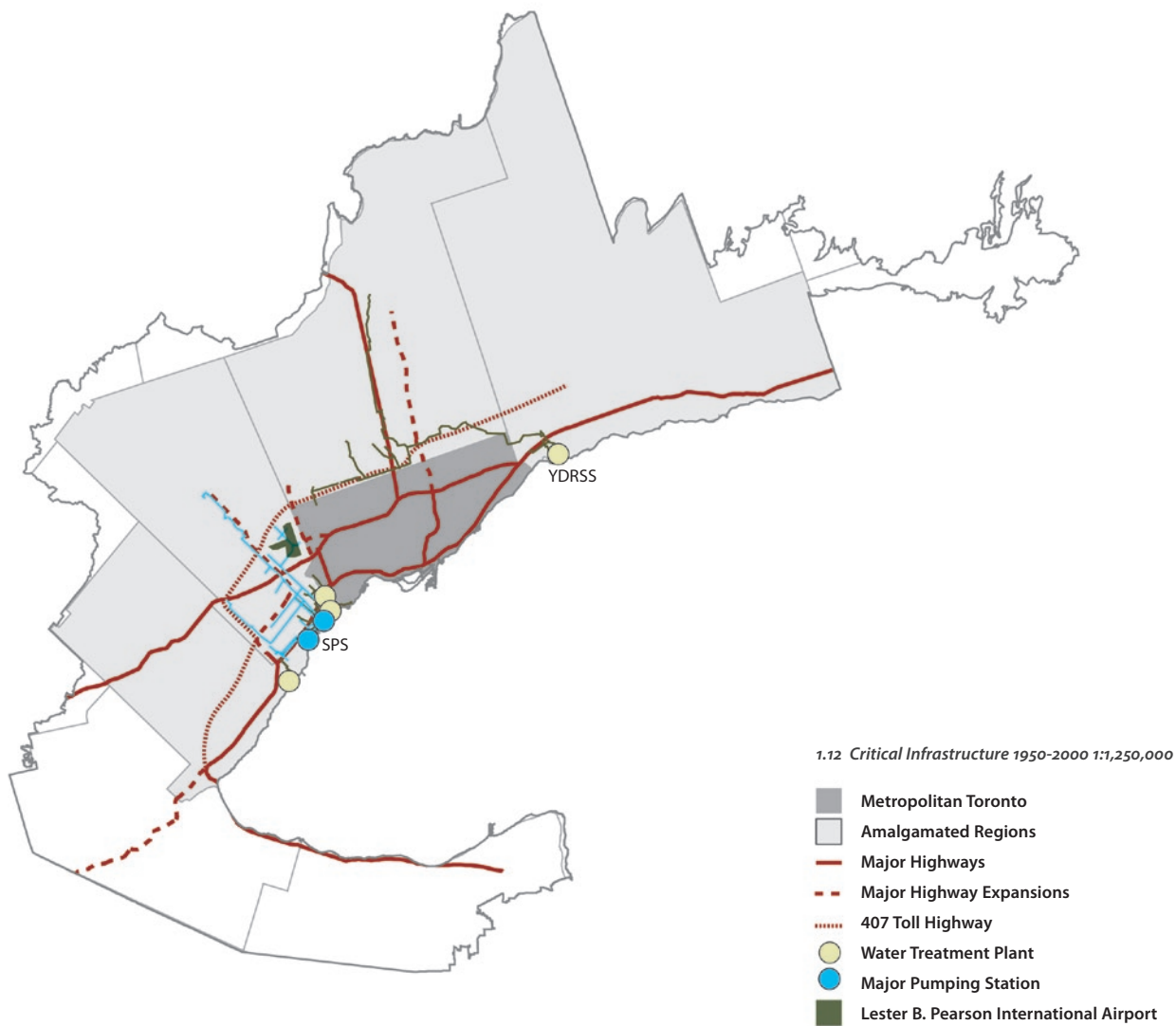
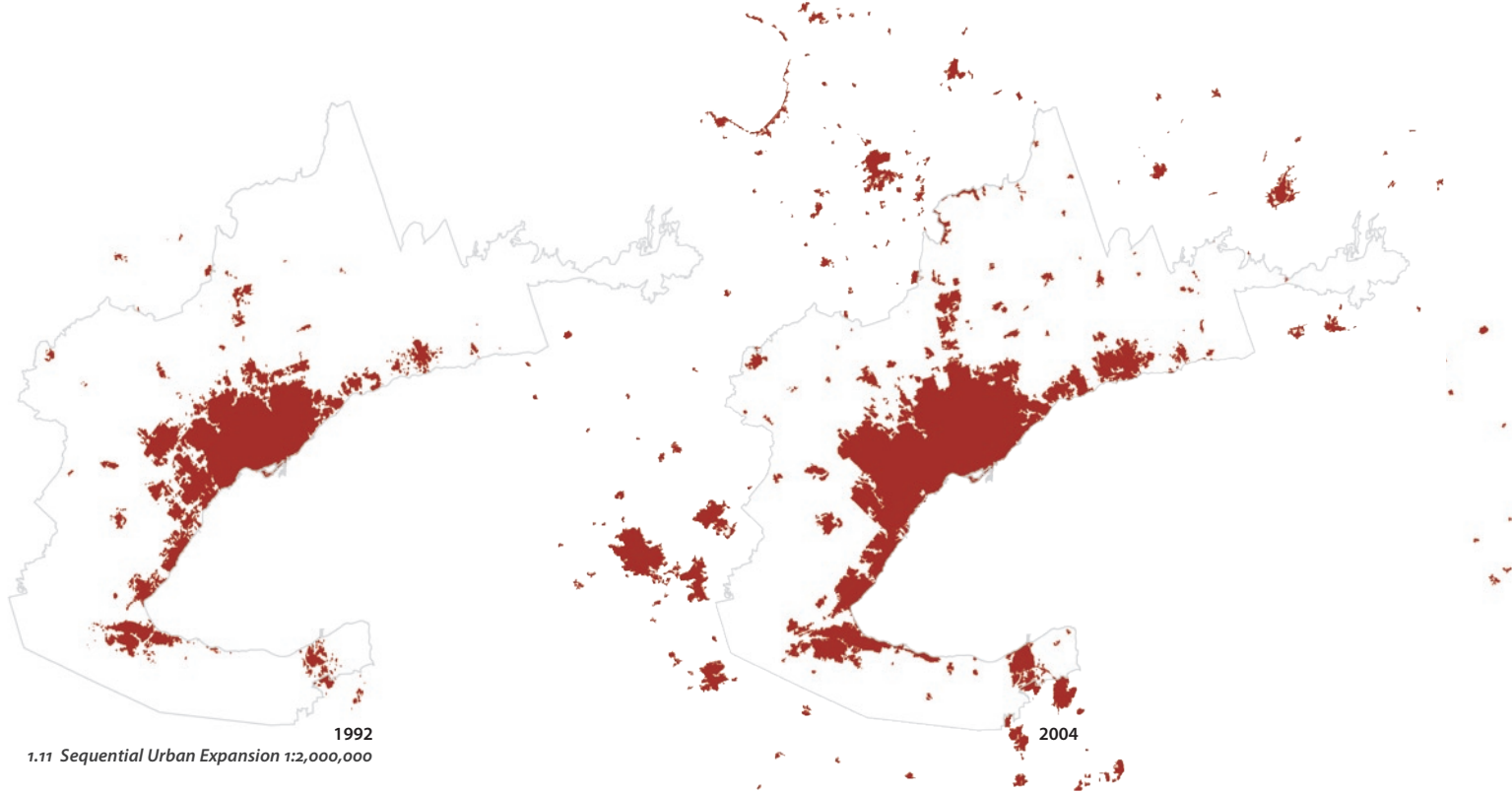
Metropolitan Toronto

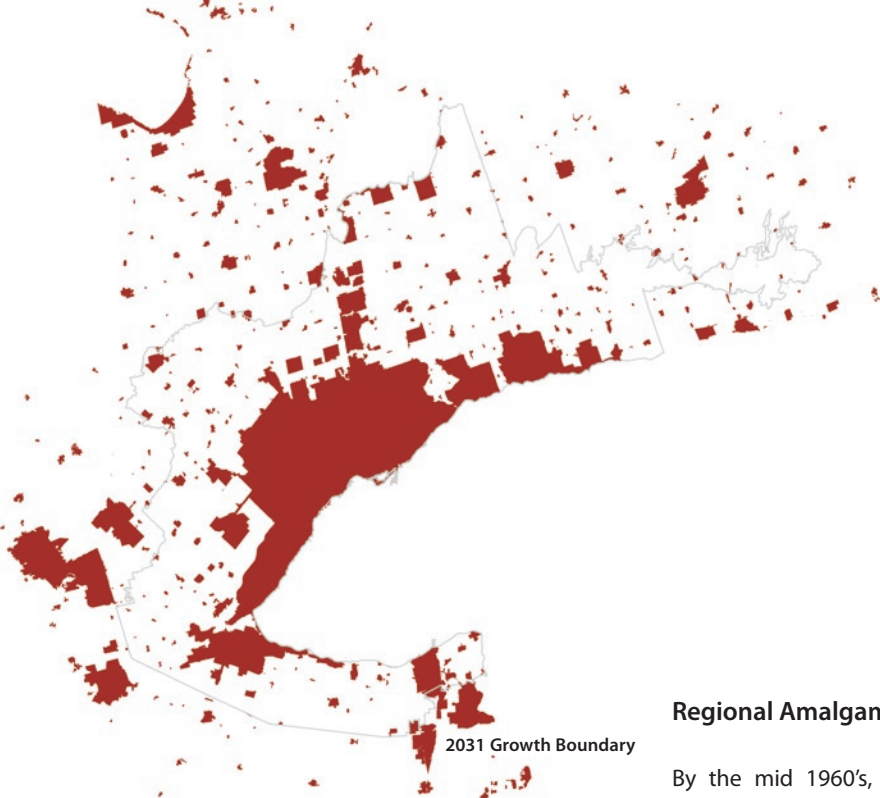
In 1953 the City of Metropolitan Toronto was formed from the amalgamation of the Towns of New Toronto, Mimico, Weston, and Leaside; the Villages of Long Branch, Swansea, and Forest Hill; and the Townships of Etobicoke, York, North York, East York, and Scarborough.

1 White, Richard - p. 10

2 ibid - p. 11

3 ibid - p. 13





Regional Amalgamations

By the mid 1960's, the municipalities surrounding Metropolitan Toronto were unable to accommodate the rapid growth overflowing from the City's borders. They did not have the same access to funds or water as did Metro, and could not afford to construct the infrastructure required for the growth they were experiencing. They had however, witnessed the outcome of Metro's amalgamation and desired the same power and capabilities.

In the early 1970's, following the earlier model applied to create Metropolitan Toronto, the Province of Ontario amalgamated twenty four of the townships and municipalities surrounding Metro into four regional governments. These new regions now garnered sufficient critical mass to begin applying pressure to both Metro Toronto and the Province, demanding subsidies for the construction of major water and sewer infrastructure to support their continued growth.¹ The Province acquiesced and two major lake-based pipelines were built on either side of Toronto; the York-Durham Sewer System to the east and the South Peel Scheme to the west.

Shortly after the construction of these pipelines, growth exploded in the new regions. Throughout the 1970's, Peel Region became the fastest growing part of what would be known as the Greater Toronto Area.² To support this growth, an expansion and extension of the 400 series highways surrounding and passing through the GTA was undertaken. The new highway 403 was built to service Peel Region, and the Don Valley Parkway extension [404] provided access to the emerging new communities in York Region. These projects accommodated the enormous increase in automobile traffic precipitated by the continued urban expansion across the regions.

The relationship between the GTA's infrastructural expansion and its overall growth has been and continues to be interdependent. Lack of services has hindered the growth of urban areas, while its presence encourages it. In most cases over the last fifty years, the necessity of infrastructure has preceded pending development. At both the regional and municipal scales, new pipes and highways were barely complete before the housing that followed them was sold.

Regional Amalgamations

Established in 1974, these new Regions were legislated by the Province to provide community services to their large and highly urbanized areas.

Regional Municipality of York

Formed from the City of Vaughan; the Towns of Aurora, Markham, Newmarket, Richmond Hill, Whitchurch-Stouffville, East Gwillimbury, Georgina; and the Township of KingTown.

Regional Municipality of Peel

Formed from the Cities of Brampton and Mississauga; and the Town of Caledon.

Regional Municipality of Durham

Formed from the Eastern Municipalities of Pickering, Ajax, Oshawa, Whitby, Clarington; and the Townships of Uxbridge, Scugog and Brock.

Regional Municipality of Halton

Formed from the Southwestern Cities of Burlington, Oakville, Milton, and Halton Hills.

York-Durham Regional Sewer System [YDRSS]

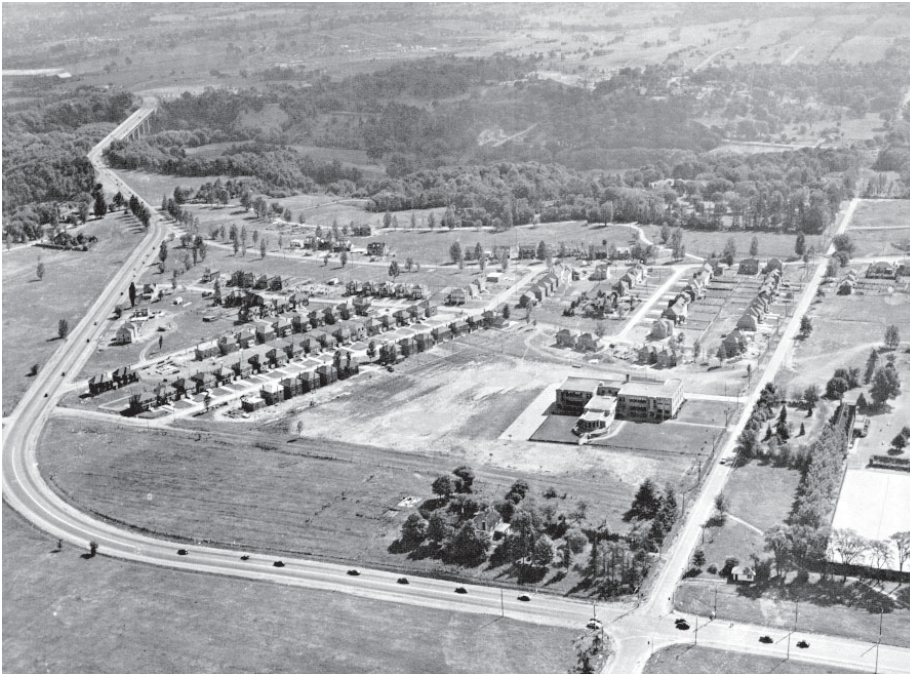
A provincially funded infrastructure project servicing York and Durham regions. As York Region is not adjacent to Lake Ontario, and the City of Toronto was not able to share its capacity, the YDRSS bypassed Toronto allowing York Region to flourish.

The South Peel Scheme [SPS]

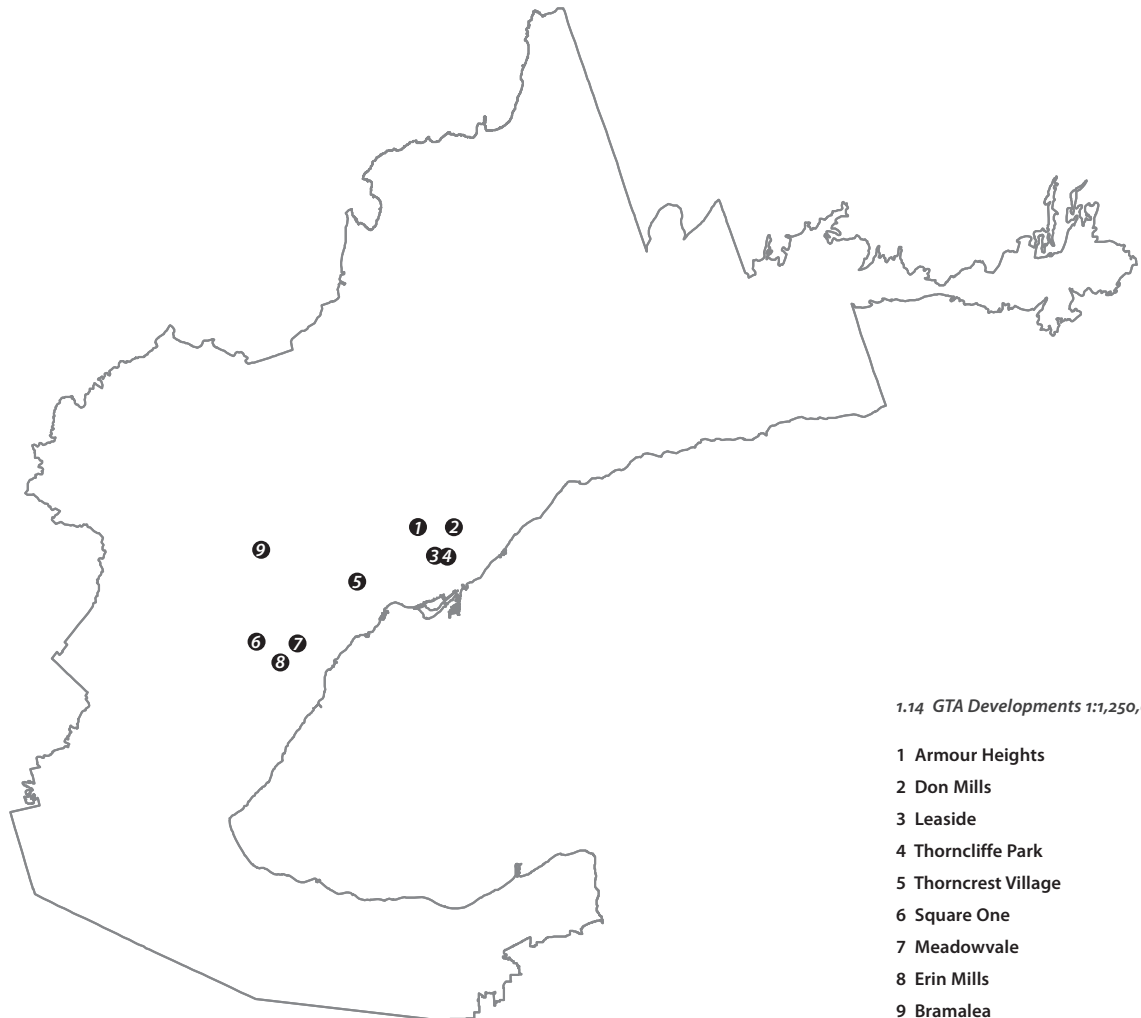
A provincially funded water network giving Peel Region access to Lake Ontario, allowing it to address the growth demands it was experiencing at the time.

¹ White, Richard - p. 47

² ibid - p. 37



1.13 *Armour Heights in 1929*
Photo by Gordon H. Jarrett/Northway Survey Corp. Ltd.



1.14 *GTA Developments 1:1,250,000*

- 1 Armour Heights
- 2 Don Mills
- 3 Leaside
- 4 Thorncliffe Park
- 5 Thorncrest Village
- 6 Square One
- 7 Meadowvale
- 8 Erin Mills
- 9 Bramalea

The “American Dream”

The faith held by many that through hard work, courage, and determination one could achieve a better life for oneself, usually through financial prosperity. As a consequence of the American Dream, young families sought to live in the suburbs where they could own their own home, their own car and pursue the ideal of the “perfect family”.

Pro-Forma

A pro-forma document is a financial model provided in advance of an actual transaction, which demonstrates the eventual profitability of a new urban development.

Pre-selling

The practice of marketing dwellings, selling them before construction has begun. Home buyers would typically visit a model home; choose a building parcel and a variety of options prior to any construction. With down payments and contracts signed, the predictability of profits and return is stabilized. This practice is also very common in the construction of high-rise condominium; the purchaser is committed to ownership without ever seeing the actual space.

Don Mills

The first comprehensively planned suburban development in Toronto, Don Mills accommodated 30,000 residents as well as a mix of housing, offices and factories. Advocating the idea of the neighbourhood unit, a central school is surrounded by low-density housing and community services, all within walking distance to each other. The approach to Don Mills was replicated and became a standard for suburban development throughout the GTA and Canada.

Erin Mills

Built by Don Mills Developments, Erin Mills was a completely planned suburban development including government centres, an educational campus, large apartment towers and smaller residential blocks. As in most post World-War II developments, its functions are completely separated and the street network is arranged in looped hierarchies.

The Developer Led Approach

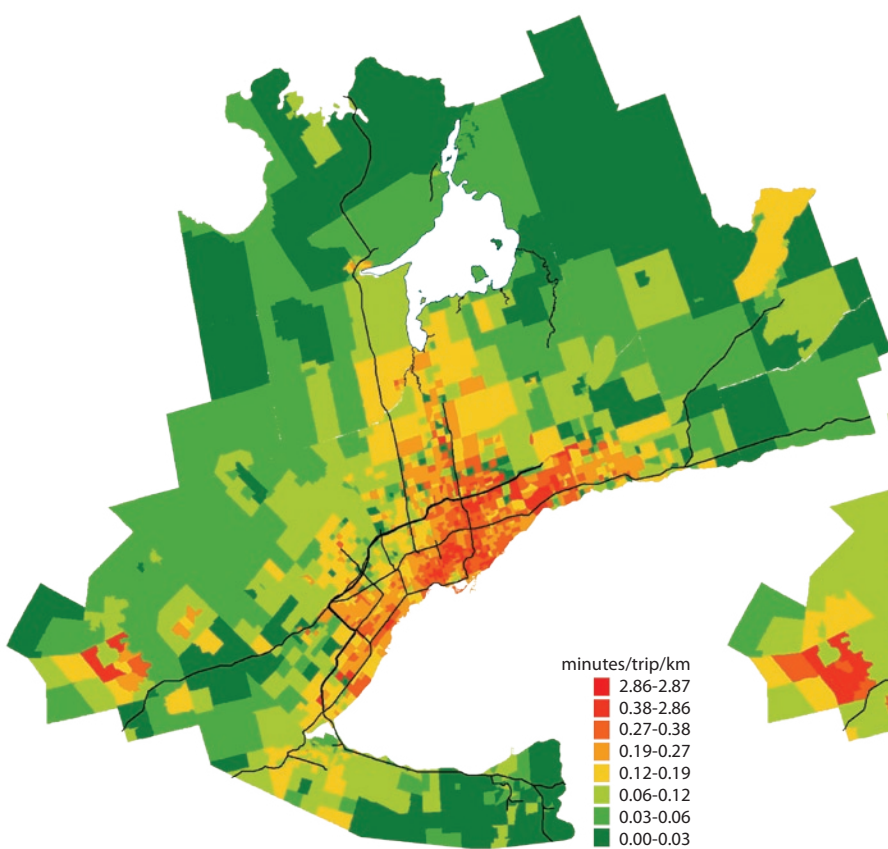
In 1929, the Armour Heights development in York Region changed the way municipalities managed their growth. Up until this point, they had directly financed the construction of all municipal water and sanitary services, and in doing so, limited the speed of development. Armour Heights marked the first time in Ontario that a private enterprise financed a new neighbourhood’s infrastructure.¹ With this approach, the required time for the construction of a development was decreased. In the post World War II era, characterized by high demand for housing and a lack of financing available for services, this model quickly became popular. The large scale development of Don Mills in 1952 ensured that the developer led approach became a standard process in the GTA.

In the private developer led model, the developer provides the steep capital investment required for the construction of the infrastructure for his or her development. These costs are then recovered through a mixture of forgiven development charges, tax rates and the selling price of new lots and houses. When the development is complete, the roads, parks, water and sanitary networks, as well as their servicing and maintenance are then assumed by the local municipality.

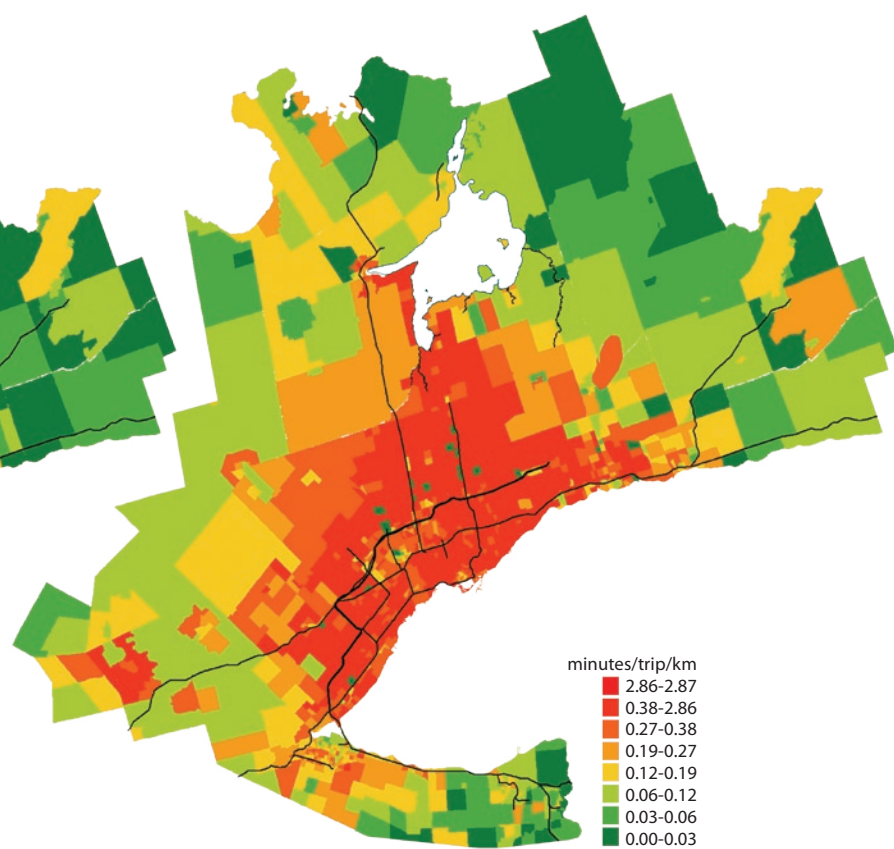
This model is popular because of the symbiotic relationship it creates between municipalities and developers. Municipalities, no longer able to afford the costs of simultaneous servicing multiple developments, are relieved of the financial burden while benefiting from a growing tax base which strengthens their economy. The developer gains access to a predictable market that minimizes risk and maximizes return. Furthermore, after construction is complete, the developer is removed from the equation as all responsibilities are assumed by the homebuyer and the municipality.

To drive costs down using economies of scale, developers also gravitated towards models of mass production for their buildings using simple construction techniques, and inexpensive building materials. The demand for large single-family homes located at the periphery, initiated by the early suburbs of Armour Heights and Don Mills accelerated the popularity of this trend. The widespread use of this model in the GTA has increased the pressure on the municipalities and regions who are responsible for providing infrastructure and services. It has prompted the construction of additional expressways to access these developments, which in turn has generated further growth.

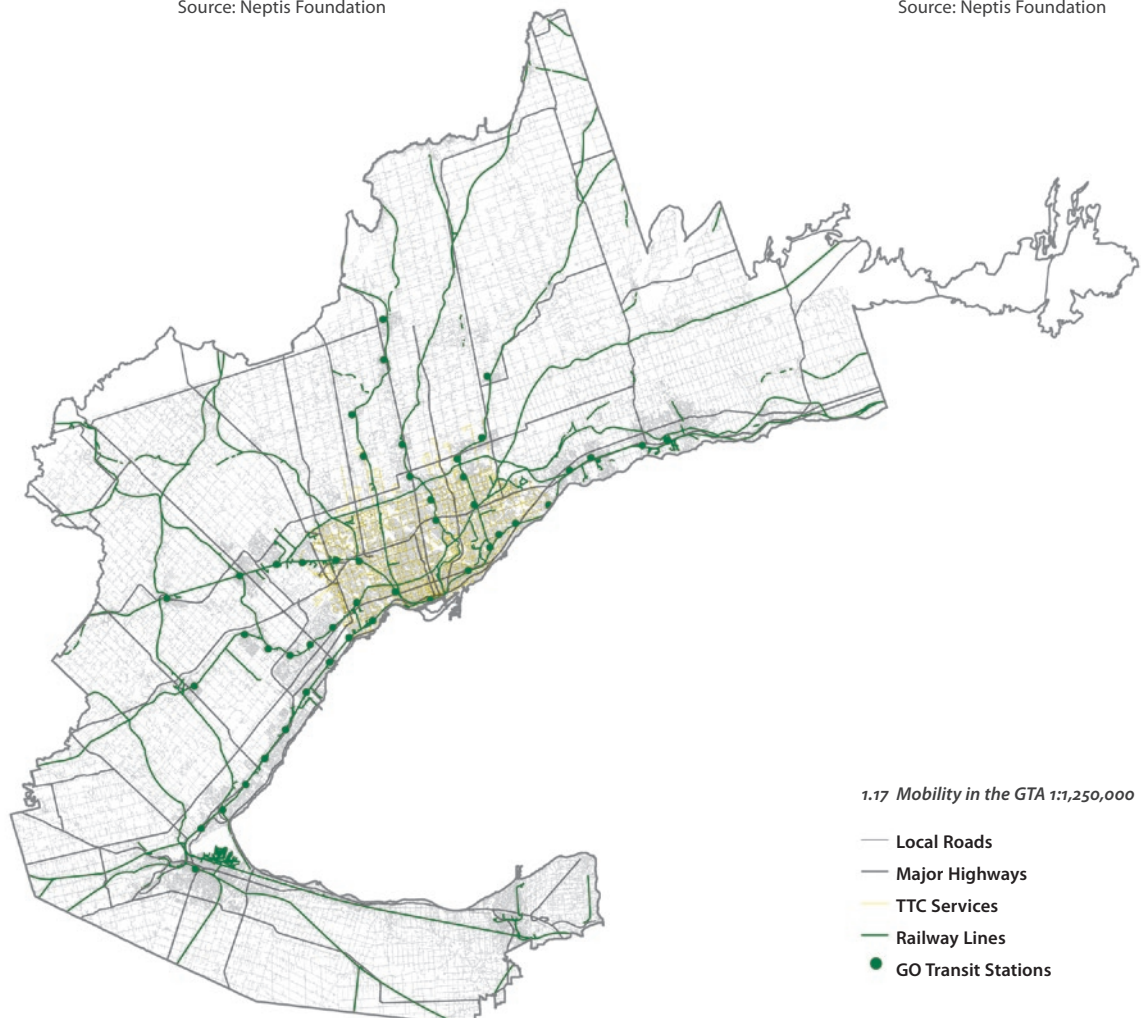
¹ White, Richard - p. 21

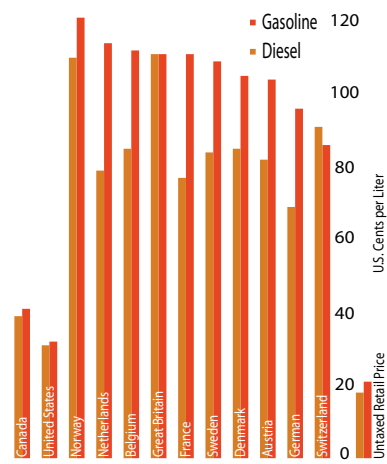


1.15 Average Travel Delay in the GTA 2000 1:2,000,000
Source: Neptis Foundation

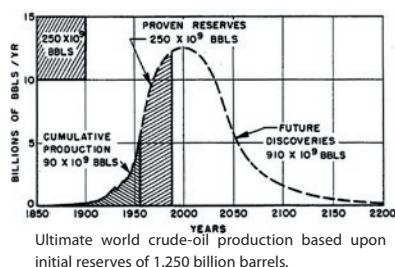


1.16 Average Travel Delay in the GTA 2031 1:2,000,000
Source: Neptis Foundation





1.18 Cost of Gasoline and Diesel by Country 2005
Source: National Research Council



1.19 Hubbert's Peak

Named after American geophysicist Marion King Hubbert, who predicted that the rise in oil production in the continental United States, would peak between 1965 and 1970; and that world production would peak in 2000.

Toronto Transit Commission [TTC]

This Commission operates a public transit network of subways, streetcars and buses serving Metropolitan Toronto. This system is heavily used within the City where access and travel times are comparable with automobile use.

GO Transit [Government of Ontario]

In 1967, the Province began operating GO Transit, a network of commuter rail and bus lines servicing the larger region of the GTA. Operating on a Toronto-centric configuration, this service has been growing steadily since its inception, despite not directly addressing a widely dispersed population. It is this network that will form the basis for a regionally managed transit plan and system.

The 2003 Blackout

On August 14th, 2003, during a major heat wave, a massive power outage occurred throughout the Eastern United States and Canada, affecting over 50 million people.

Mobility, Energy and Oil

The current situation in the Greater Toronto Area is typical of many North American cities. Over the course of the 20th century, extensive growth and its subsequent infrastructure dramatically altered the patterns of mobility in the Toronto region. The baby boom of the post-war era forced a rapid urban expansion which came in the manner of low-density, car-oriented patterns of housing. This growth was supported with the construction and expansion of major highways, which in turn affected the balance and location of employment in the region as it evolved into the GTA.

During the first half of the century, the majority of jobs supporting the GTA economy were located within the City of Toronto. Residents typically commuted by automobile or streetcar from their homes at the periphery to their jobs in the City's core. Access to the 400 series highways changed this older organizing pattern in the late 20th century. Now, a greater proportion of the GTA's jobs are located close to the highway corridors and at their intersections, and residents now travel in all directions across municipal boundaries to get to work. These new patterns are becoming difficult to maintain, as increasing congestion is restricting regional mobility on a daily basis.¹ If current trends continue without change, over the next 25 years automobile travel times could increase dramatically.²

This expectation of mobility may change as the global production of oil reaches its peak within the next decade.³ Shortages are likely to raise fuel prices, significantly affecting the cost of travel. It has been predicted that crossing the 'Peak Oil' threshold will impact nearly all aspects of modern society, as any processes relying on petroleum based products will need to re-visit their methods and consider alternative sources. 'Peak Oil' will hit the car-based culture of North-America particularly hard, as travelers and commuters have grown accustomed to having the some of the lowest fuel prices in the world.⁴

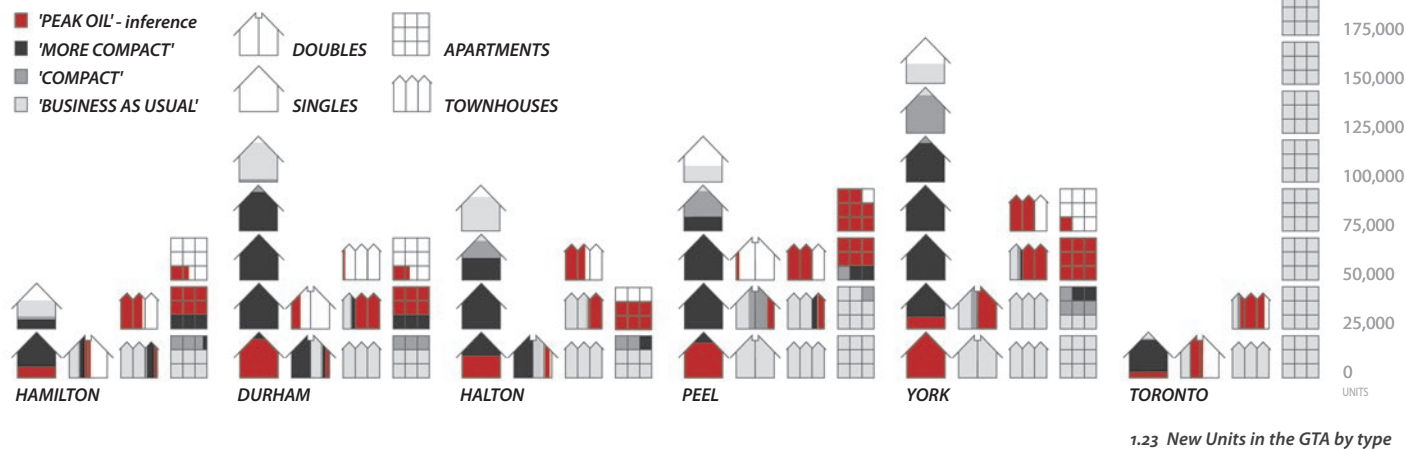
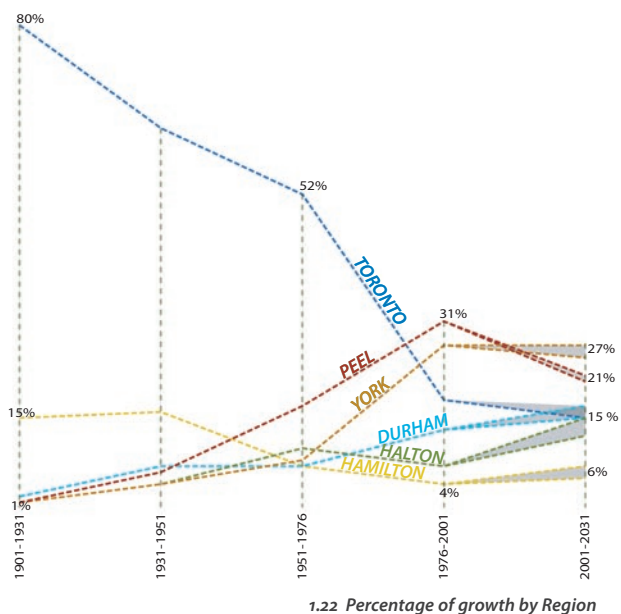
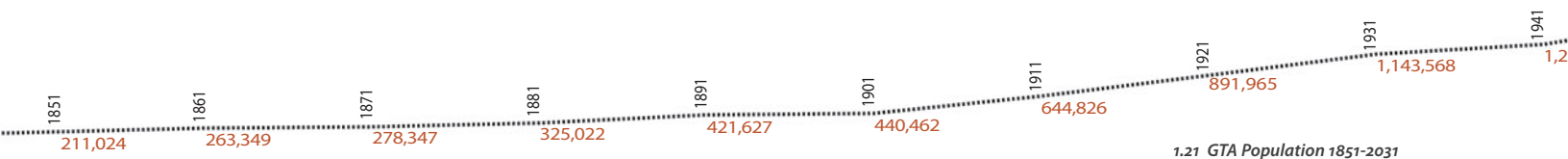
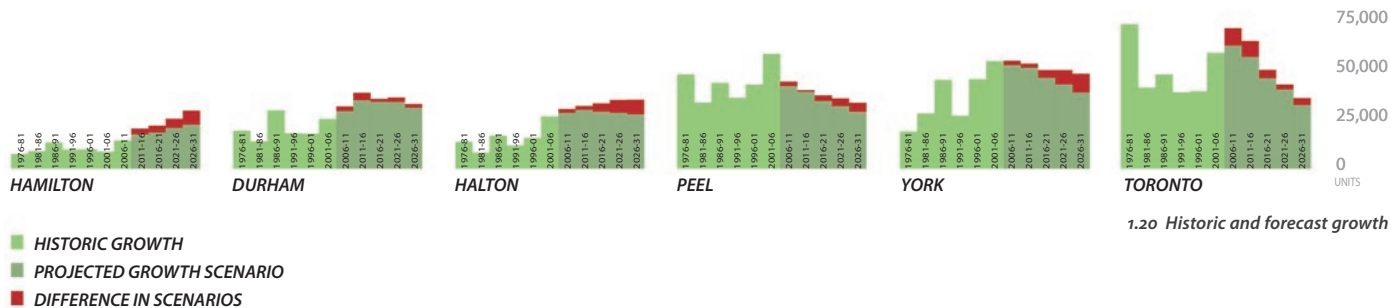
Increased congestion and rising travels costs will inevitably prompt a revaluation of the economic equation for suburban living. The pollution associated with personal transportation is also creating an environmental tragedy in major urban areas. The combination of these factors is creating a condition not unlike the post-war infrastructural and housing crisis; one that demands attention, leadership, and planning. No one will be able to afford, tolerate, or survive life in a city that ignores these challenges.

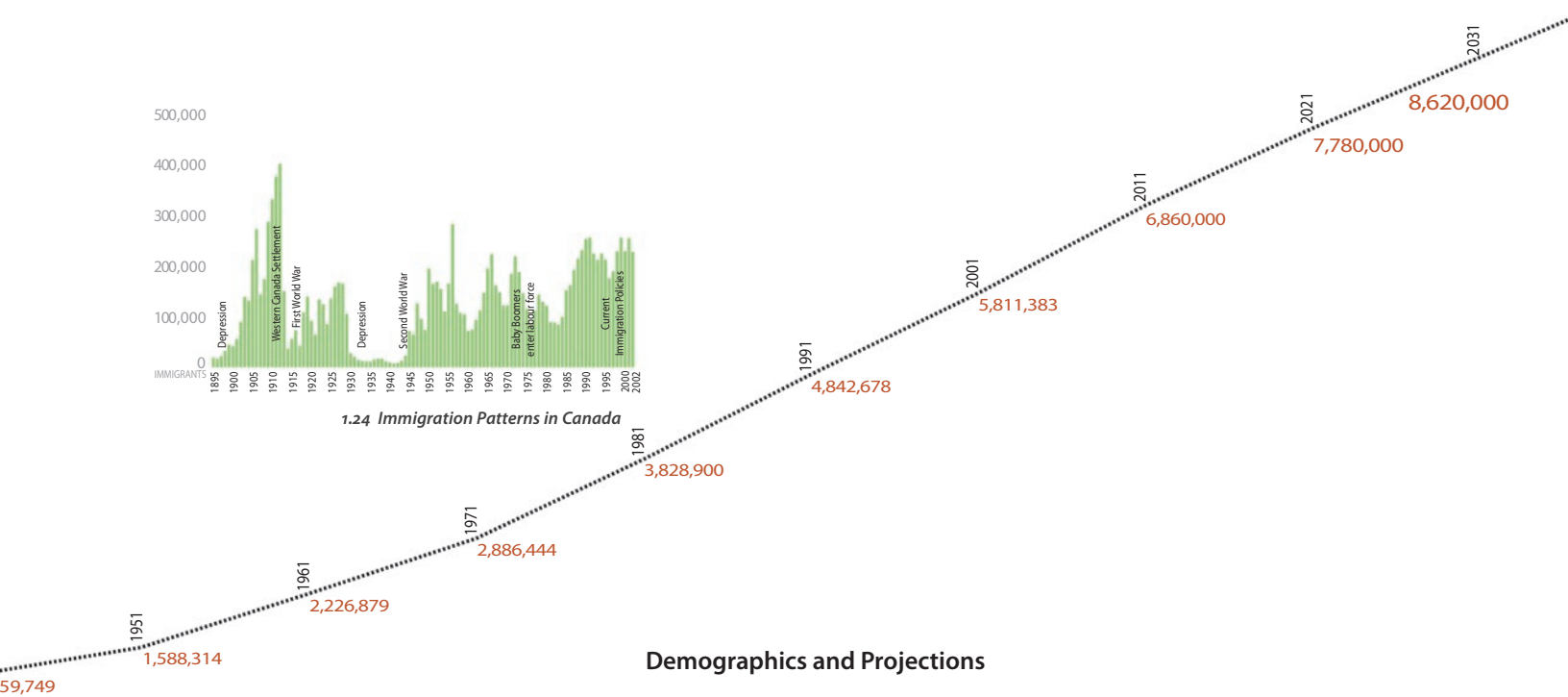
1 Neptis Foundation - Toronto-Related Futures Study

2 ibid

3 Hubbert, M. King - p. 22

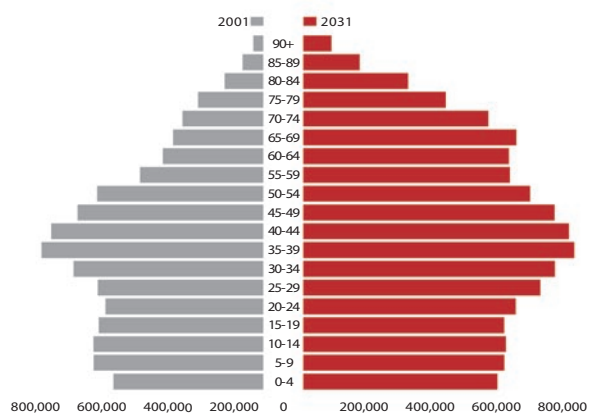
4 National Research Council p.82 (fig 1.18)



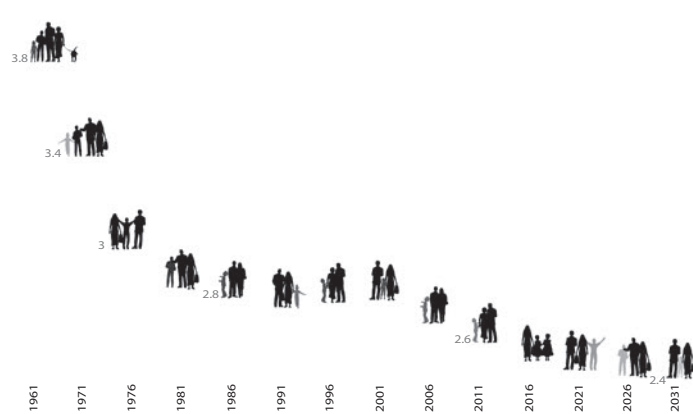


Demographics and Projections

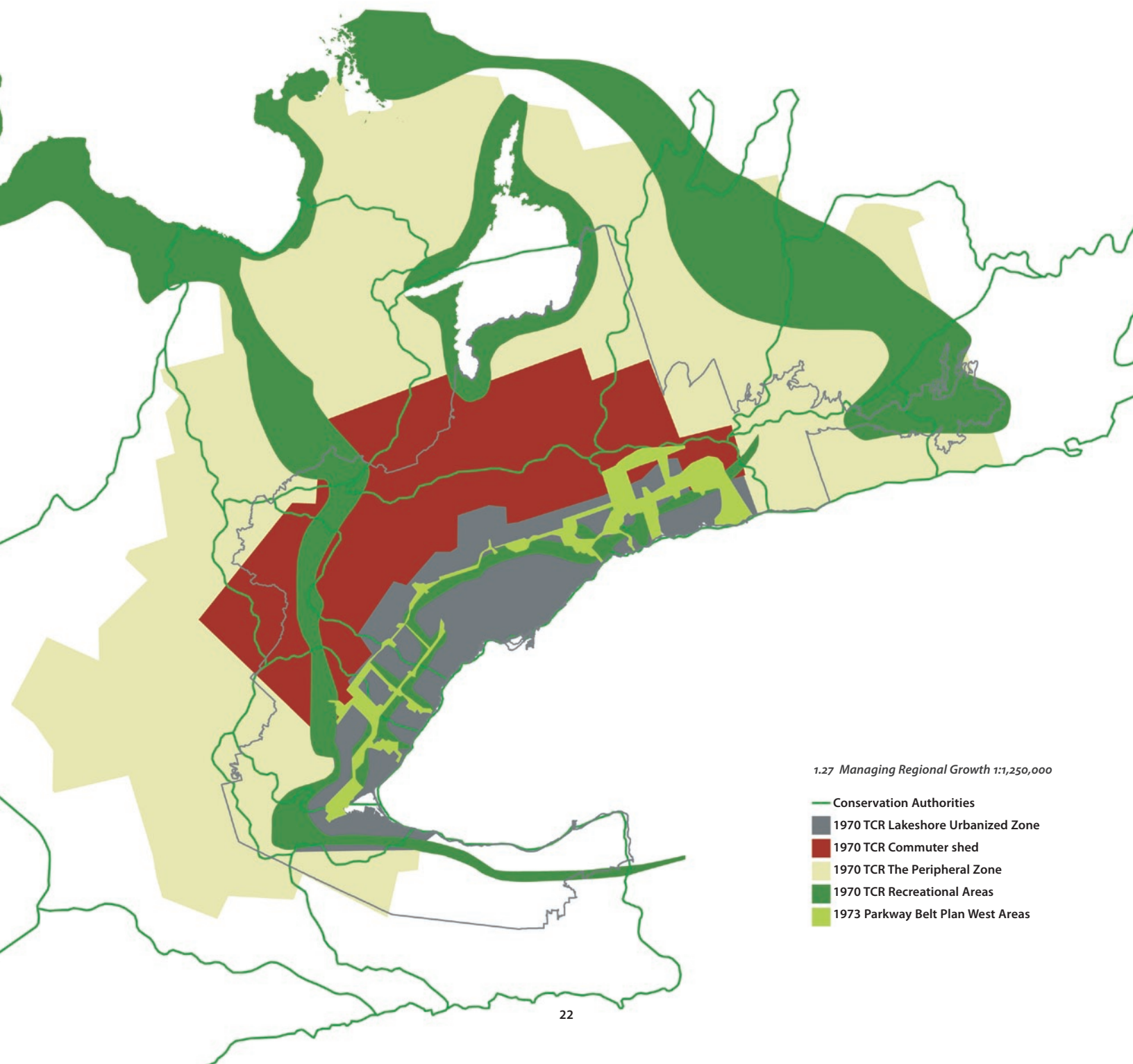
Studies rooted in demographic analysis and historical statistics project the future population growth in the Greater Toronto Area. The policies and land supply areas that form the basis for the Growth Plan are generated from the results of a number of studies commissioned by the Province and other research bodies over the last decade. Primary sources include Statistics Canada, Hemson Consulting's *Growth Outlook for the Greater Golden Horseshoe*, The Neptis Foundation's *Toronto Related Region Futures Study*, and the Ontario Growth Secretariat's *A Current Assessment of Gross Land Supply in the Greater Golden Horseshoe*. These studies have informed details of the Plan, affecting the quantity and the type of growth that is expected to occur.



1.25 Age Structure in the GTA 2001 and 2031



1.26 Historic and Forecast Household Size



1.27 Managing Regional Growth 1:1,250,000

- Conservation Authorities
- 1970 TCR Lakeshore Urbanized Zone
- 1970 TCR Commuter shed
- 1970 TCR The Peripheral Zone
- 1970 TCR Recreational Areas
- 1973 Parkway Belt Plan West Areas

Conservation Authorities

Conservation Authorities were established to oversee the protection watersheds and to manage growth in their floodplains.

Toronto-Centred Region [TCR]

Never implemented, this plan directed growth to the east and west of Toronto, along Lake Ontario, opposing the demand that was drawing growth to the north of the Metro Toronto.

Parkway Belt West Plan

The Parkway Belt West Plan was implemented with the intention of creating a multi-purpose utility corridor, urban separator and linked open space system.

Office for the GTA and the GTCC

These two committees were formed to bring the GTA regions together to enable a coordinated approach to growth management and to give special attention to the densely-populated region.

Greenspace for All

Report published by Ron Kanter M.P.P., this report outlined the key areas to be included in a regional greenlands system. It also proposed mechanisms and implementation strategies to appropriate and enhance greenlands.

The Golden Task Force

The Task Force proposed a reworking of the Political framework in the GTA which would dismantle the existing regions and create a single Greater Toronto Council.

Greater Toronto Transportation Authority [GTTA]

This authority was been created to unite the transportation management over the whole of the GTA. Transportation other than Provincial highways and GO Transit had previously been managed regionally.

Regional Growth Management in Ontario

1946 - Conservation Authorities Act is passed.

1948 - 1966 Several Conservation Authorities are formed across the Greater Toronto Area.

1953 - Metropolitan Toronto is amalgamated.

1965 - 1985 Niagara Escarpment Plan is drafted and approved

1970 - The *Toronto-Centred Region*

1971 - Amalgamation of the Regional Municipality of York

1973 - *Parkway Belt West Plan*

1974 - Amalgamations of the Regional Municipalities of Peel, Halton and Durham.

1987 - The Greater Toronto Coordinating Committee [GTCC] and the Office for the Greater Toronto Area [OGTA] are established.

1988 - The Royal Commission on the Future of the Toronto Waterfront is formed.

1990 - *Green Space for All: Options for a Greater Toronto Area Greenlands Strategy* is released

1991 - Sewell Commission is formed

1990's - Regional Official Plans are introduced in the GTA.

1995 - *Golden Task Force* is created.

1990's - The Neptis Foundation is formed

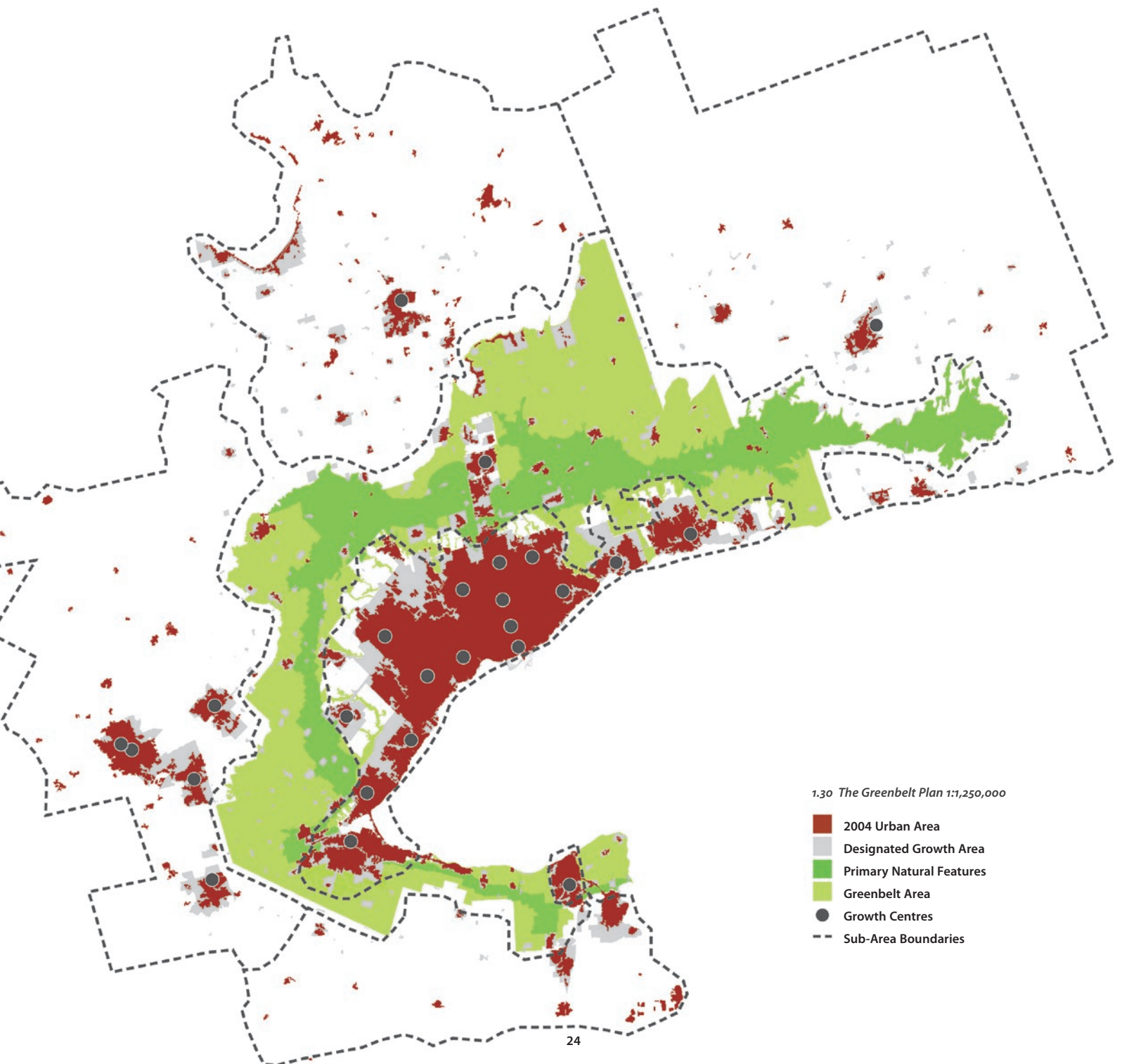
1999 - Greater Toronto Services Board is established.

2003 - *Shape the Future* report released by the Central Region Smart Growth Panel. The Ministry of Public Infrastructure and Renewal is created.

2004 - Greenbelt Task Force is established and releases a discussion paper. Greenbelt Protection Act is passed.

2005 - *Greenbelt Plan* released. *Places to Grow - Draft Growth Plan for the Greater Golden Horseshoe* is released.

2006 - Greater Toronto Transportation Authority [GTTA] is created. *Places to Grow - Growth Plan for the Greater Golden Horseshoe* is released.



The Greenbelt Today

"First, he saw the belt of country as a means of preventing the inordinate growth of a town beyond the point where its facilities and services became overloaded. Secondly, he intended the rural belt as an agricultural reservation which would ensure the bulk of the town's food supply. Thirdly, the rural belt was visualized as a place for recreation and a place in which reserves of recreational land could be retained to satisfy future demands."

Ebenezer Howard - *Garden Cities of Tomorrow*¹

The Greenbelt Plan

Produced by the Ministry of Municipal Affairs and Housing, the Greenbelt Plan defines the Greenbelt area and focuses on conservation policies, agricultural and recreational strategies and development limitations. The Plan was released in draft format in 2004 and its final version was released in the summer of 2006. The Greenbelt Plan is authorized by the Greenbelt Act 2005, a law permitting the creation of a provincial Greenbelt.

Places to Grow

The Proposed Growth plan for the Greater Golden Horseshoe. This document produced by the Ministry of Public Infrastructure and Renewal (PIR) outlines the visions, strategic policies and growth areas from now until 2031. The Places to Grow Plan is authorized by the Places to Grow Act, a law passed in 2005 permitting the creation of provincial growth plans.

Greater Toronto Area + Hamilton [GTAH]

The urbanized conglomerate of the Golden Horseshoe that touches Lake Ontario.

Outer Ring

Townships and regions which are outside of the GTAH, and have the majority of their urban areas on the other side of the Greenbelt.

Growth Centres

Twenty five specific areas have been selected as targets for increased density and intensification. These targeted areas range from strong existing centres to unbuilt areas on the fringe.

Sub-Areas

The Places to Grow plan suggests an additional level of political discussion structured around geographic and urbanized conditions that transcend existing regional and municipal boundaries. The five proposed sub-areas are based on the natural conditions, growth pressures and other issues specific to each part of the region.

Following years of studies and reports outlining the major issues and restraints within the region, in 2004 the Province of Ontario tabled a plan designed to address the problems affecting long term growth in the Greater Golden Horseshoe. Several provincial ministries collaborated on the development of a strategy to preserve natural areas and direct regional growth. This strategy, the Greenbelt for the Greater Golden Horseshoe, is composed of two plans developed in tandem and intended to work together to create a more sustainable and competitive urban region.

The *Greenbelt Plan* protects 761,000 hectares of sensitive natural areas and agricultural land from uncontrolled growth². It is structured around the existing conservation plans now protecting the Niagara Escarpment and the Oak Ridges Moraine. Combined with these primary natural features, the additional lands protected by the Greenbelt form a continuous ribbon around the GTA, linking ecological areas together and preserving valuable agricultural land.

Places to Grow: The Proposed Growth Plan for the Greater Golden Horseshoe focuses its attention on managing land supply for urban development and growth. It stipulates where growth will be directed across the GTA and Southern Ontario, as far as Kitchener, Barrie, Peterborough and Niagara Falls. The Growth Plan legislates specific density and intensification targets that regional and municipal governments can work towards meeting.

The Greenbelt and Places to Grow Acts were passed in to law in February 2005 and June 2005 respectively, granting the province the authority to introduce the Greenbelt and growth management plans. The Greenbelt Plan was released in February 2005, and draft versions of Places to Grow were released in February and November of 2005, and the final version released in June 2006. By law, these provincial plans affect all development proposals approved since December 2004, in addition to all forthcoming development in the GGH. The Greenbelt is seen as a permanent initiative and the Growth Plan currently has a time frame of 25 years. The effectiveness of both plans will be under continuous scrutiny, and will be formally reviewed every five [Growth Plan], and ten [Greenbelt Plan] years.

In the Growth Plan, the province has proposed a level of governance which transcends existing regional and municipal boundaries. Five sub-areas are designated to promote collaboration on issues which bridge jurisdictional borders. Urban and economic areas as well as bio-regions, watersheds and natural features rarely align with existing political boundaries. The notion of sub-area management suggests an eventual recomposition of regional governments based on shared geographic and economic conditions.

1 Thomas, David - London's Greenbelt

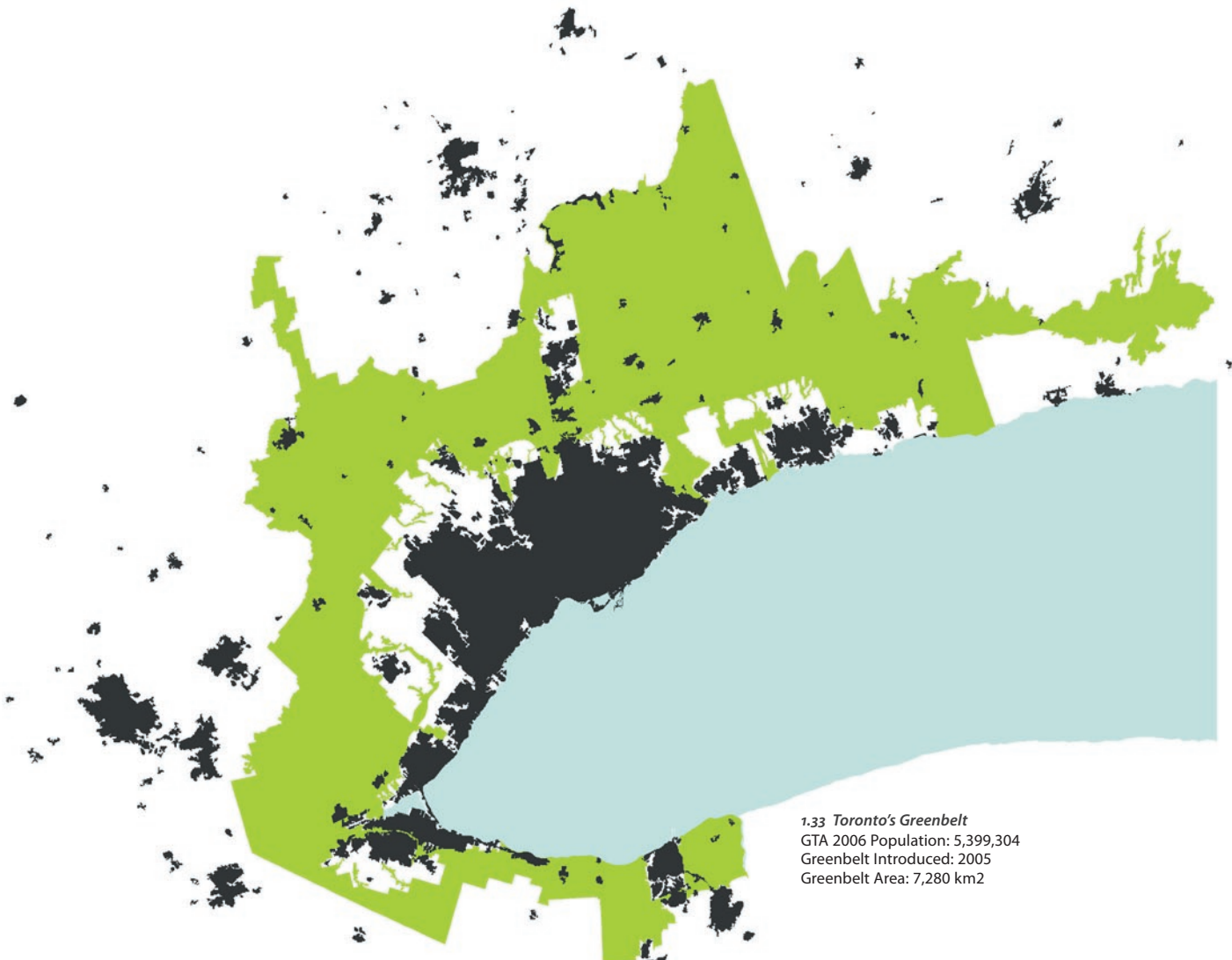
2 Neptis Foundation - Commentary on the Draft Greenbelt Plan - p. 3



1.31 *Vancouver's Greenbelt*
2001 Population: 1,986,965



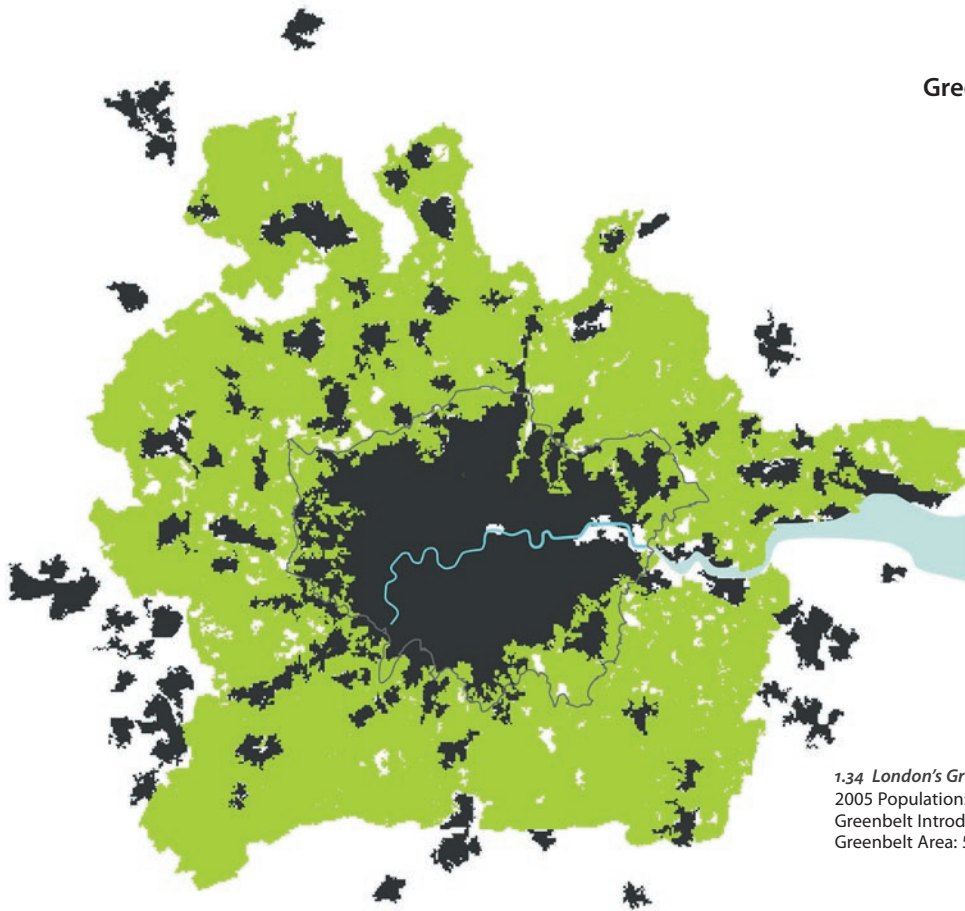
1.32 *Ottawa's Greenbelt*
2001 Population: 774,075
Greenbelt Introduced: 1956
Greenbelt Area: 203.5 km²
Urban Area: 4,715 km²



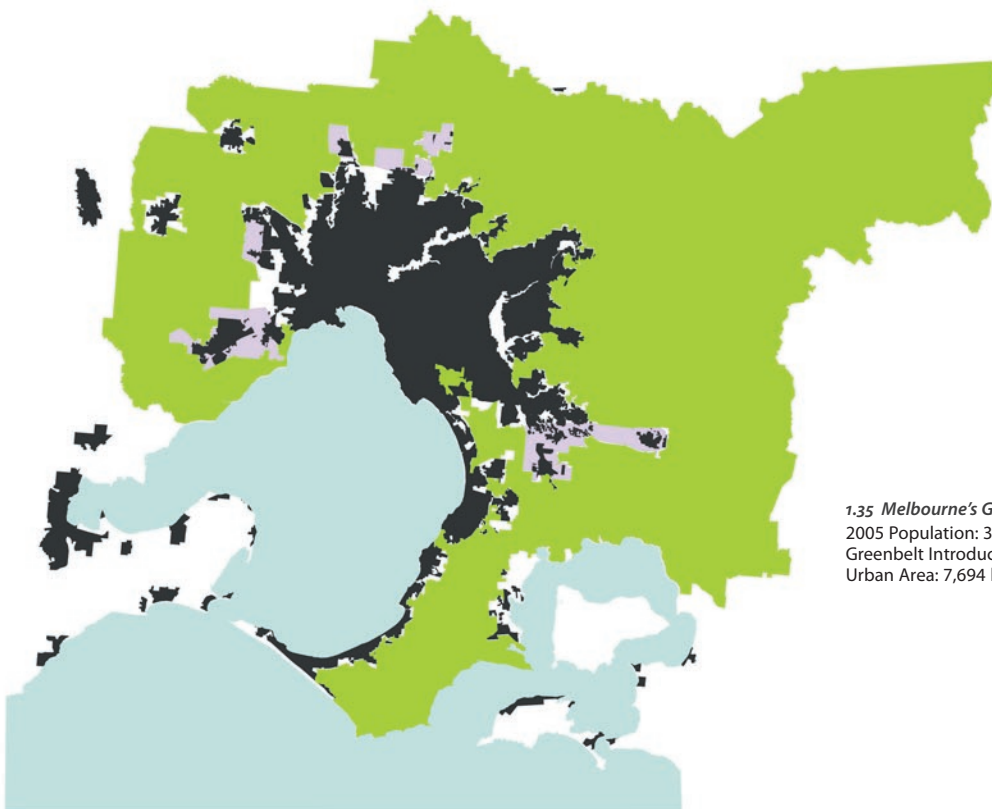
1.33 *Toronto's Greenbelt*
GTA 2006 Population: 5,399,304
Greenbelt Introduced: 2005
Greenbelt Area: 7,280 km²

Greenbelt Precedents

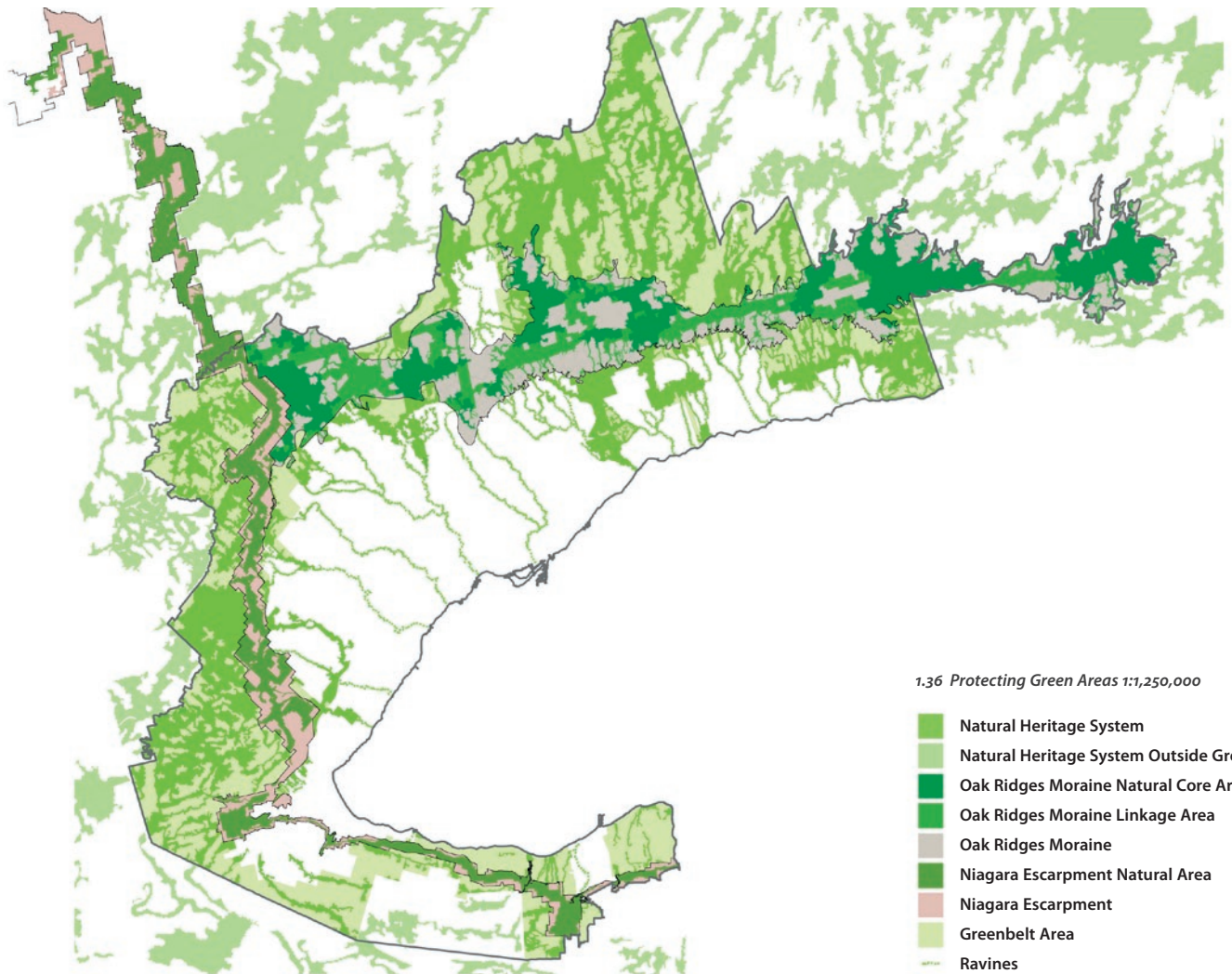
All plans at 1:1,250,000



1.34 London's Greenbelt
2005 Population: 12,000,000
Greenbelt Introduced: 1944 - 1958
Greenbelt Area: 5,133 km²



1.35 Melbourne's Greenbelt
2005 Population: 3,634,233
Greenbelt Introduced: 1972
Urban Area: 7,694 km²



The Natural Heritage System

Composed of sensitive natural corridors and features, the natural heritage system is a continuous ecological network reaching across the GGH. A cornerstone in the Greenbelt plan, the natural heritage system will be encouraged to expand by connecting additional features to the large mosaic.

Sensitive Areas

Areas within the Greenbelt that are reserved for special purposes. These areas are of particular significance, having either delicate ecosystems such as wetlands, or the capability to grow certain fruits.

Green linkages

Green corridors established to link significant or sensitive natural areas together in order to promote biodiversity and increase ecosystem complexity.

Green Areas of the Greenbelt

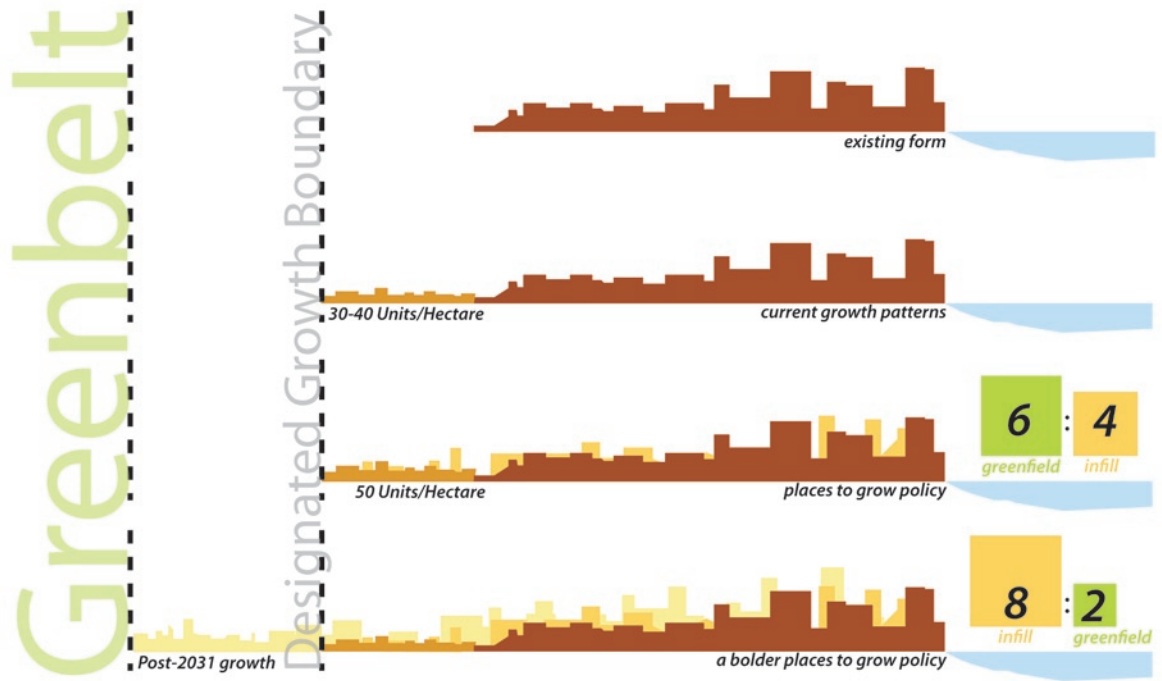
The Greenbelt Plan is composed of a combination of previously protected areas and additional protected greenlands. The *Niagara Escarpment Plan*, the *Oak Ridges Moraine Conservation Plan*, the *Parkway Belt West Plan* and the *Rouge North Management Plan* account for a little under half of the area protected by the Greenbelt.¹ The main goals and working principals of the Greenbelt Plan are to restrict uncontrolled development, protect sensitive ecological and agricultural areas, and unify the regional network of green spaces.

While urban development will generally be discouraged from happening on Greenbelt lands, it will not be entirely banned. Policies regarding existing settlements and agricultural operations have been written to clarify this. The basic rule however, is that aside from municipal growth designations of existing settlements, land can no longer be subdivided in order to create multiple residential properties.

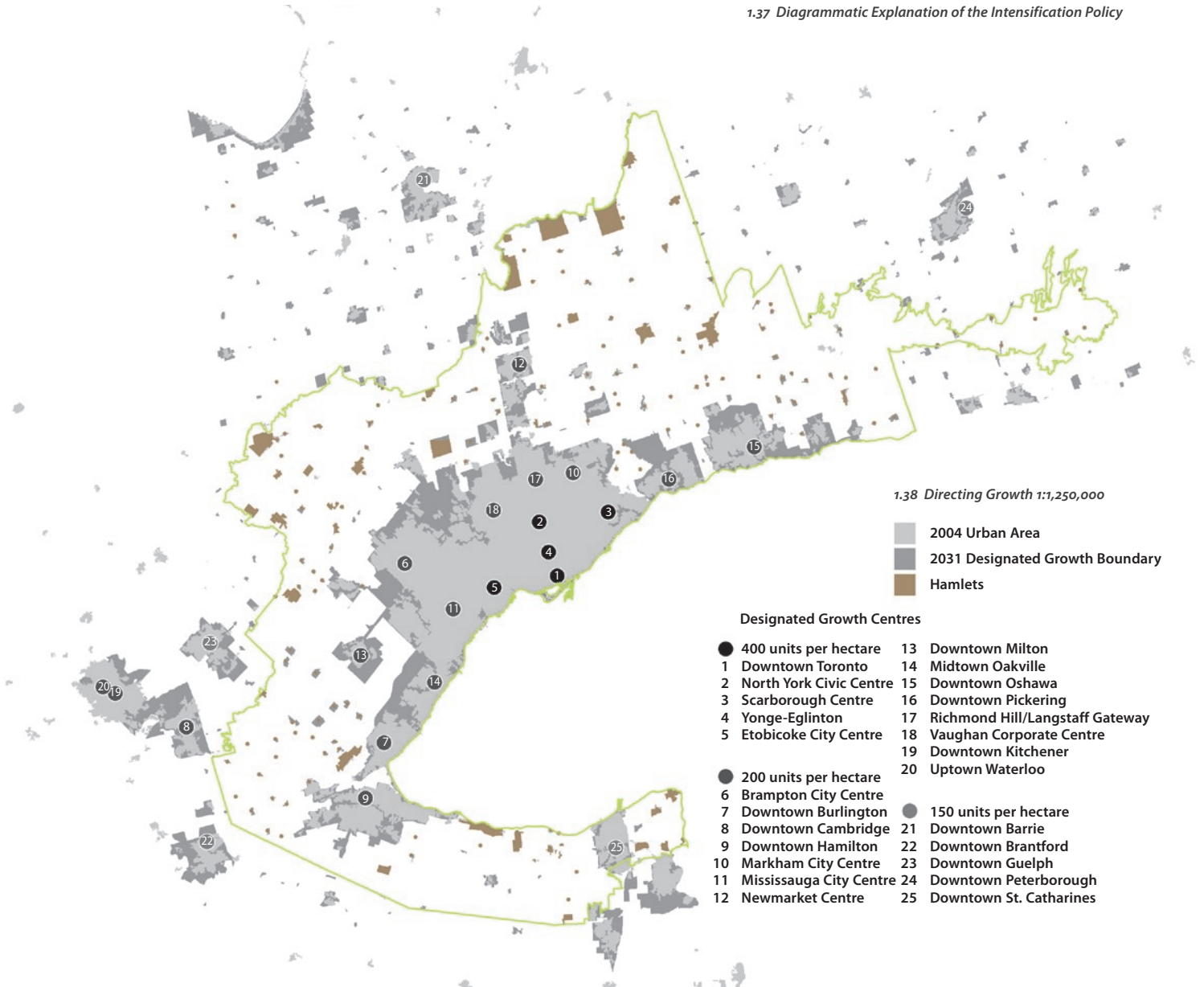
The creation of a continuous Natural Heritage System throughout the Greater Golden Horseshoe means that environmentally sensitive areas will be connected to one another in order to strengthen ecological integrity and promote biodiversity across the region. There is an intent to make this natural system widely accessible to the public as a regional amenity.

While the Province of Ontario has not revealed the precise methodology used in defining the Greenbelt boundaries, particular boundary details have been debated, questioned and appealed since the first map was produced.

¹ Neptis Foundation - Commentary on the Draft Greenbelt Plan - p. 3



1.37 Diagrammatic Explanation of the Intensification Policy



Complete Communities

Communities designed to be self-sufficient including a variety of housing and jobs, as well as the appropriate transit, servicing and amenities to foster pedestrian friendly environments.

Greenfield development

Development on designated lands that have not been previously built upon, and are not contaminated.

Hamlets

Communities within the protected Greenbelt area. These towns and villages are permitted to grow within their own designated boundaries.

Brownfield development

Development on contaminated or obsolete industrial lands.

Intensification

Urban development that is constructed within an existing community, usually occurring on vacant properties or space within the urban fabric.

Growth Areas of the Greenbelt

The Places to Grow Plan will significantly change the way in which the GTA has been growing for the last 50 years. The Province of Ontario has established an urban growth boundary effectively limiting the supply of undeveloped greenfield land until the year 2031. The additional land that has been designated for greenfield expansion amounts to 70,700 hectares¹. Development on greenfield lands will be subject to growth policies legislating minimum density and general guidelines affecting the configuration of new communities.

The Growth Plan also advocates that all new development will be *complete communities* designed to accommodate a mixture of jobs, housing types, schools, retail, and community infrastructure. As well, convenient access to public transportation and options for safe, non-motorized transit will be required. New communities in all greenfield developments inside the Greenbelt will be built to a minimum combined density of 50 residents and jobs per hectare averaged over all designated land in that region. Regions in the outer ring are required to meet an average density of 40 residents and jobs per hectare with all new development.

Aside from the established urban growth boundary, the pinnacle of the Growth Plan is likely to be the intensification policy, which states that regions will have 10 years to reach a minimum intensification rate of 40 per cent. This means that by 2015, 40 per cent of all development will be happening within existing built-up areas. While the province has proposed these basic initiatives to direct the nature of development, the plan depends on regional and municipal governments to enforce the policies. Places to Grow mandates that regional and municipal official plans correlate, specify, and elaborate on the provincial policies.

The Growth Plan specifies twenty-five growth centres across the region, with density targets of 150, 200 or 400 combined residents and jobs per hectare. The existing conditions of these growth centres vary from established city centres and older small towns to new communities still under construction. Regional governments will be responsible for phasing and allocating development on designated greenfields while directing intensification to these targeted areas.

Since the inception of the Growth Plan, certain details have been continually raised in an ongoing debate about its priorities, effectiveness and feasibility. The most ambiguous detail - the fact that the Greenbelt boundary and the growth boundary do not meet - raises questions about the fate of the space between, and about the permanence of the boundaries themselves.

¹ Ministry of Public Infrastructure Renewal
- Draft Growth Plan for the Greater Golden
Horseshoe - p. 22

“Ontario cannot afford to take an ad-hoc approach to dealing with this growth. Sprawling development, inefficient use of infrastructure, and isolated communities carry with them high social, environmental, and economic costs. These costs not only undermine the high quality of life that Ontarians expect, but also severely inhibit the Province’s ability to attract skilled workers and compete with other jurisdictions around the world.”

- Ministry of Public Infrastructure and Renewal

“Ontario, and the Greater Golden Horseshoe (GGH) in particular, has long been and will continue to be the economic engine of Canada. The prosperity created here provides its residents, and indeed all Ontarians and Canadians, with a quality of life and standard of living that is envied around the world.”

- Places to Grow (Draft Growth Plan for the Greater Golden Horseshoe Feb. 2005) section 1.2 on economic growth.

On The Growth Plan

“Places to Grow must look beyond the current horizon and define strategic employment nodes, deliver a predictable, competitive and long term land supply that will sustain housing choice and affordability, and address the infrastructure deficit.”
- Urban Development Institute [1]

“Sub-area strategies introduce another new layer of planning policy in the Golden Horseshoe. This new layer would be in addition to the growth plan itself, the provincial policy statement, local and regional official plans, the greenbelt plan, the Oak Ridges moraine conservation plan, the Niagara Escarpment plan, watershed plans and source water protection plans.” - Ontario Professional Planners Institute [1]

“Right now, we’re using a carrot-and-stick approach without a carrot. So we absolutely need, in conjunction with this plan, the funding ideals by the government. That’s really the problem with the plan. If we could achieve 200 people per hectare, great; we would do that. But how will we achieve it? The only way we’re going to achieve it is if there’s some government funding for transportation, for mass public transit, and improved roads for goods and services.” - Ontario Home Builders Association [1]

“As the opposition, we’ve been arguing that it’s been political science, not based on what’s actually on the ground, that’s defined where boundaries of the greenbelt are.” - Mr. Norm Miller (Parry Sound–Muskoka) [1]

On Growth Projections

“OHBA has great concerns that the growth plan is based on growth projections by Hemson Consulting and that the growth plan must conform to these projections. In our opinion, these projections are not true demand projections, but rather targets based on the policy of the growth plan. It is completely unacceptable that these projections be imposed without a peer review or any input from stakeholders.” - Ontario Home Builders Association [1]

“The plan contains population and employment projections that assume that growth patterns at the scale of upper-tier and single-tier municipalities will continue unchanged. Neptis questions the wisdom of entrenching business-as-usual growth projections in the plan.” - Neptis Foundation [2]

“Dunning cautions against assuming that the rate and form of housing market growth associated with the recent economic boom will continue indefinitely. His projections indicate that growth in population, jobs, and dwellings between 2005 and 2031 is likely to be considerably lower than in other recent forecasts commissioned by Neptis and the Ontario government.” - Neptis Foundation [3]

“alternative scenarios developed for the Ontario Smart Growth Panel, while requiring substantial interference in land markets that would cause a spike in housing prices, envisioned an urban area that would look in 2031 little different than the scenario described in Business as Usual. For example, the most compact scenario considered by the Ontario Smart Growth Panel would require only 7% less developed land than the Business as Usual scenario.” [4]

On Intensification

“Intensification areas will generally be planned to achieve a density of development that is not less than 200 residents and jobs per hectare.” OHBA believes that this target is too aggressive and impractical to implement. Even townhouses would not fit into this target, since generally a townhouse project would provide approximately 110 residents per hectare. We recommend that growth plan targets for intensification of 200 residents and jobs per hectare be re-evaluated. The objective should be flexible for the different centres and the targets determined by individual communities.” - Ontario Home Builders Association [1]

“the Province proposes to have a minimum density requirement of 50 residents or jobs per hectare in the inner ring and 40 in the outer ring. This figure is simply not high enough to change the unsustainable pattern of development and the resulting travel choices that have plagued our region for the past several decades. According to numerous academic experts, transit-supportive developments require a minimum of 55 persons per hectare in residential areas and 70 employees per hectare in commercial centres. These figures double for higher-order transit services such as rail, which the draft plan explicitly supports.” - Earth Roots [1]

“the intensification target of 40% laid out in the plan is not ambitious enough to contain urban sprawl.”
- Environmental Defence [1]

“The plan’s suggestion of giving municipalities 10 years to achieve the important intensification target will ensure that we won’t see any change to the destructive business-as-usual scenario for the foreseeable future.” - Environmental Defence [1]

The average density of 28 high-income urban areas with populations of more than 3,000,000, is 4,303 persons/km², (2,626 omitting Hong Kong). Toronto ranks 12th - just above the average - with a density of 2,630 persons/km². [Demographia 2004]
“Toronto is, by far, the densest urban area in Canada and is competitive with Los Angeles, the most dense urban area in the high-income New World.” - Wendell Cox [4]

The Greenbelt Debate

- 1 Province of Ontario, Legislative Assembly of Ontario Official Report of Debates no.G33, April 2005
- 2 Neptis Foundation, Commentary on the Ontario Governments' Proposed Growth Plan for the Greater Golden Horseshoe, March 2006
- 3 Dunning, Will, Economic Influences on Population Growth and Housing Demand in the Greater Golden Horseshoe (Report Highlights), January 2006
- 4 Cox, Wendell, Myths about Urban Growth and the Toronto "Greenbelt", December 2004
- 5 Neptis Foundation, A Response to the Ontario Government's Discussion Paper, September 2004

The Greenbelt and Growth Plans present a series of controversial issues with serious implications across the region. In addition to a critique of the basic premise and intent of this Provincial strategy, its growth projections, phasing, boundary establishment methods, and specific policies are under constant analysis and public debate. Simultaneously advocating environmental sustainability and economic prosperity via additional growth, this strategy is in itself a complex argument, attempting to manage two ventures which are destined to meet in compromise. As a result, the provincial government often finds itself grappling with advocates from both sides.

On Highways

"If the goal of the [Places to Grow] act is to promote public transit, as it is stated, the province is shooting itself in the foot by adding new highways, as this addition will only make driving more attractive." - Earth Roots [1]

"While it is true that existing roads can be used, the amount of intensification may create a need for expanded road systems. In most cases, it is not possible to get extra land for more traffic lanes, and therefore the situation causes a strain on existing road infrastructure." - Ontario Home Builders Association [1]

"Highways and other development have bisected wildlife corridors, resulting in habitat destruction for numerous animals, yet they continue to be approved. Ecologically sensitive areas have been paved over in favour of new subdivisions, compromising source water areas and biodiversity as a whole in the Greater Golden Horseshoe. The problems arising from urban sprawl have been well documented by government, academic and environmental institutions, yet every year more and more green space continues to be paved over to build sprawling communities, which we know are unsustainable." - Earth Roots [1]

"People tend to travel farther than planners perceive to be necessary in virtually all urban areas, regardless of the extent of sprawl, passing literally hundreds of thousands of jobs." - Wendell Cox [4]

On Quality of Life

"We wish to point out that new infrastructure for greenfield development does not put additional pressure on the ability of governments to fund infrastructure, as the costs for these are borne by the residential construction industry." - Ontario Home Builders Association [1]

"The fact of the matter is, if my purchaser is going to buy, I'm going to build. What's going to make my purchaser buy a townhouse that's fully intensified in downtown Oshawa versus buying something with a piece of terra firma around them?" - Ontario Home Builders Association [1]

On Agriculture

"The growth of urban land areas is charged with consuming an inordinate amount of agricultural land, thereby threatening the food supply. Reduction in agricultural land, however, is due to increased agricultural efficiency, not scarcity of land." - Wendell Cox [4]

"Places to Grow and the Provincial Policy Statement do not reflect the importance of preserving the essential land base of this industry."

"The expansion of settlement areas into prime agricultural areas is permitted only where the need for the expansion has been justified and only where less valuable agricultural lands are not available."

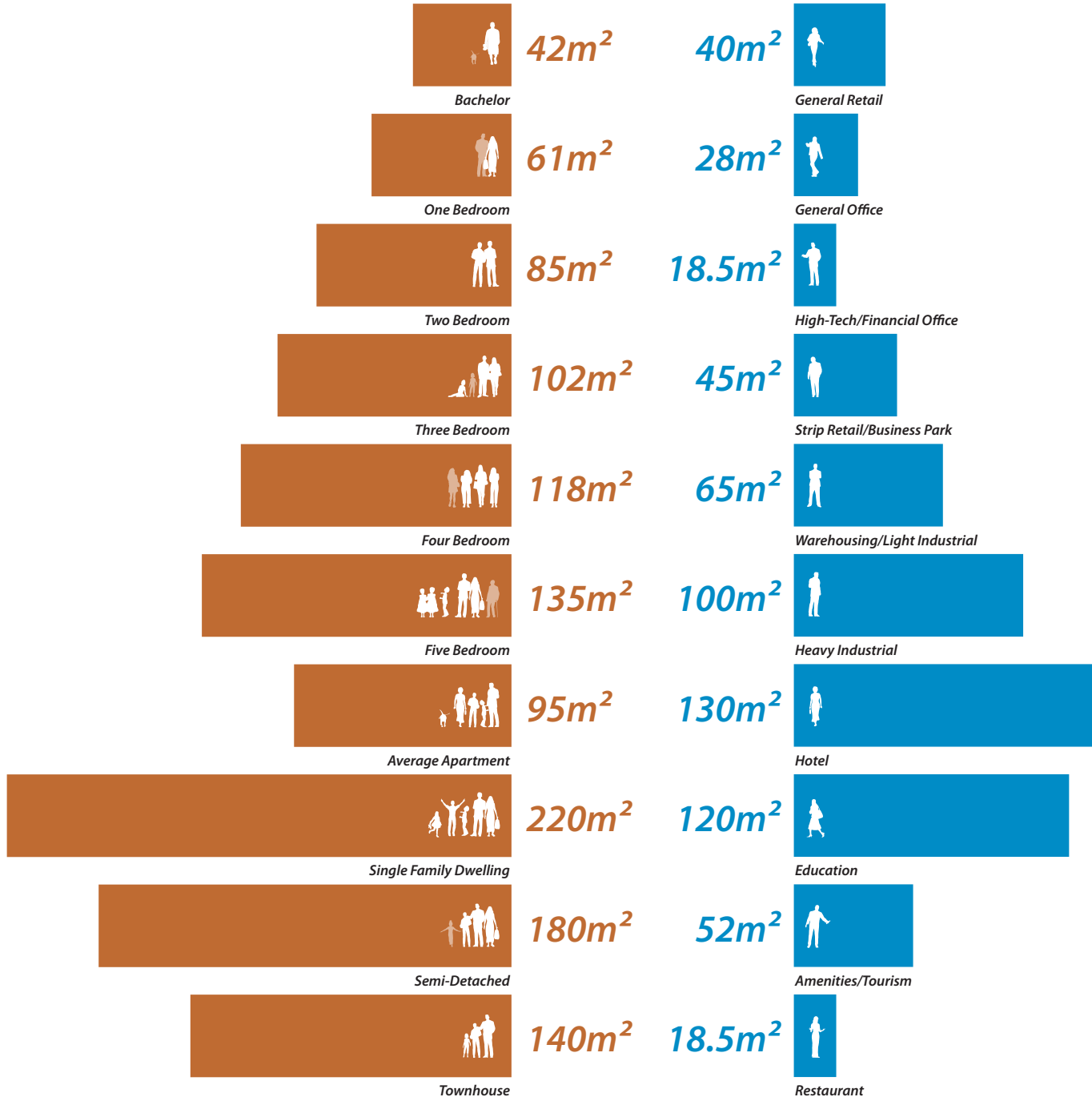
This is a continuation of past policies that have failed to protect valuable farmland – a vital, non-renewable resource in the economy. Farmland within or just outside designated urban boundaries is often owned by development companies and cultivated by tenant farmers who have little incentive to improve the land or ensure its long-term use for agriculture.

Scattered rural development has also fragmented the land base. As a result, it is often assumed that the land has little value as farmland and that it should eventually be made available for development. However, it remains prime agricultural land. With improved farming practices, its ability to support high-value crops can be restored. Even fragmented lands could support specialty crops.

The key is to secure existing agricultural land as a vital and irreplaceable economic resource, particularly prime lands south of the Oak Ridges Moraine and east of the Niagara Escarpment." [5]

Residential Units

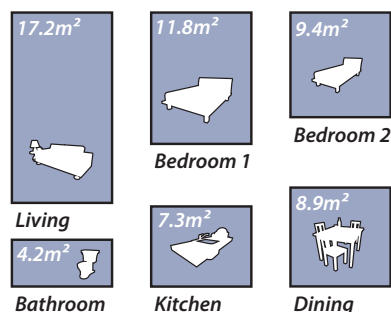
Employment Units



1.39 Average Areas for Typical Residential and Employment Units

The precise definition of a “unit” is not clarified in the Growth Plan. This is understandable, as sizes of dwellings and workplaces vary a great deal, and are difficult to analyze across such a large region.

Diagram 1.39 draws from a variety of sources in order to calculate average areas by type of dwelling or employment. This is not meant to be a guide for design, but rather a ballpark example which illustrates the spatial implications of those types.



1.40 Room Sizes

Typical residential room sizes calculated from an average of several studies, codes, reports and documents.

Density, Intensification and Typologies

Policies concerning density and intensification are fundamental components of the Growth Plan. They will be the devices that realize its intention to create a more compact GTA and GGH by producing tangible results in the development of urban areas. The Growth Plan calculates density by measuring the combined number of residential dwellings and employment units per hectare [UPH]. Measured over the total area within a development (including open spaces and roads) this technique is used to identify the approximate density of a community.

While the Growth Plan specifies minimum densities and targets for the intensification of growth centres, the precise location, quality and typology of built form are in the hands of the regions and municipalities. There are many ways to achieve a range of densities, and the selection of spatial configurations and building typologies is critical. These typologies will dictate the quality and form of the built environment, which are intrinsically linked to its density.

The functions that distinguish typologies depend on the proximity and spatial relationships between units. While the sharing of circulation, amenities and outdoor spaces bring efficiency to residential types of higher density, the nature of those types often has implications on the lifestyles they offer. In comparison, certain low-rise housing types that can offer more private space and accommodate more people per unit, have spatial demands that limit their achievable density. Introducing a variety of typologies will create an array of household sizes and configurations and increase the range of housing choices within an area.

Single Family Dwelling

Detached House

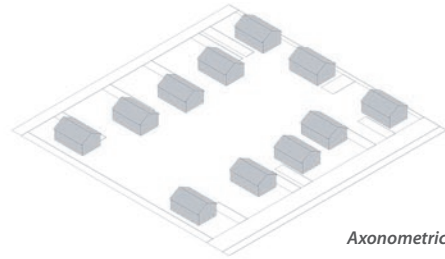
5-15^{UPH}



Elevation



Plan



Axonometric

Semi-Detached

Duplex

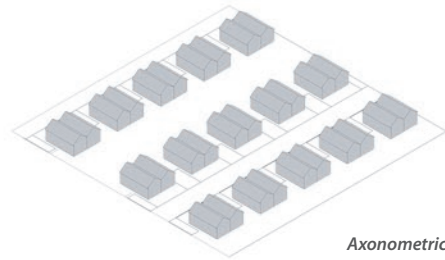
10-25^{UPH}



Elevation



Plan



Axonometric

Townhouse

Row Housing

Terraced Housing

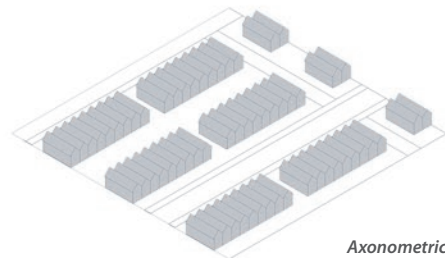
25-70^{UPH}



Elevation



Plan



Axonometric

Walk-up Apartment

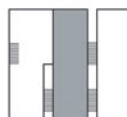
Garden Apartment / Triplex/

Live-work / Flats / Maisonnettes

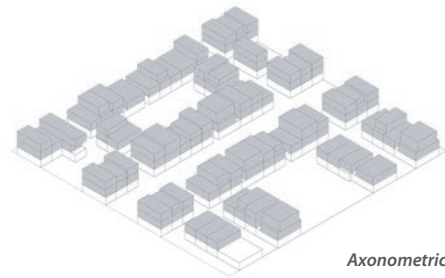
50-90^{UPH}



Elevation



Plan



Axonometric

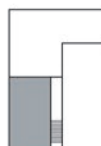
Urban Villa

Multi-Family Dwelling

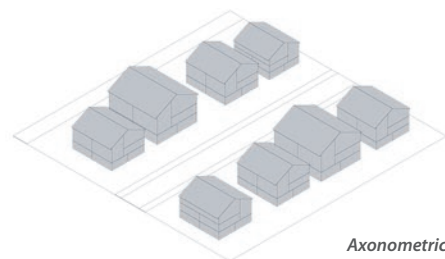
70-100^{UPH}



Elevation



Plan

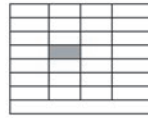


Axonometric

Small Apartment Building

Mini Tower

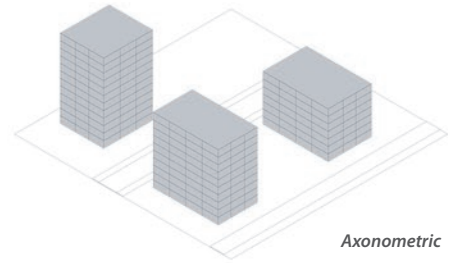
90-150^{UPH}



Elevation



Plan



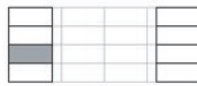
Axonomic

Courtyard Housing

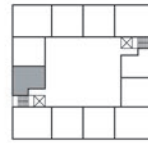
Block Housing

Perimeter Housing

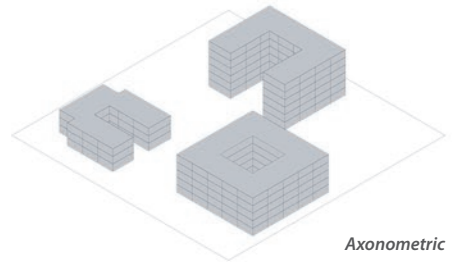
100-200^{UPH}



Elevation



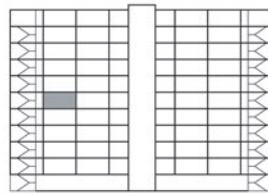
Plan



Axonomic

Single-Loaded Slab

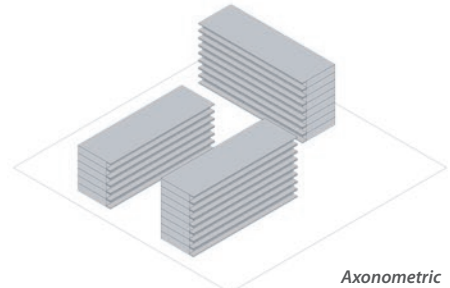
150-300^{UPH}



Elevation



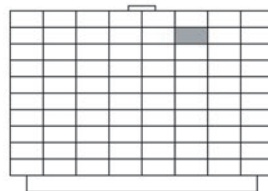
Plan



Axonomic

Double-Loaded Slab

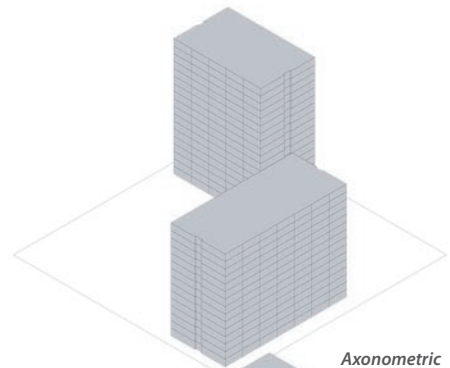
200-400^{UPH}



Elevation



Plan

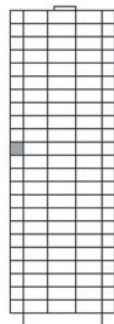


Axonomic

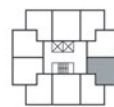
Point Tower

High Rise
Skyscraper

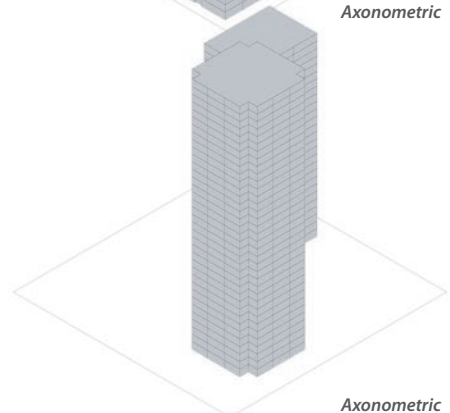
300-500^{UPH}



Elevation



Plan



Axonomic

Street Related

Small Office, Live work, Restaurants
Grade Retail, Corner Store

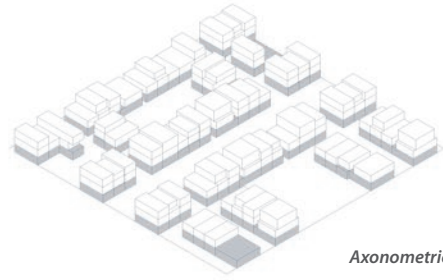
Typical Area:
250 - 500 m²



Elevation



Plan



Axonometric

Strip Retail

Strip Mall
Shopping Plaza

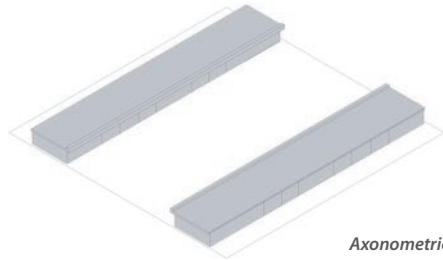
Typical Area:
750-1,250 m²



Elevation



Plan



Axonometric

Small Box

Stand Alone Restaurant

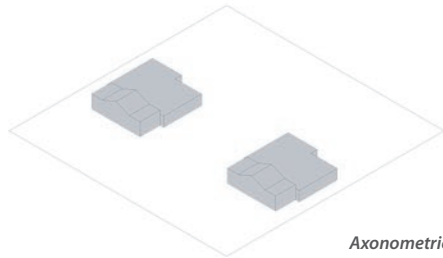
Typical Area:
1,000 - 2,000 m²



Elevation



Plan



Axonometric

Big Box

Box Store

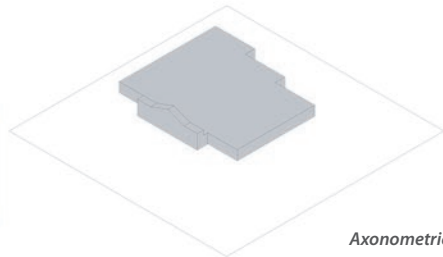
Typical Area:
2,000 - 10,000 m²



Elevation



Plan



Axonometric

Mall

Shopping Centre
Shopping Mall

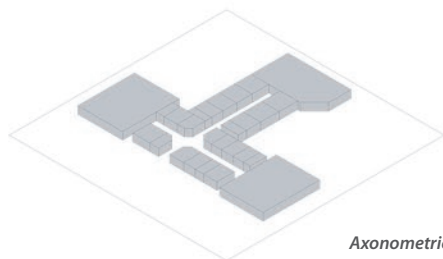
Typical Area:
2,500-7,500 m²



Plan



Elevation



Axonometric

Bigger Box

Super Store, Power Centre
Lifestyle Centre

Typical Area:

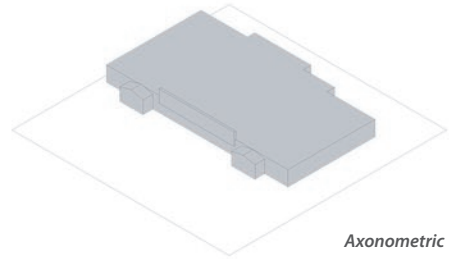
10,000-250,000 m²



Plan



Elevation



Axonometric

Light Industry

Business Park
Warehousing

Typical Area:

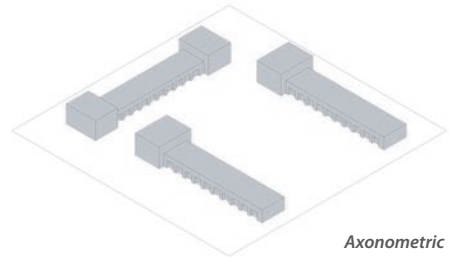
750-1,250 m²



Plan



Elevation



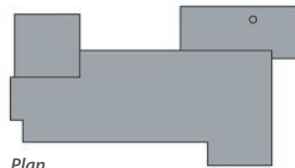
Axonometric

Heavy Industry

Plant
Manufacturer

Typical Area:

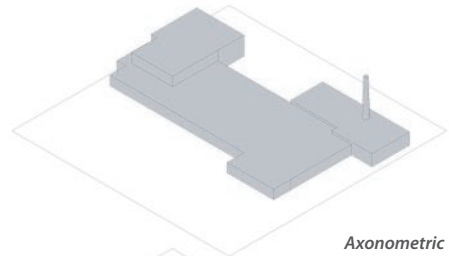
Varies



Plan



Elevation



Axonometric

Commercial Podium

Plaza, Gallery
Concourse

Typical Area:

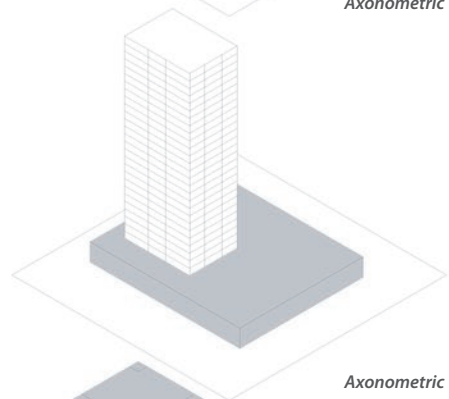
5,000 - 25,000 m²



Plan



Elevation



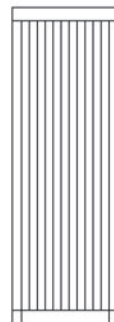
Axonometric

Office Building

Office Tower
Skyscraper

Typical Area:

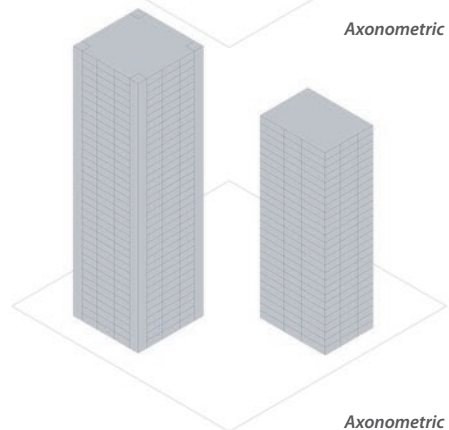
50,000-300,000 m²



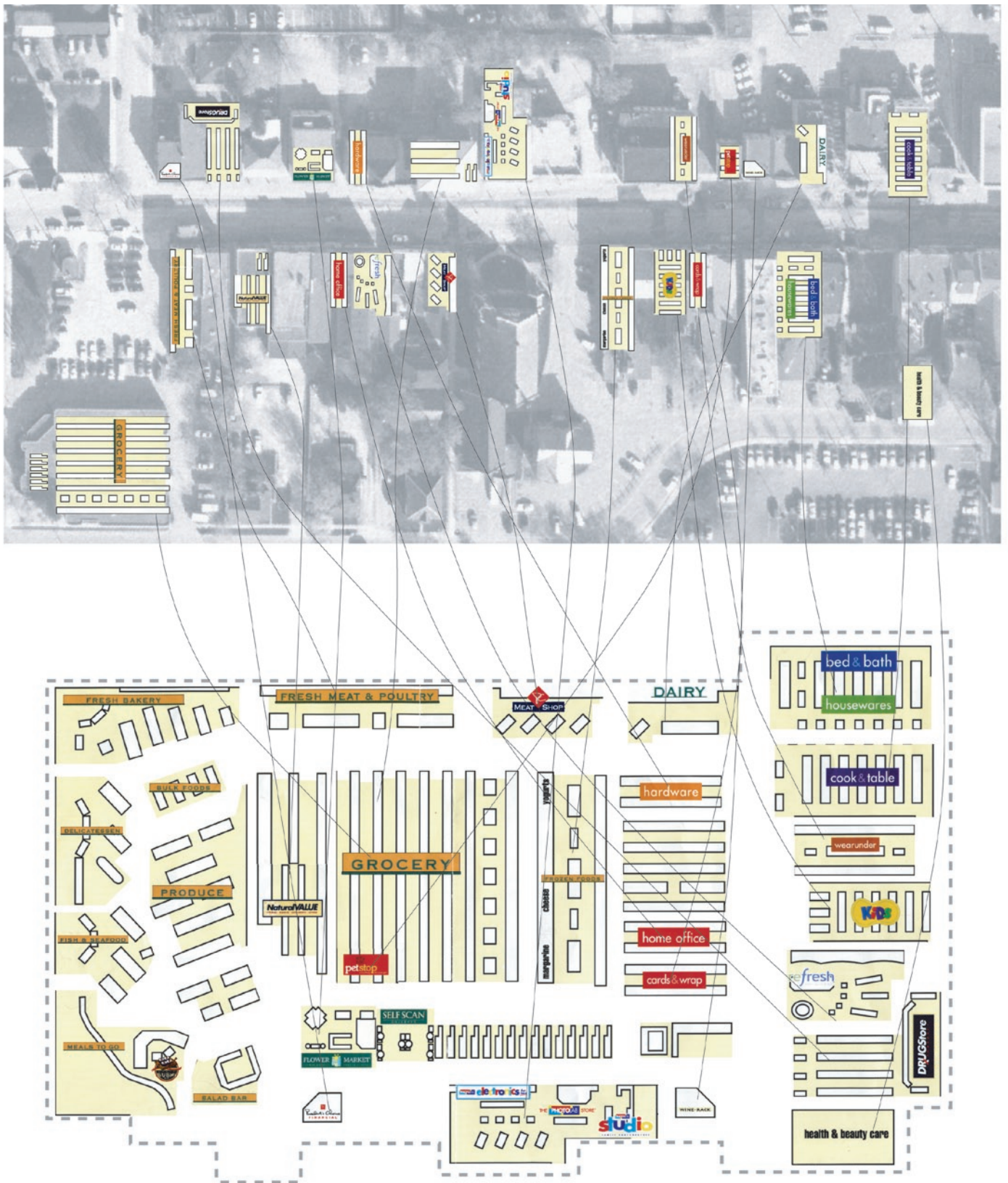
Elevation



Plan

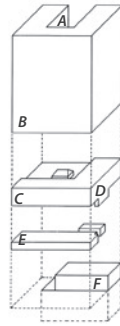


Axonometric



1.43 The Evolving Big Box Store Extracting Commerce from Traditional Main Streets

- A Ballroom
- B Bedrooms
- C Restaurant
- D Hotel Lobby
- E Stores
- F Railroad Arrivals Terminal



1.44 Fabric Hybrids

Hybrid buildings which adhere to the regularities of the adjacent urban fabric concealing the variety of program they contain. Older buildings with generically designed interiors are fabric hybrids that can accommodate fluctuations in program.

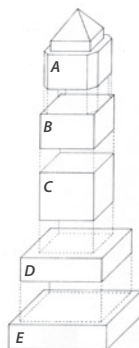
- A Offices
- B Custom House



1.45 Graft Hybrids

Hybrid Buildings which formally express their various programmatic elements.

- A County Jail
- B City Jail
- C Offices
- D Court Rooms
- E City Hall



1.46 Monolith Hybrid

These hybrids are generally quite large structures, conceived as a single form which internally houses a variety of programs. Monolith hybrids often occupy entire city blocks.

Hybrid Buildings

"The combination of multiple functions within a single structure is a strategy which has been repeated throughout history. The house over the store, the apartment above the bridge and the Roman bath are all examples of the tradition of combining two or more functions within the walls of a single structure."

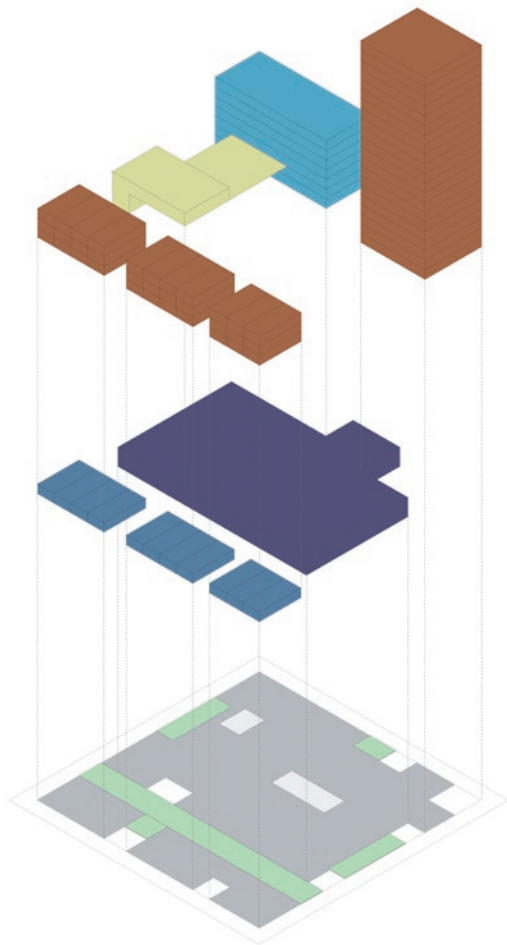
Joseph Fenton - Hybrid Buildings

The ability of certain spatial and functional types to coexist within a structure naturally encourages the creation of hybrid buildings, especially whenever programmatic demand and land values merit them. Many of the older buildings in Downtown Toronto are hybrids of at least two uses, and even still, the land value today is high enough that a new building in the core could easily accommodate residential apartments, offices, a shopping plaza or cultural amenity, and parking.

Historically, the synergies of hybridization have been positive attributes to city life. Until the 1940's, close proximity of daily functions had been a desirable premise in planning and urban design. When all the elements required for living come into close proximity, the street life becomes an active place of exchange for the people who inhabit or work in those very buildings. Traditionally, types which combine residential or office uses above retail uses at grade shape the most lively streets in the city.

During the 1950's and 60's the shift to the suburbs - driven by a desire for open space combined with the mobility of the car - meant that living and working in such proximity was no longer as valued. Hybrid buildings were uncommon throughout this time. This in turn encouraged the separation of land uses with the purpose of creating safe residential communities free from the contaminants of industry. Furthermore, the development of centralized shopping centres consciously avoided hybridization, consolidating single retail uses in large quantities accessible via enclosed interior streets, which attempted to act as public space.

1.44, 1.45, 1.46 Source: Fenton, Joseph (p. 18,21,35)



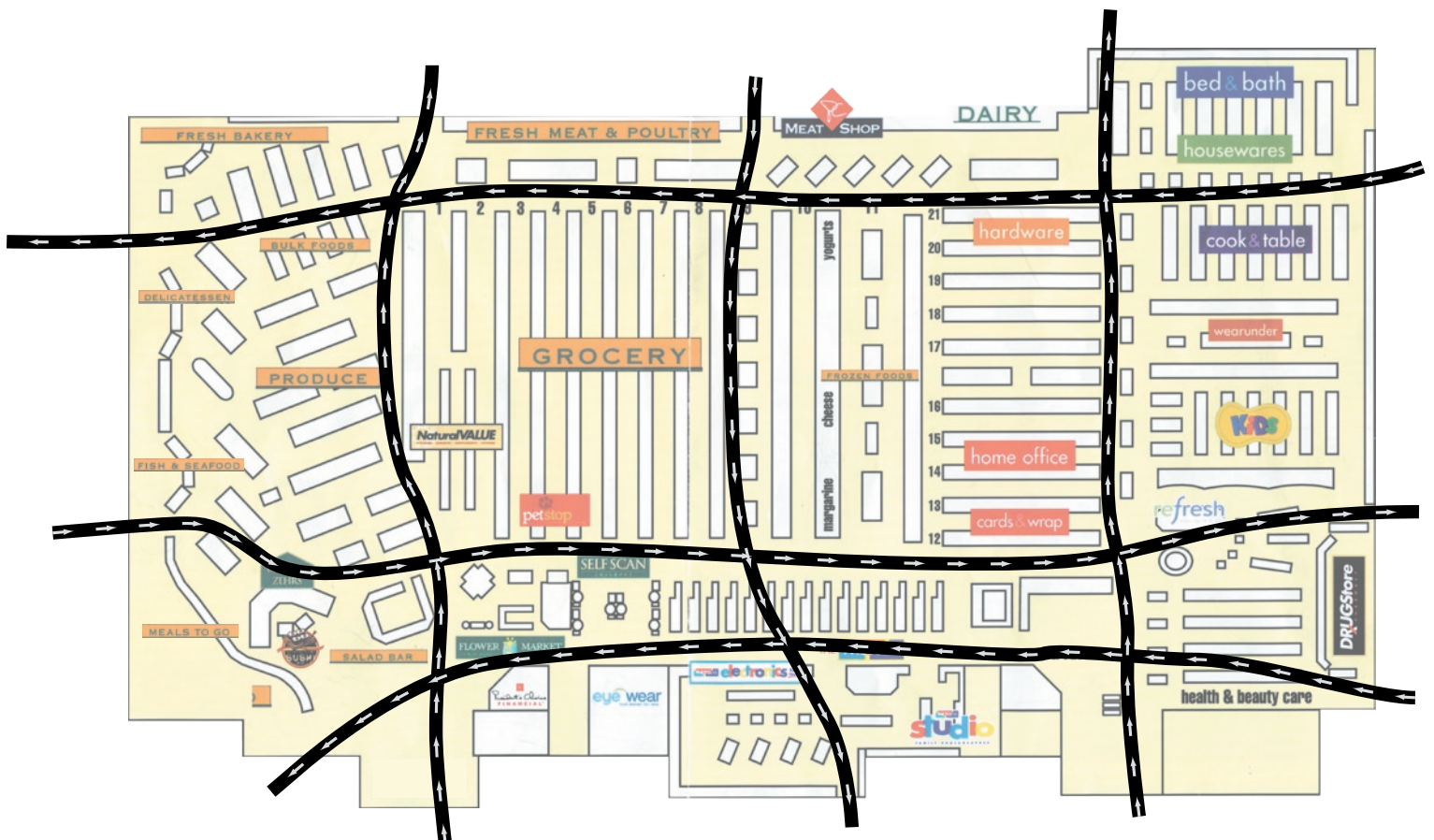
1.47 Layering uses

This diagram represents a hypothetical condition where the Big box store acts as an organizing element for a variety of programmatic uses. Residential, office and amenities uses such as community centres and green roofs operate on upper levels. Big box retail, and smaller stores inhabit the lower level. The ground plane is partially landscaped, and is perforated to allow access to servicing level and underground parking.

- Residential
- Office
- Amenity
- Big Box retail
- Small retail
- Landscaped areas

1.48 Re-Integrating the Big Box Store

As a staple in the suburban landscape, the Big Box Store could be adapted to exist within a more traditional urban fabric. Modifying the plan to permit public access through to adjacent streets will increase local pedestrian traffic through the building, further integrating it with the surrounding urban block structure.



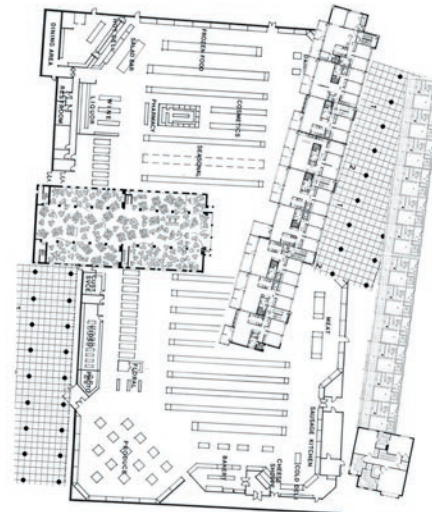
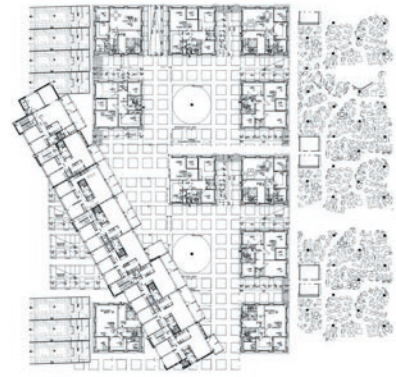
Hybridization of the Big Box Store

Catering to a mobile consumer base, mass corporate inventory systems, and international markets of manufacturing, the efficiency of the shopping centre has since been streamlined and has developed into the 'Big Box store'. Consolidating a broad market (hardware, electronics, homeware, books etc.) into a single large store or 'Category Killer', big boxes are able to offer reduced prices due to the scale and efficiency of the corporate model.

The big box typology has become a prominent component of the suburban landscape, and is continuing to evolve. Originally targeting specific market components, big boxes are now beginning to hybridize with other uses, bringing restaurants, pharmacies, and even community centres under their growing roofs. It is conceivable, that in the context of a re-urbanizing and densifying city, this evolving retail type could go further and start to hybridize with apartments and offices. Bringing convenient shopping and services to a market within very close proximity, the big box store could be the device that combines the large scale suburban shopping experience with an intensity created by mixed use buildings like those found in Downtown Toronto.

1.49 *Big Box City* [next page]

This montage of building plans, with various uses presented at the same scale, represents an urban condition which is primarily formed of large mixed-use blocks, many of which are structured around a big box store. This montage considers the big box store a component of transformation of the suburban realm as it becomes the basic building block on which additional projects are layered incrementally as the city intensifies.





A. Burlington



B. Milton



C. Georgetown





D. Brampton



E. North Brampton



F. Bolton

2.01 Similar Forms in the Peripheral GTA [above]
The six satellite images shown above illustrate a condition that happening in many parts of the peripheral GTA. The dashed green lines locate existing railway lines, used for either industrial, public transit, or both. What is clear from these images is the separations of various urban forms. Segregating land use policies have divided the neighbourhoods of these growing areas from each other. Typically, it is vacant or industrial lands that are dividing these towns, and in many cases, there is also a railway corridor.



Beyond 2031

"Beyond the settlement area, outside the draft Greenbelt Plan area, there are approximately 60,200 hectares that could be considered for future urban growth. If development continues to occur at densities and patterns similar to the current trends, it is estimated that future growth well beyond 2031 could be accommodated on lands within this area." - Ministry of Public Infrastructure and Renewal - Places to Grow : Draft Growth Plan for the Greater Golden Horseshoe

Future Expansion Beyond the 2031 Growth Boundary

Between the designated growth area and the lands protected by the Greenbelt Plan there are approximately 60,200 hectares of unprotected farmland. This is a substantial amount of land, enough for two more Metropolitan of Torontos and almost all of it is experiencing development pressure.¹ In a draft version of the Growth Plan, this land is referred to as potential lands for expansion after 2031.² While it may be a distant reality, it is implied that future expansion beyond the proposed growth boundary will eventually be necessary. A portion of this area has been outlined for speculation as to how the future rural-urban edge condition could be composed.

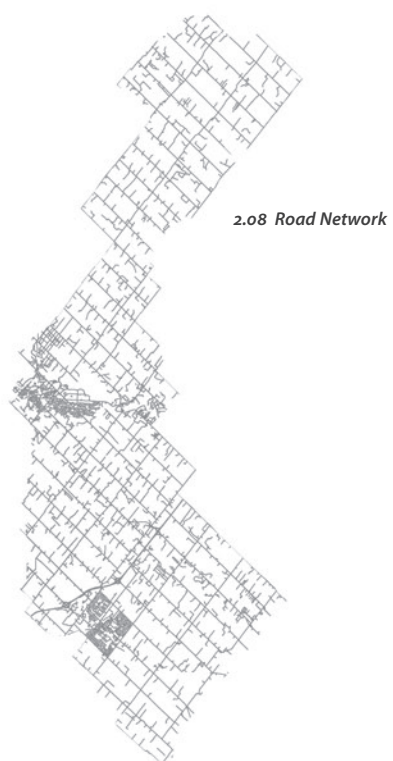
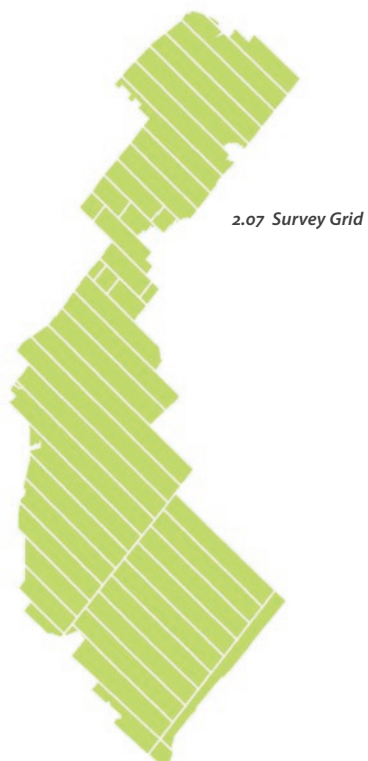
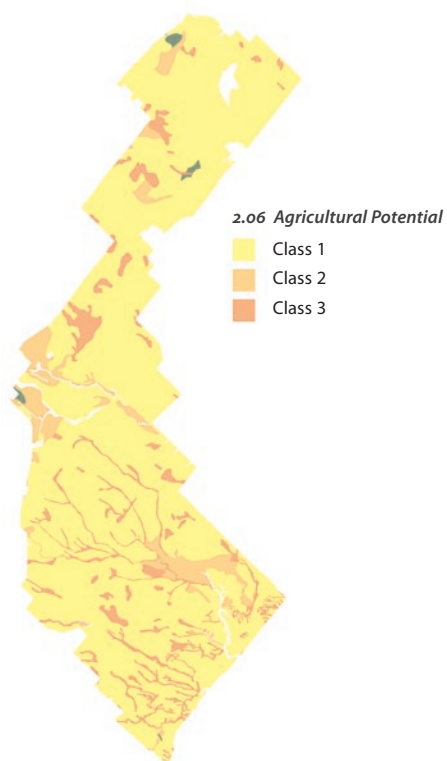
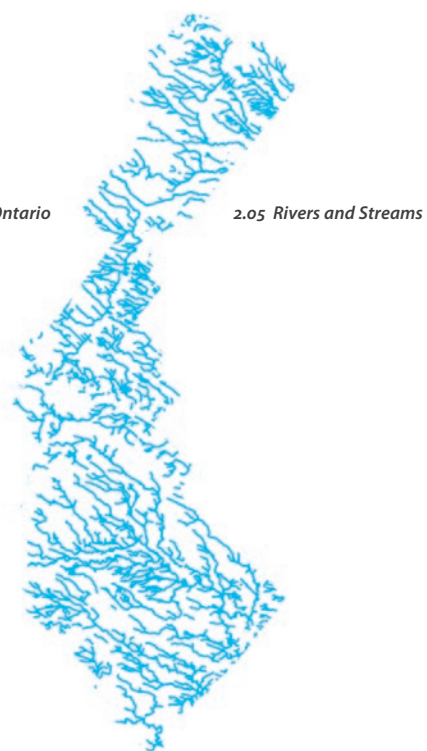
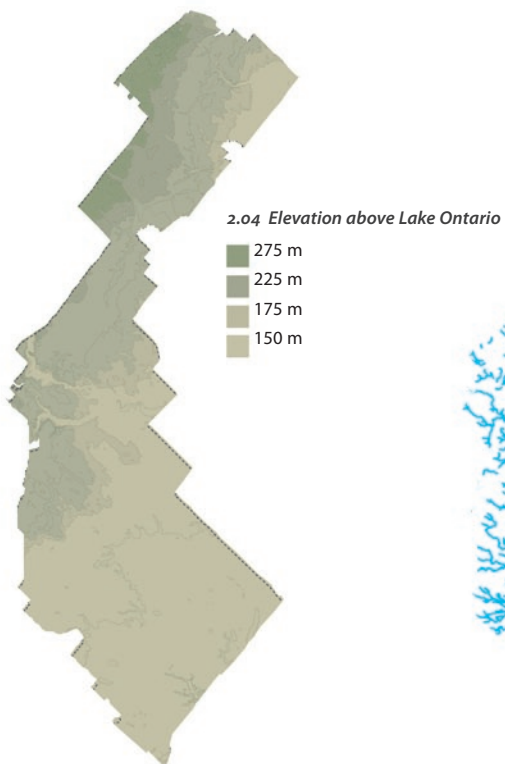
The peripheral areas of the GTA -while still primarily farmland- are dotted with suburban towns of generally similar composition, having either grown around an existing rural agricultural nucleus, or extending the reaches of a larger urban region. The last fifty years of growth have created the conditions within these towns that characterize the suburban quality of the GTA. Aside from the small town centres that predated this rapid suburban expansion, there is often a clear segregation of uses within these areas. Typically, large industrial or commercial zones located along highways or railway corridors are distinctly separated from adjacent pockets of low density residential fabric in an almost normative suburban morphology.

As industries continue to re-locate along major highways in the GTA, the proportion of rail-based freight has decreased. As a result, large under used rail-oriented sites within these towns will be natural targets for future intensification. In a culture of re-urbanization and regeneration, areas which don't meet their full potential will likely be the first to change.

The planning and design speculation in the following sections imagines a long-term reorganization of the framework of the GTA. Concepts about the formation of the edge are presented, and a specific growth centre is selected as a site to host a more detailed proposition that embodies the thinking beneath this regional morphology. The fundamental methods of this proposal are generally applicable to many of the emerging growth centres in the region.

1 Neptis Foundation - Commentary on the Draft Greenbelt Plan - p. 8

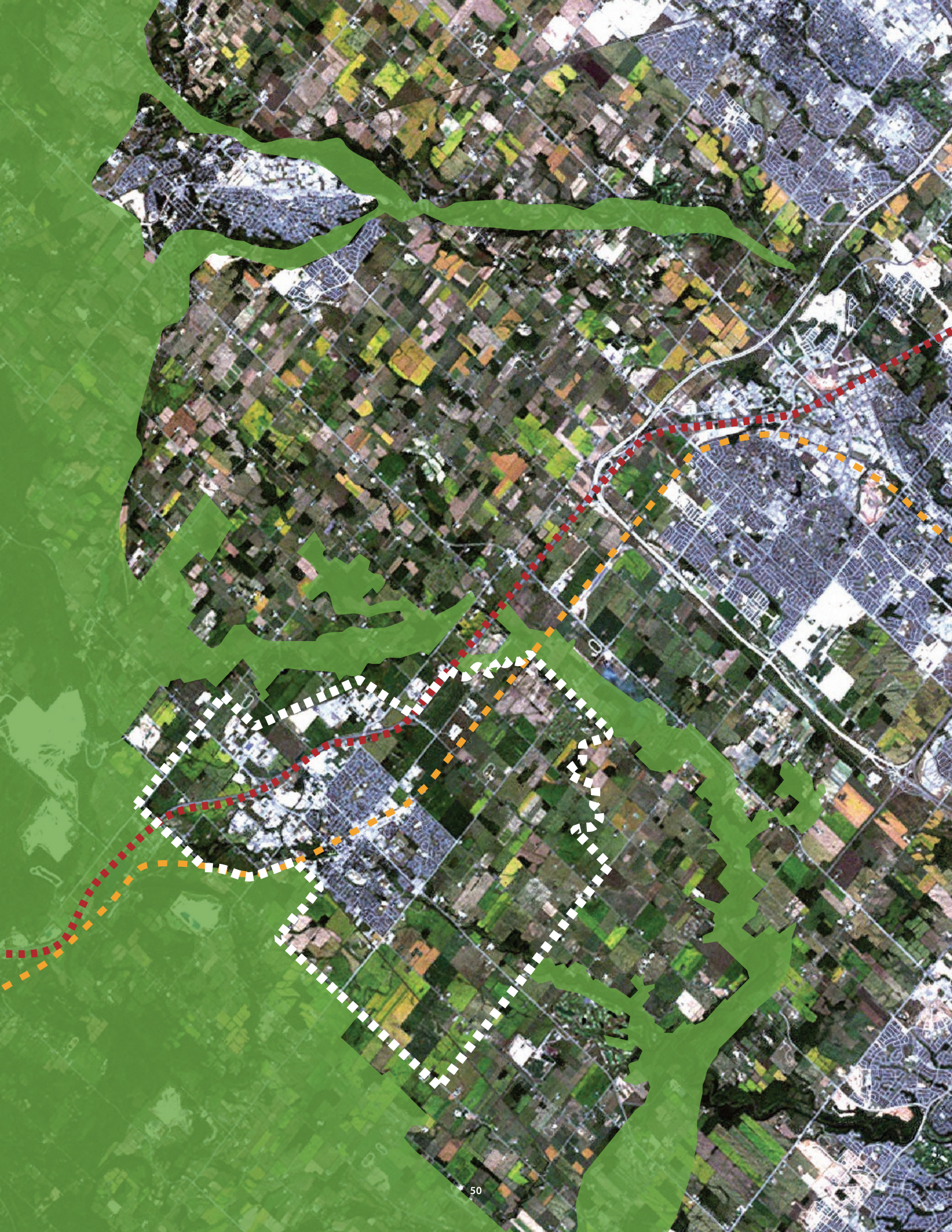
2 Ministry of Public Infrastructure Renewal - Draft Growth Plan for the Greater Golden Horseshoe - p. 22



The Land Between the Greenbelt and the Designated Growth Area

All Plans 1:250,000





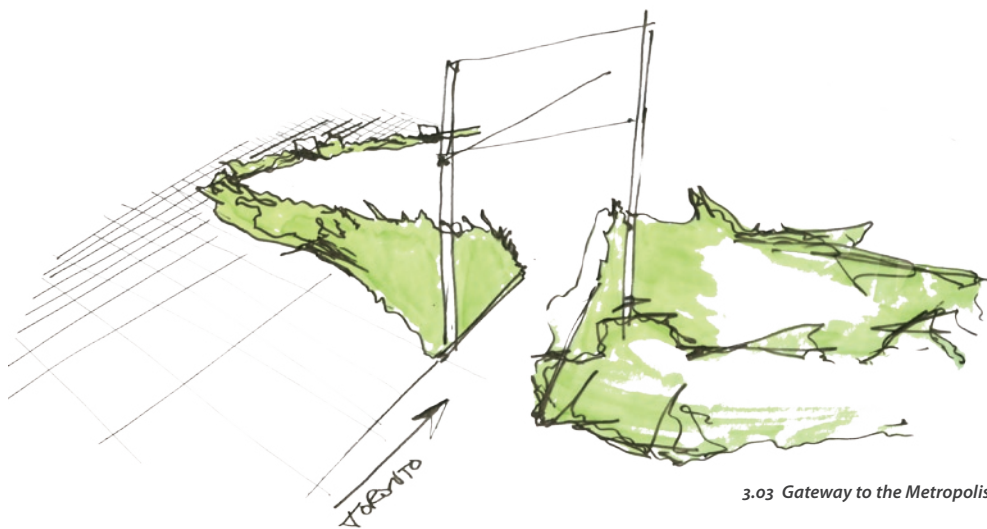


Milton: The Satellite Growth Centre

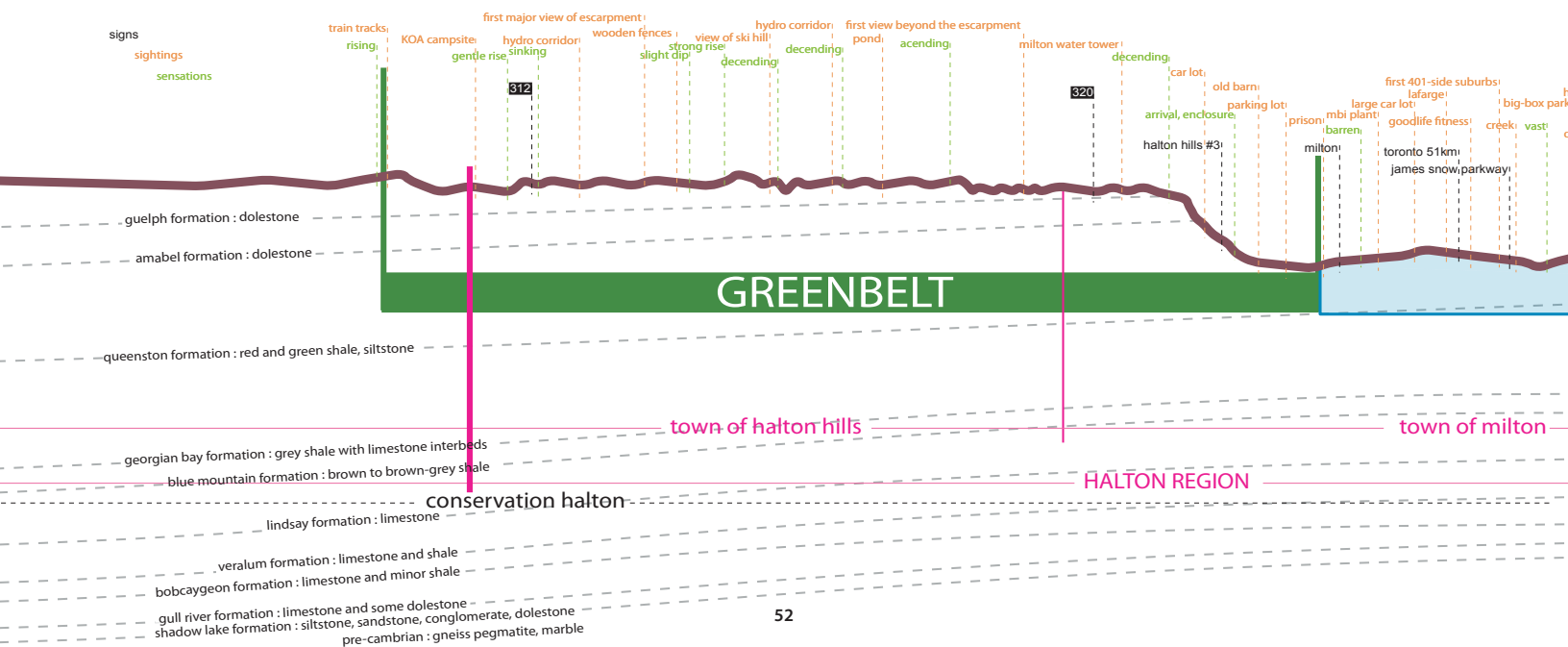
This 2001 satellite image displays the existing patterns of development in the western GTA. Milton, Ontario, a proposed growth centre located at the inner edge of the Greenbelt is rapidly expanding due to its available land base and its access to Lake Ontario water infrastructure. Its proximity to Highway 401, a major east-west route through the GTA, makes it accessible to the region and a major draw for industries which prefer to locate along transit corridors. Milton is also the last stop on a commuter GO line connecting it to downtown Toronto.

3.01 *Satellite Image of the Western GTA*

- ■ ■ Highway 401
- ■ ■ CN Railway/GO Commuter Line
- ■ ■ Milton's Designated Growth Area
- Greenbelt Area



3.03 Gateway to the Metropolis





Milton: Gateway to the Greater Toronto Area

3.02 401 Arrival Sequence [above]

The above image sequence depicts the view from the 401 coming into the metropolis from the Greenbelt. Rising over the last ridge of the Niagara escarpment, this is the initial view that visitors get of the urban Greater Toronto Area.

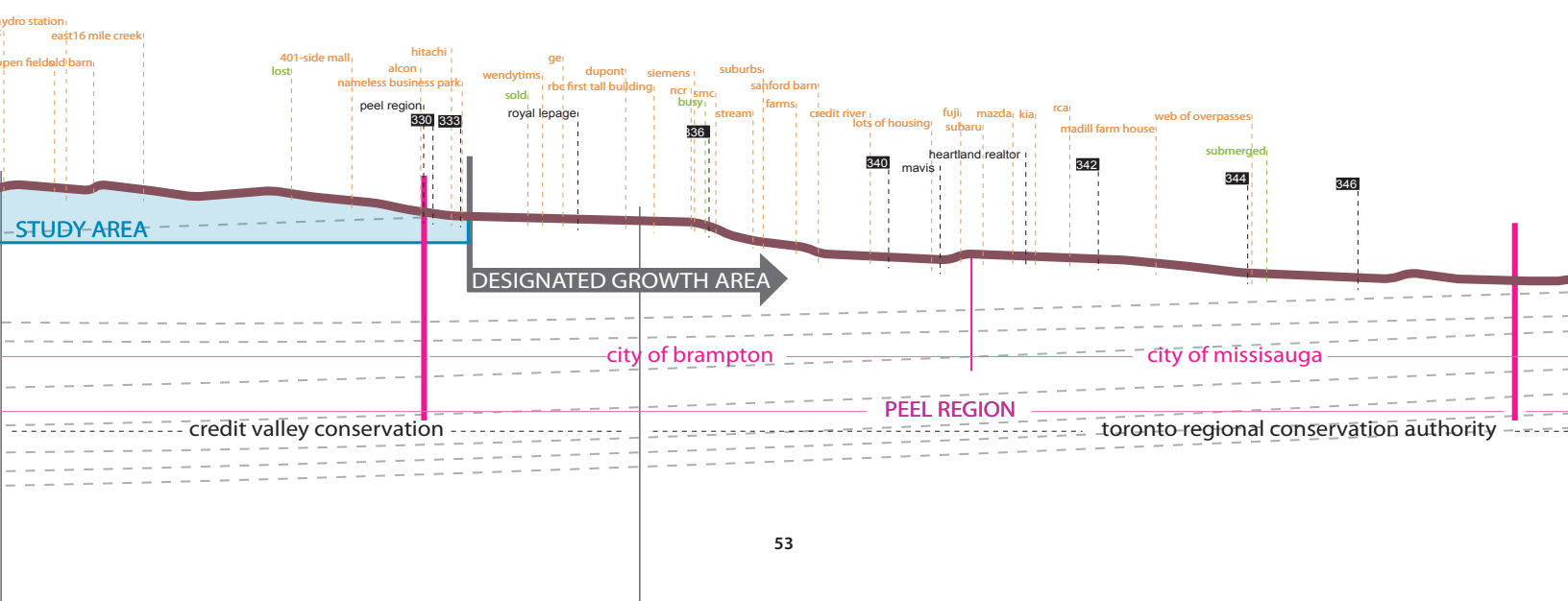
3.04 401 Transect [below]

This sectional reading of the 401 route through the Greenbelt locates some moments experienced travelling into the city and layers them over the existing greenbelt and political boundaries as well as topographic and geological levels.

The 401 is considered the busiest highway in North America, bringing an average of 425,000 people through the GTA daily¹. Driving east into the city, the traveler crosses the breadth of the Greenbelt, and rising over the last hills of the Niagara Escarpment, enters the metropolis from an elevated vantage point. Toronto, by nature a horizontal figure, stretches out of site towards the distant lakeshore from which it began. This thin urban crust is scattered with occasional blips of density and scored with a broad grid which declares its origins and destined growth.

At this gateway to the GTA is Milton, Ontario, a town that is experiencing a major transformation. As it grows, so will the contrast one senses when they leave the Greenbelt and enter the city.

1 Wikipedia - Highway 401 (Ontario)



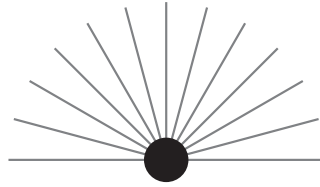


▲ 3.05 The Dense Edge ▼ 3.06 The Permeable Edge



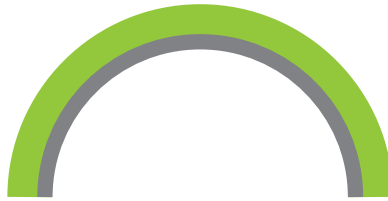
Milton: The Perimeter City Concept for the Greenbelt

Permeated by regular natural corridors, the dense perimeter city encircles the GTA separating the existing suburbs from the protected Greenbelt.



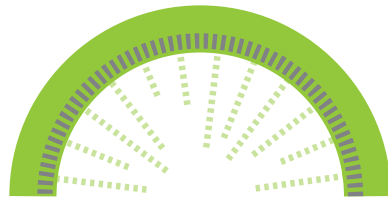
Hub + Spoke

GO Transit commuter lines currently radiate out from Union Station, the primary hub of the Greater Toronto Area Transportation Network.



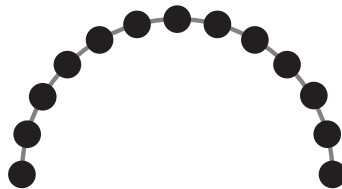
Dense Edge

Minimum density policies in the Growth Plan suggest that the expansion of the city towards the Greenbelt will create urban areas dense enough to be serviced by public transportation.



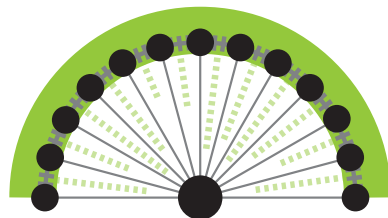
Green Corridors

The protection of sensitive ecological areas and natural corridors penetrating the edge will create a series of recreational amenities for communities along the edge.



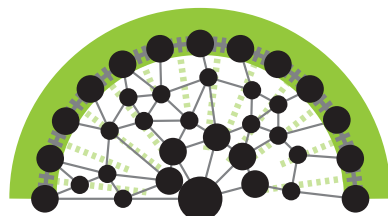
Necklace of Growth

A string of compact and self-sustaining growth centres located in areas selected to minimize environmental impact.



Hub + Spoke + Wheel

Amending the existing transportation network to one which has multiple destinations, and broadening the public transit network to service a dispersed population.



Transportation Web

A potential transportation scenario linking multiple hubs in order to facilitate a fluid rapid transit system.

3.07 Perimeter City Diagrams [not to scale]

Primary Elements

The broad grid which stretches across all of Southern Ontario provides the basic structure for the Town of Milton. The Niagara Escarpment is a prominent element in the landscape, and views towards it are important. Key Infrastructural elements drawing growth to the region are the highway 401 and the CN Rail line which pass through the Town's jurisdiction.

3.08 Milton Primary Elements 1:100,000

-  Niagara Escarpment
-  Survey Grid
-  Provincial Highway 401
-  Canadian National Railway Line
-  GO Transit Commuter Station

Milton: Existing Conditions

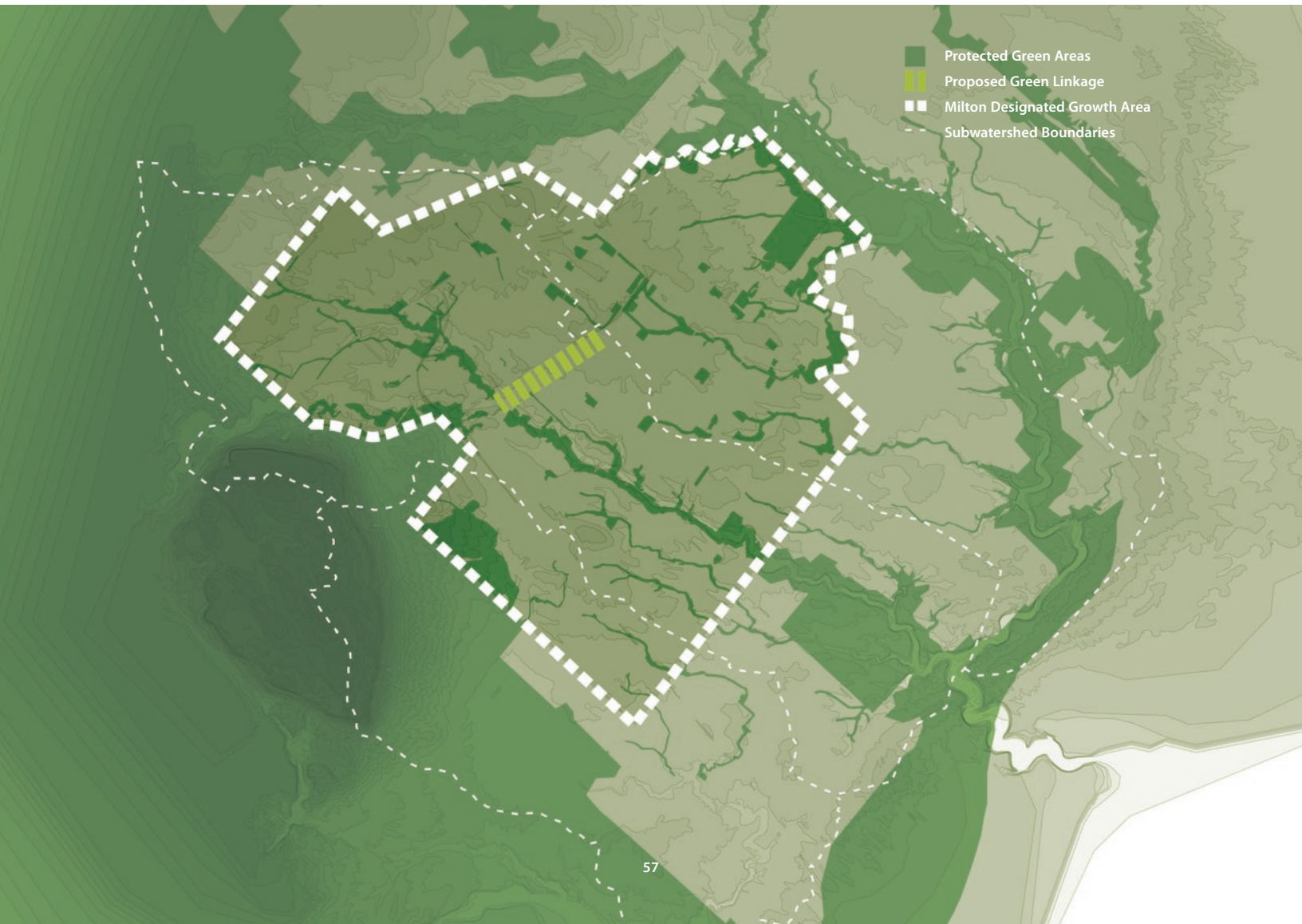
Milton's 2031 designated growth boundary forms the base for these maps and diagrams illustrating the conditions found in the town today. This analysis presents the spatial and structural organization of the town, and provides an understanding of forces that are driving the Milton's current growth dynamic.

A glimpse of the Town's evolution can be seen in a number of these diagrams, where much of the heritage and existing amenities are concentrated in a relatively small area. It is important to note that Milton's expansion from a very small town to an expanding centre of growth has occurred in a relatively short period of time.

Contours and Green Areas

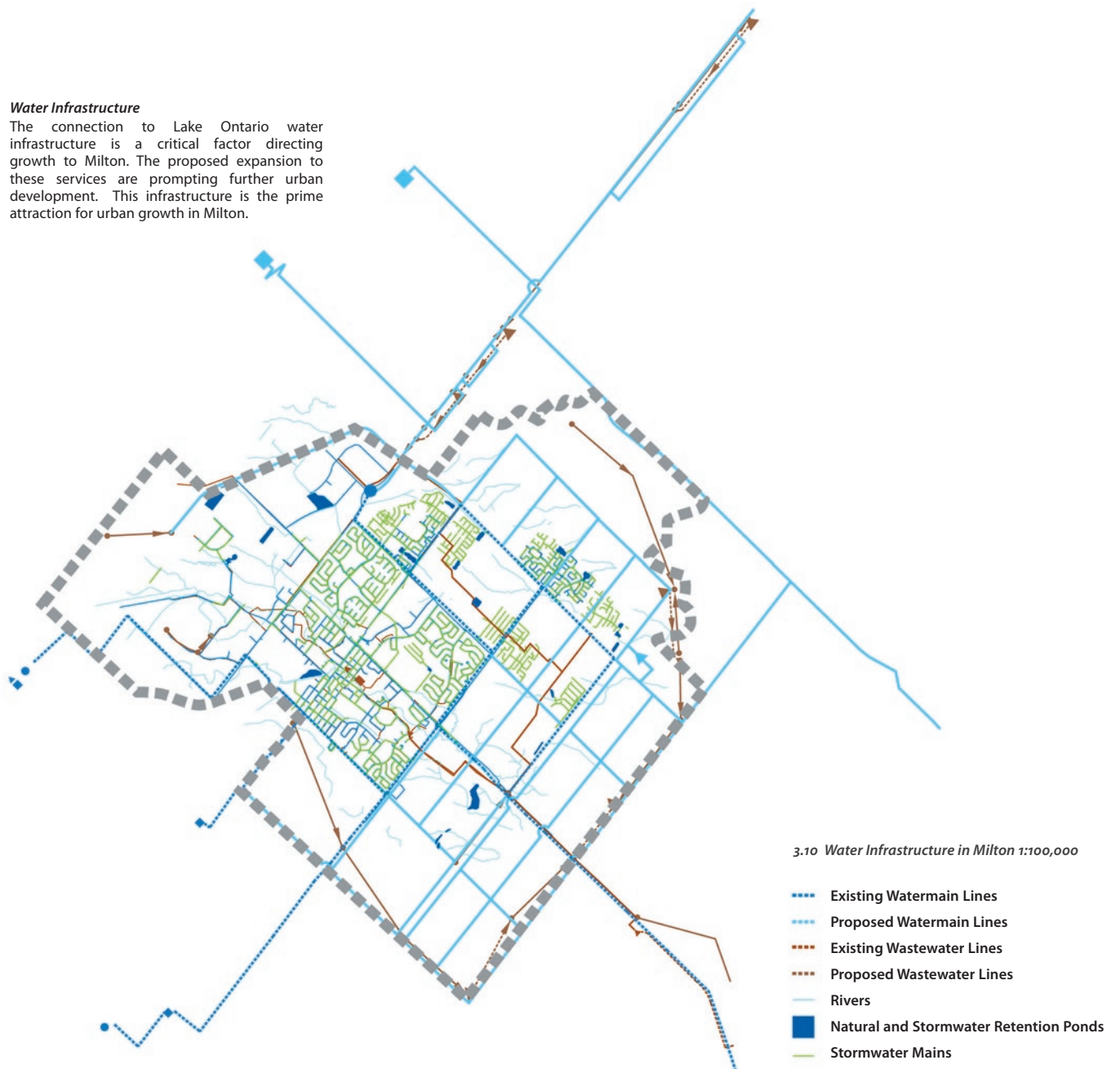
Located at the edge of the Greenbelt, Milton is directly adjacent to the Niagara Escarpment. This feature rises sharply from the gentle slopes across the town. The protected green areas are primarily located along the riverbanks that collect water from areas of higher elevation and drain into Lake Ontario.

3.09 Greenlands in Milton 1:100,000



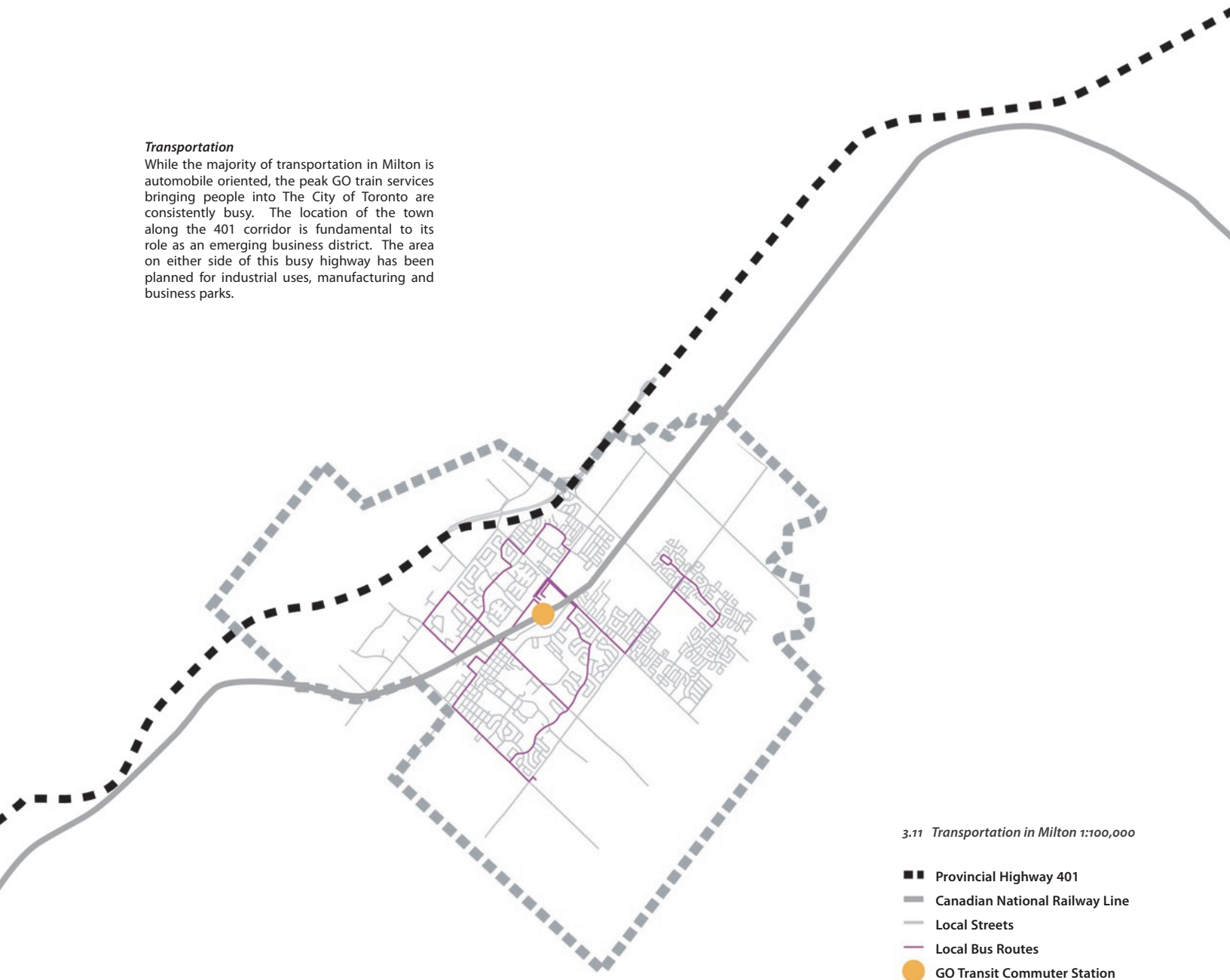
Water Infrastructure

The connection to Lake Ontario water infrastructure is a critical factor directing growth to Milton. The proposed expansion to these services are prompting further urban development. This infrastructure is the prime attraction for urban growth in Milton.



Transportation

While the majority of transportation in Milton is automobile oriented, the peak GO train services bringing people into The City of Toronto are consistently busy. The location of the town along the 401 corridor is fundamental to its role as an emerging business district. The area on either side of this busy highway has been planned for industrial uses, manufacturing and business parks.



3.11 Transportation in Milton 1:100,000

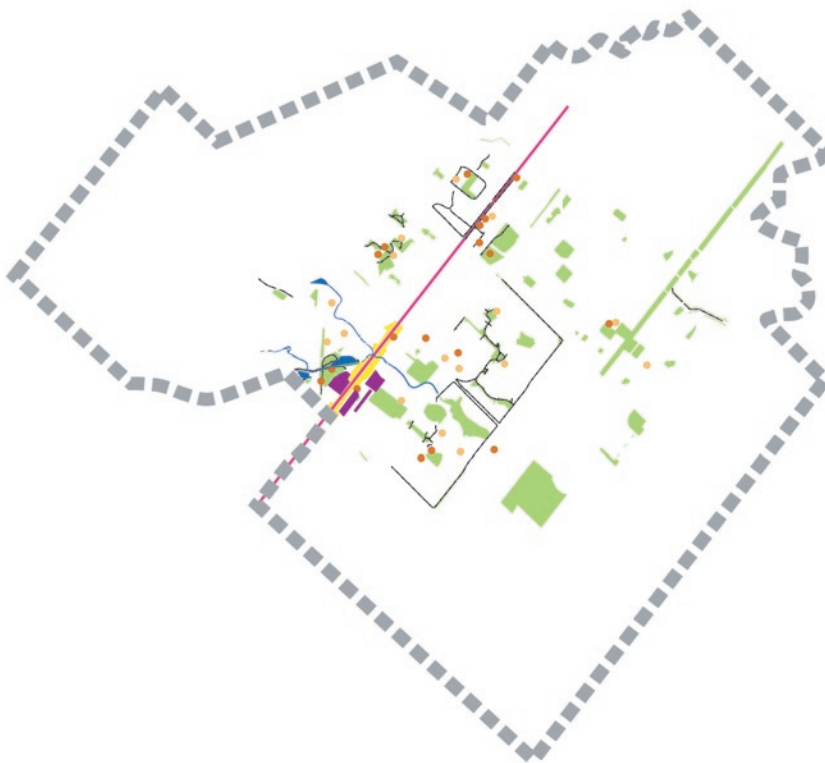
- Provincial Highway 401
- Canadian National Railway Line
- Local Streets
- Local Bus Routes
- GO Transit Commuter Station



3.12 Milton Mill Pond

Urban Artifacts and the Public Realm

There are several spectacular moments within Milton, and these should be maintained and enhanced. The most significant being the Mill Pond, a large pond within a park located very close to the original core area of the town. Aside from the parks along river corridors, the public realm network has since become fragmented into small pockets located within several new residential areas.



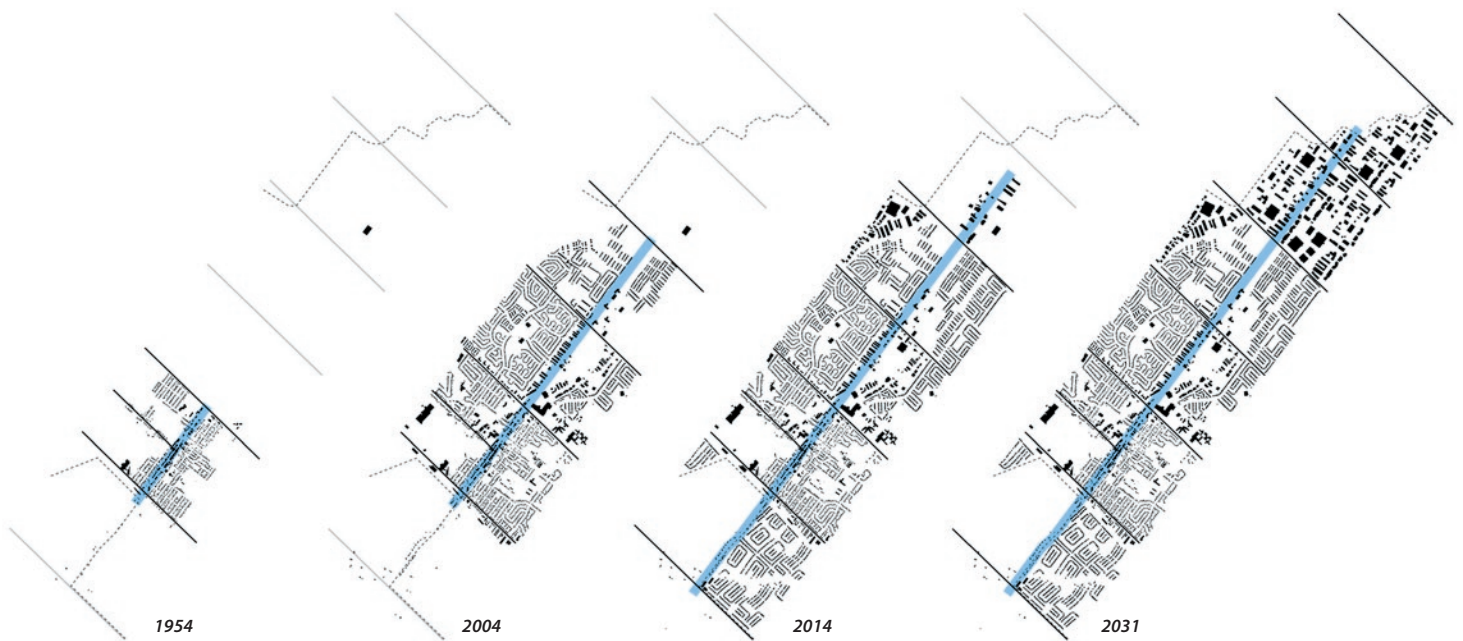
3.13 Urban Artifacts in Milton 1:100,000

- Milton Main Street
- Mixed-use core area
- Heritage areas
- Milton Mill Pond
- Public Parks
- Public Trails
- Community Buildings
- Schools

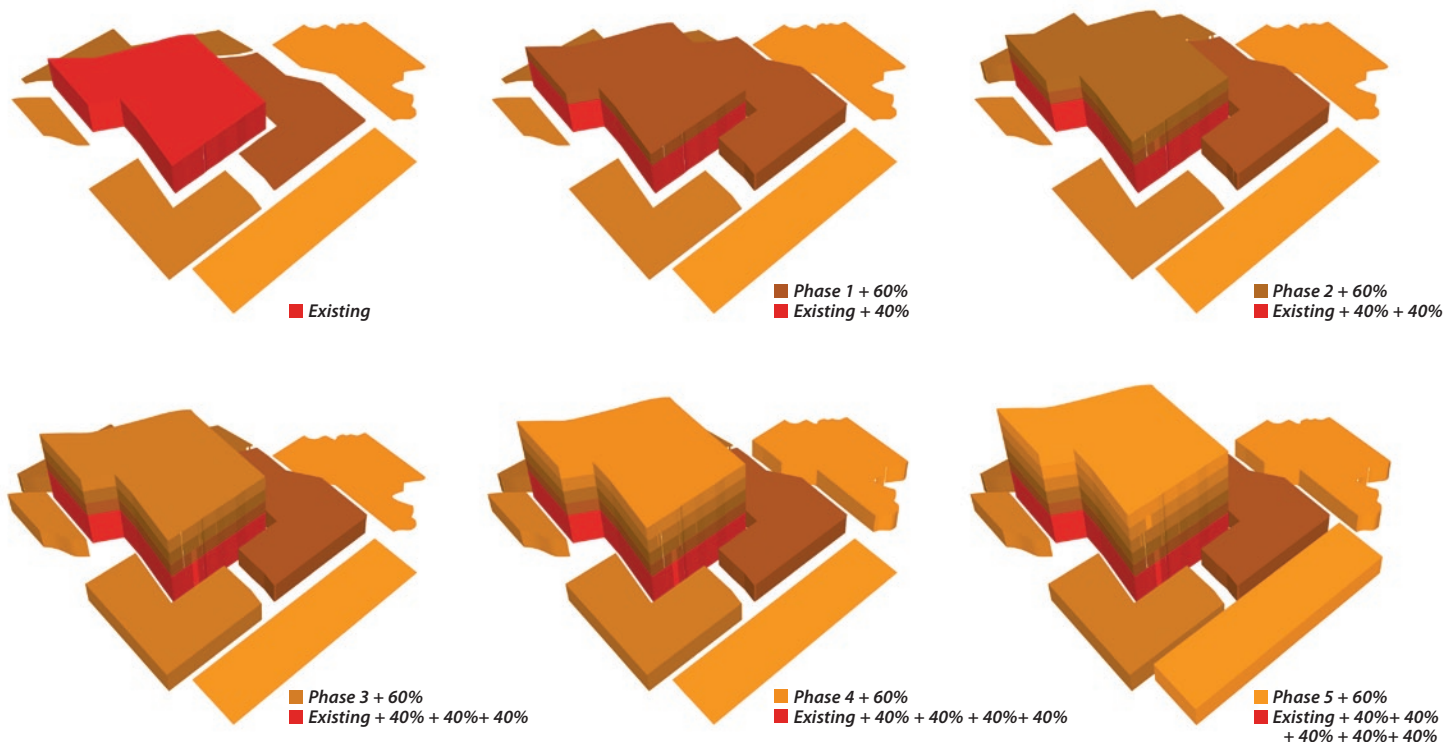


Evolution of the Main Street Armature

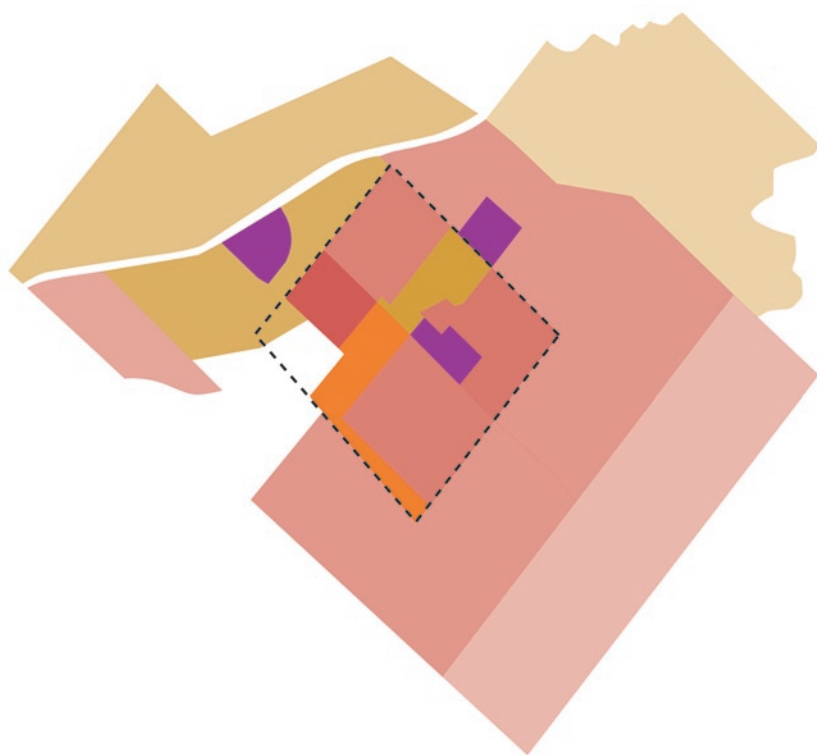
The early nucleus of the Town was structured along Main Street, and for many decades it remained the primary focus. With the rapid residential expansion in recent years, the focus has dispersed. The oldest part of Main Street remains as an artifact from the Town's history. The new and proposed development along this armature will pass through a series of different neighbourhoods, and it is important that its identity is considered.



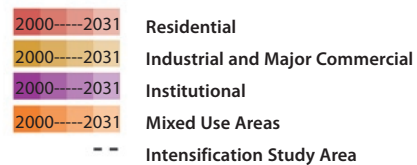
3.14 The Evolution of Milton's Main Street 1:100,000



3.15 Phasing and the 60-40 Intensification policy [not to scale]



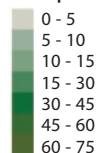
3.16 Phasing and Uses in Milton 1:100,000





3.17 Existing Density in Milton 1:100,000

Units per Hectare

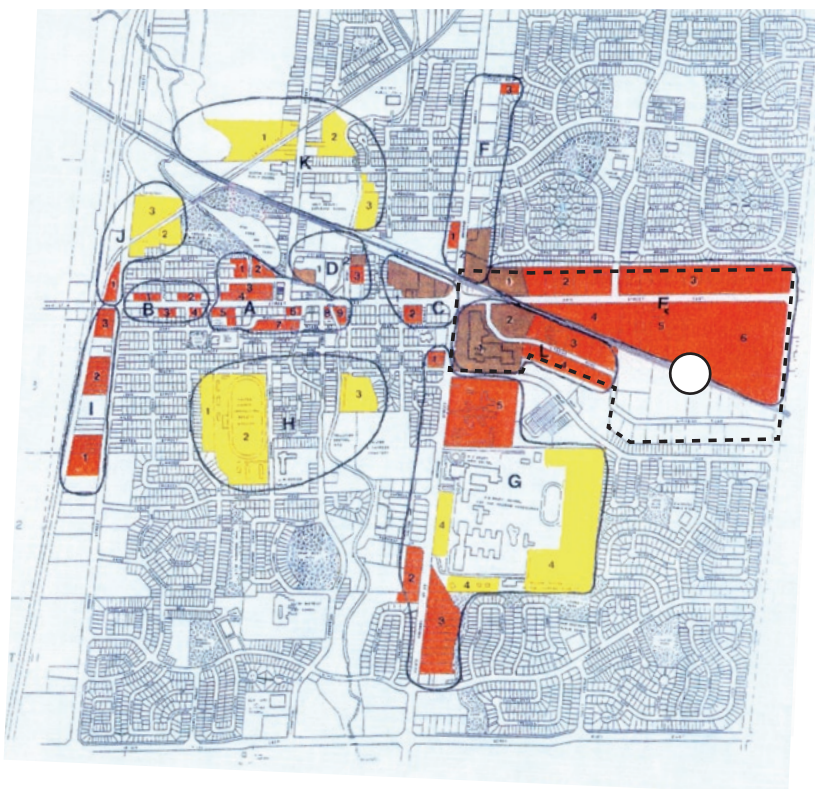


Milton: Phasing, Density and Intensification

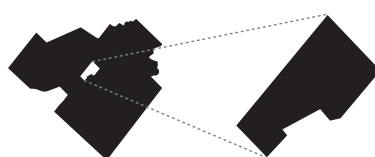
The sequence in figure [3.15] is a diagrammatic representation of the intensification policies of the Growth Plan applied to Milton's proposed phasing strategy. In order for the outer phases to proceed, the existing urban area will need to simultaneously absorb a substantial amount of development.

The plan below [3.18] is from a municipal study on potential intensification within Milton. While this study was completed in 1993, not much has changed in terms of intensification in the Town.

While the new residential developments around the edges of Milton's existing urban area are slightly more dense than the housing in the historic core, overall, the Town has quite a low-density. In light of the new policies associated with the Greenbelt, it will be imperative for Milton to address the issue of intensification in the near future.



3.18 Municipal Intensification Study



-- Site for Intensification

Potential Areas for Intensification

High Density

Medium Density

Low Density

○ GO Transit Commuter Station



4.01 Aerial Perspective of the Intensification Site



The Central Business District - A Site for Intensification

The Milton GO station is located at the centre of a large site of underdeveloped land within the existing urban area of the Town of Milton. Regional pressure for intensification would imply that a site of this size adjacent to the historical centre and several existing neighbourhoods, services and amenities would be a prime target for re-urbanization. Aside from moderate industrial activity and the peak train service to Union Station in Downtown Toronto, on weekdays the area around the GO station is essentially a field of parked cars interrupted by the occasional local or regional bus. During evenings and weekends, activity in this area virtually ceases. The only part of the site that sees consistent daily activity is at the western end [C] where the Milton Mall and a large Loblaws grocery store face each other across a very large parking lot.

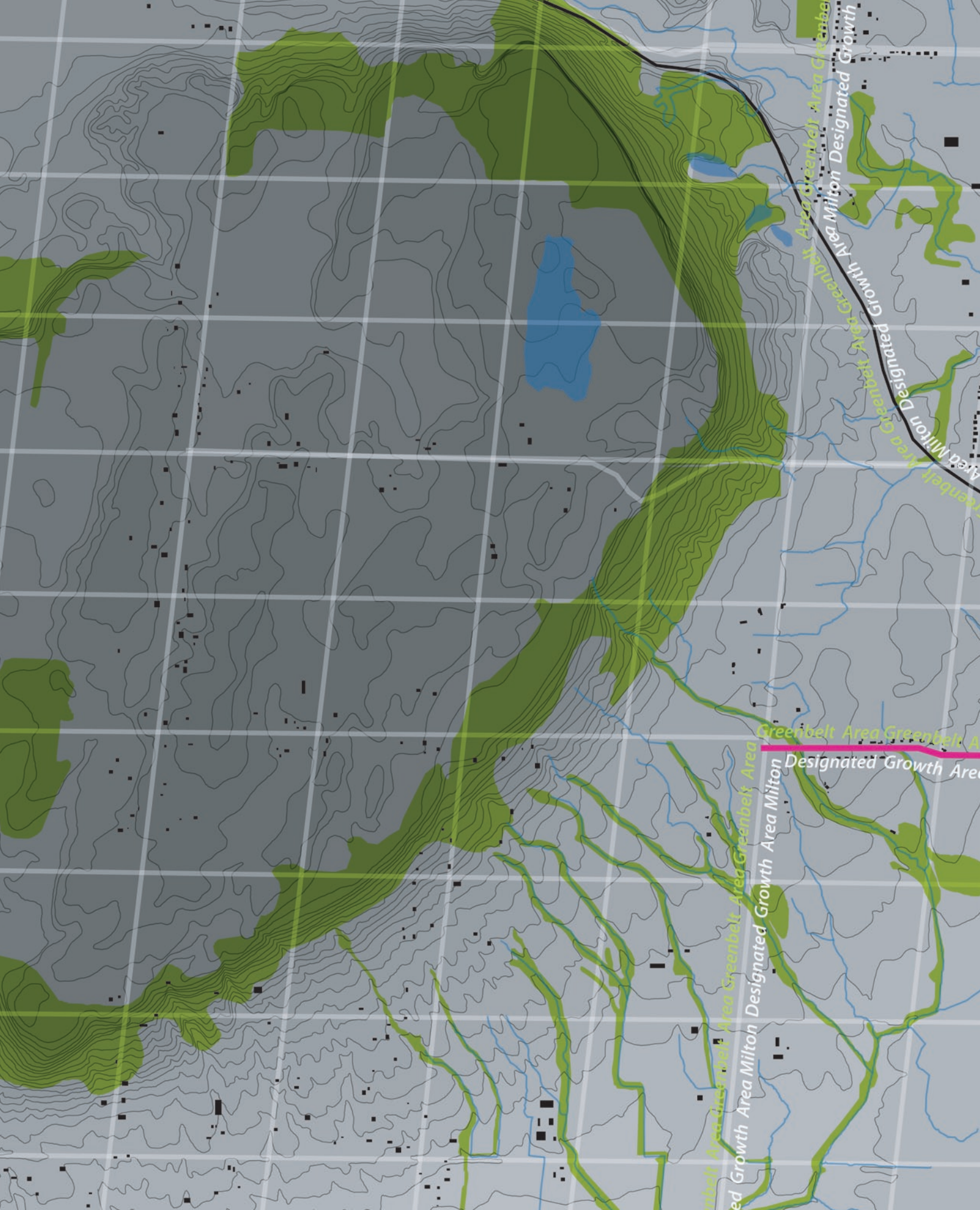
Given its location and proximity to the historic main street and core amenities such as schools and colleges this piece of Milton is under used. This has not gone undetected by the municipal government, and it has been addressed in the official plan as a substantial component of the town, where it is referred to as the Central Business District. Development is happening on parts of the site area, but hardly seems in line with the vision of the official plan or the intensification policies of the region, as the forthcoming development suggests no buildings over one story, and the primary coverage will be used for surface parking. An even larger Loblaws superstore [A] is proposed along with some perimeter strip retail, gas stations, and drive-through restaurants. These pending developments encourage automobile dependency, and aside from shopping, the amount of business that will happen there will be negligible.

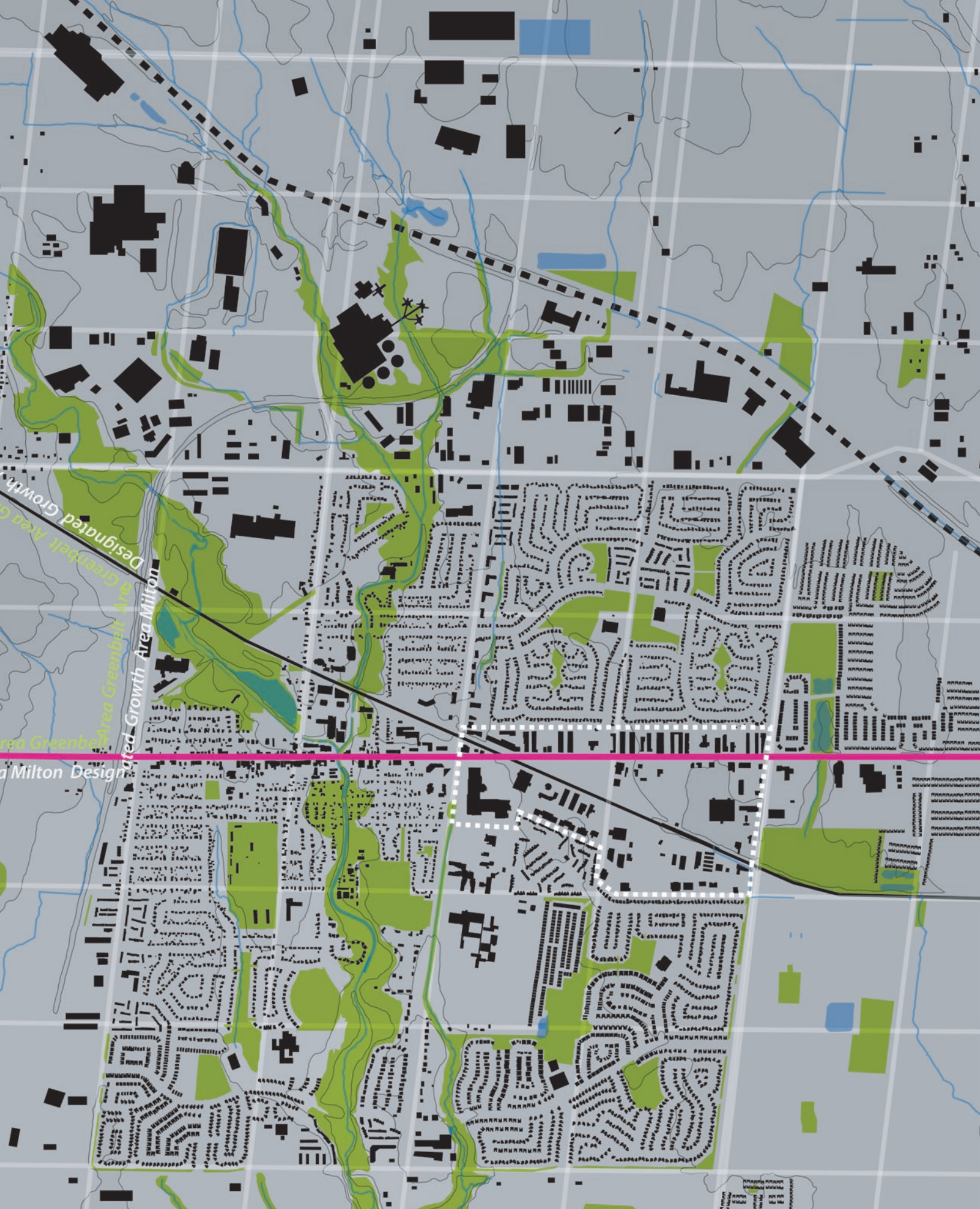
Industrial uses populate much of the site, as at one time in Town's history, this site was peripheral land around Milton's older core, and such uses were appropriate here. The area was developed and zoned with a segregating land use policy, and has developed with virtually no housing. Several major industries [B] are located just across the tracks from the GO station and while these businesses are still in operation, it can be argued that pressure from existing and future residential areas, paired with decreased mobility of large trucks in a growing area, will encourage them to relocate. It can also be argued that the industries on site have much to gain in holding out as expropriation pressure mounts. The industrial nature of the area, coupled with the lack of railway crossings between Ontario Street and Thompson Road, creates a barrier between the residential areas that surround the site.

Located between several residential areas, in close proximity to the regional GO commuter transit line and the Main Street of Milton, the intensification potential for this site creates a palpable opportunity to reconnect these elements and link them to the emerging growth areas within the Town.









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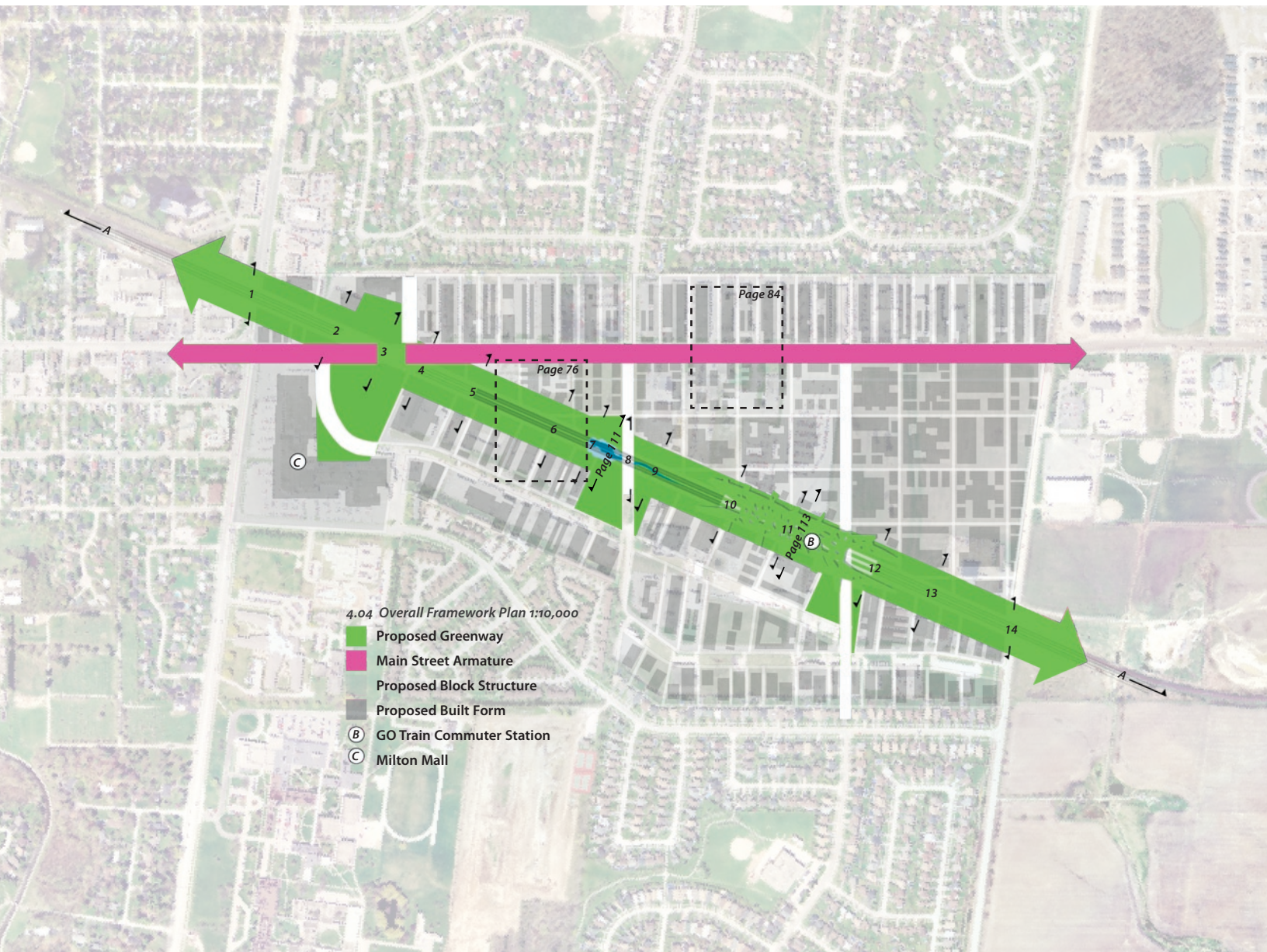
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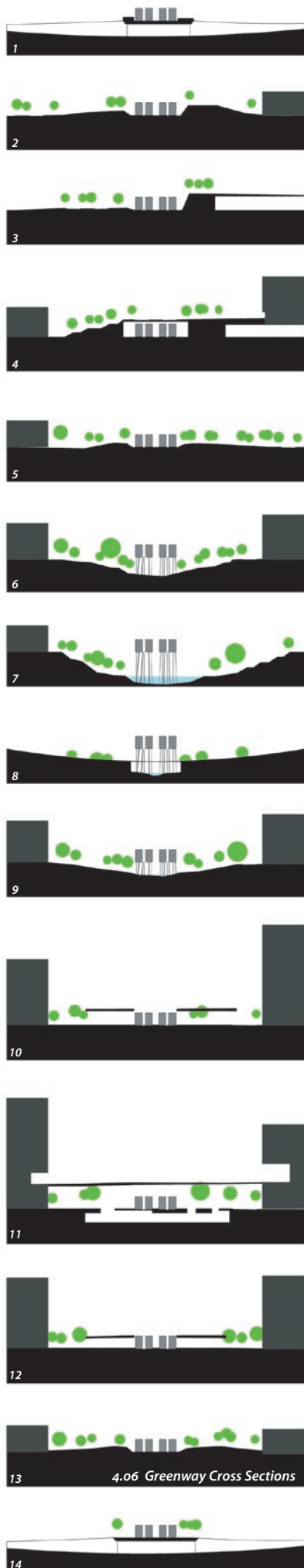
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The Vision and Strategy

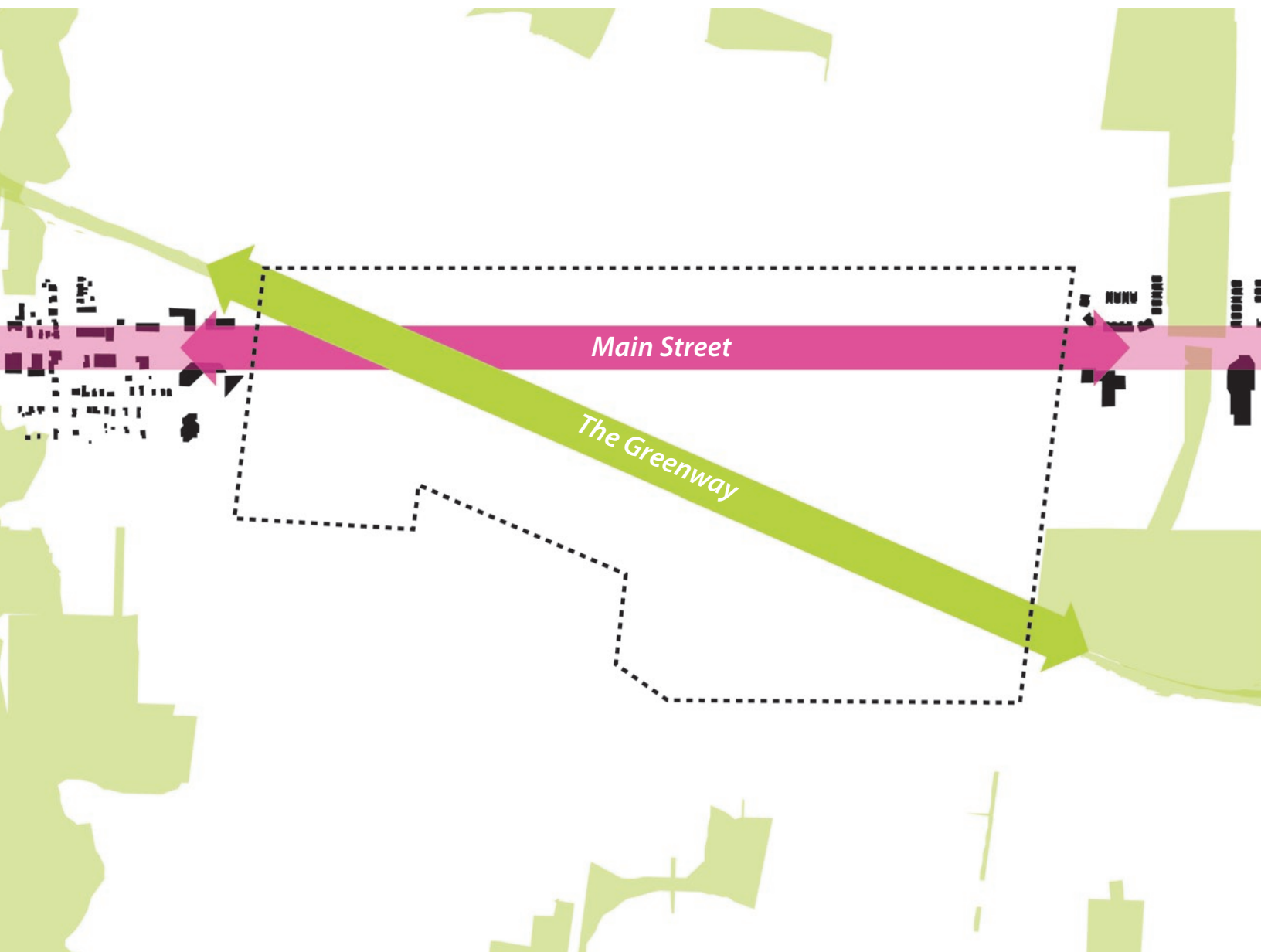
The following proposal presents a vision for this site which includes strategies to induce infill development, and a framework structured to absorb future intensification. While this vision promises a renewed sense of vitality and identity for Milton, it also brings this growth centre towards the goals outlined in the Provincial Growth Plan. This vision is pursued as an example, as it is possible that the basic intensification strategies within this approach could be applied to similar sites in other growth centres across the region.

The long-term vision of this framework presents a dense mixed-use community structured around high order public transit and a major natural corridor. As one of only three designated growth centres in the Halton Region, significant amounts of infill development will be directed to Milton as the region grows. For the municipality, this approach presents a way in which intensification can be addressed in a coordinated effort that will transform Milton, bringing new life to an underused fragment in its core.

The primary attractor for this vision is the presence of a regional transit station. A proportionally higher density is projected close to the GO station, tapering down to meet the lower density neighbourhoods to the north and south of the site. Linking into these existing neighbourhoods is also a priority, broadening the sense of community and the possibility for an integrated pedestrian network in the town.

This proposal is organized into four sections. The first section introduces two primary armatures as critical elements of this vision which create links at larger scales and influence the overall character of this neighborhood. The second section outlines the block structure; an urban framework that absorbs future intensification into a cohesive urban pattern. The third section focuses on creating links across the railway and how special intersections can be opportunities to improve the quality of the public realm.

The final section is a spatial exploration of how the proposed green corridor could be formed. This design exercise examines the interface between the first three sections and presents images of what this corridor could evolve into. This section presents the character of an intervention which has the potential to generate momentum for intensification and integrate dense urbanism with natural systems.



4.07 Proposed Primary Armatures 1:10,000

The Greenway

The CN Rail Corridor currently carries the GO commuter trains into downtown Toronto, and crosses through natural areas on either side of the site. The rail corridor is re-envisioned as major public park which connects adjacent neighbourhoods, and natural areas. This armature connects the existing green areas within the town to the larger Greenbelt to the west.

Main Street

Milton's historic Main Street continues from the original commercial nucleus of the town through the site before it then bisects a residential area and a collection of public buildings. The proposed boulevard references the historic quality of the Town, and acts to bridge the industrial area between the older neighbourhood to the west with the emerging residential district to the east.

Primary Armatures

The guiding gesture of this vision consists of two distinct armatures that pass through the site connecting important areas on either side. The Greenway and the Main Street are the elements which all other aspects of this vision relate to, and these two primary armatures are crucial to future of this community and the town as a whole. For both of these armatures, an analysis of the existing conditions is followed by drawings and images of a proposed intervention.

The Greenway is envisioned as an attractor for intensification, offering a major park amenity that can be developed in parallel with intensification. The seed of this intervention already exists along the railway corridor, and with cooperation and a clear direction, can evolve into the primary focal point of this community and a major public element within Milton.

For the Main Street, the primary goal is to improve the linkages that currently exist, and establish a character that speaks to the heritage of the Town. Main Street is already a dominant armature in Milton, and in this vision the portion of it which crosses the site is transformed to reflect this importance and character.



4.08 The Existing Natural Corridor : Looking West Towards the Niagara Escarpment





The Greenway: Existing Conditions

4.09 Existing natural elements

The existing natural areas at either end of the site consist of preserved woodlots, public parks, ponds, the floodplains of local rivers and the CN railway corridor. Currently, several plant and wildlife species are able to coexist with the operating rail service. This armature has the potential to link and enhance the significant natural features within the Town of Milton.

Greenways

Linear natural features, greenways usually include public access or trails. In addition to existing natural areas such as tree lines, parks or river corridors, greenways also exist along highway and utility corridors, railway lines, and other linear rights of way.

Urban Bioswale

Bioswales absorb surface run-off, clean it through vegetated filtration and send it back to the water table. Swales usually have a large underground holding capacity for storm water fluctuations.

Retention Pond

Created to absorb peak water loads during major storms, retention ponds are often integrated into suburban schemes in order to balance the gross levels of filtration.

Living Machine

A water purification method using abiotic and biotic processes followed by natural filtration through a variety of different water based ecosystems.

Green Street

A street which is infrequently used by cars constructed with minimum amounts of paved areas allowing for high levels of filtration.

In Milton, the existing green spaces and natural areas consist of preserved tree-lines and wood-lots, public parks and ponds, and the banks of 16-mile creek and local streams which feed into it.

Adjacent to the railway corridor to the east of the site, there are a number of older wood-lots mixed with new storm-water management ponds for new developments. Also, the new Lions Sports Park builds on the cluster of recreational facilities found in this part of Milton. To the west of the site there are major parks and natural areas, the most notable being the Centennial Park, the Mill Pond and the Rotary Park. These features combined with the forest that surrounds them form a consolidated presence of nature in the Town.

There is a wide range of uses with varying degrees of activity flanking the railway corridor as it passes through Milton. As you follow the tracks west towards the Niagara Escarpment, nature is increasingly present in the frame. In certain areas, there are schoolyards and large common spaces for residential buildings located beside the rail line.

All along the tracks, sites which are seemingly abandoned are now in the process of re-naturalizing. Within the CN right-of-way, there is further evidence of nature reclaiming this inaccessible landscape. It is clear that a great number of plant and wildlife species are able to coexist with the operating rail service.

A recent zoning by-law requires that all new buildings along the railway corridor be located 30 metres from the CN rail right-of-way.¹ There is also a policy in the Milton Official Plan which recommends a 20-metre wide linkage along the length of the railway corridor.² These policies offer a mechanism by which to instigate a major public thoroughfare along the railway tracks.

Building on the existing vegetated corridor along the railway tracks, and the rich public green spaces in the older parts of Milton, the Greenway proposal explores how we can develop communities and publicly accessible natural areas adjacent to a functional railway line.

¹ Town of Milton - Zoning Bylaw 4.18.4

² Town of Milton - Official Plan, Section 3.5.3.15

4.10 Greenway Interface Plan 1:750

- Lightwells and Access to Services Below
- Green Courtyards
- Building Footprints
- Community Buildings
- Railway Bridge



The Greenway Proposal

Steps towards creating a Greenway in Milton

1. Present a clear and consistent vision.

A coordinated approach is required to direct the development of this corridor. While it is important that this vision is tangible, it must also be flexible to accommodate a range of projects and initiatives over a long period of time.

2. Establish a relationship with CN Rail.

A partnership with the CN Railway Company will be crucial to the development of the Greenway. Creative collaborations and innovative development approaches will be necessary to address the intricate problems on this site.

3. Initiate a public attractor.

The initial phase of intervention is to introduce basic environmental improvements such as linking existing pathways, acquiring and landscaping vacant sites. The first phase must establish the sense of public ownership, as the activity will attract interest followed by speculation.

4. Link developments into an ongoing process.

The evolution of this element needs to be carefully monitored. As development occurs it will need to be coordinated and link into a common vision. Utilizing the 30-metre zoning setback from the railway corridor, developments can tie directly into the greenway and to one another.

As a primary pedestrian corridor weaving through the town, the proposed Greenway is a linear common linking small courtyards and recreational areas with broad public spaces using a system of paths and green streets. This proposal explores the interface of the natural and urban edges along the railway tracks and at modal crossings to pursue the creation of a continuous public park that connects a dense urban condition to the broader natural system of the Greenbelt.

This armature is proposed as a phased intervention, starting with a modest path along either side of the railway tracks. This initial gesture, while simple, can help to establish a lasting sense of public ownership. Presenting a strong vision outlining what the Greenway can offer to the neighbourhood will guide the nature of future development on the site. In an additive process, further intensification can be directed and shaped to enrich and articulate this armature.

The Greenway can be seen as a catalyst which draws attention to this site, initiating the momentum that could ultimately transform this urban void into a thriving neighbourhood. As it evolves, the Greenway will continue to act as a magnet for intensification, raising land values and density, eventually forming a major public amenity for the entire Town.

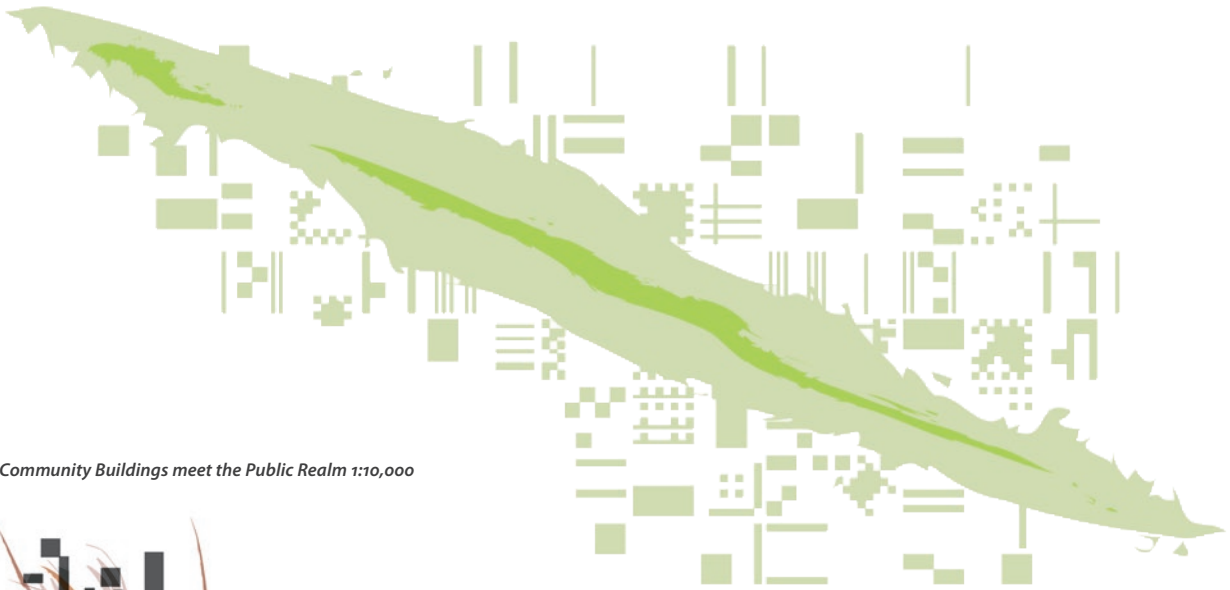


4.11 Proposed Greenway Section A 1:750

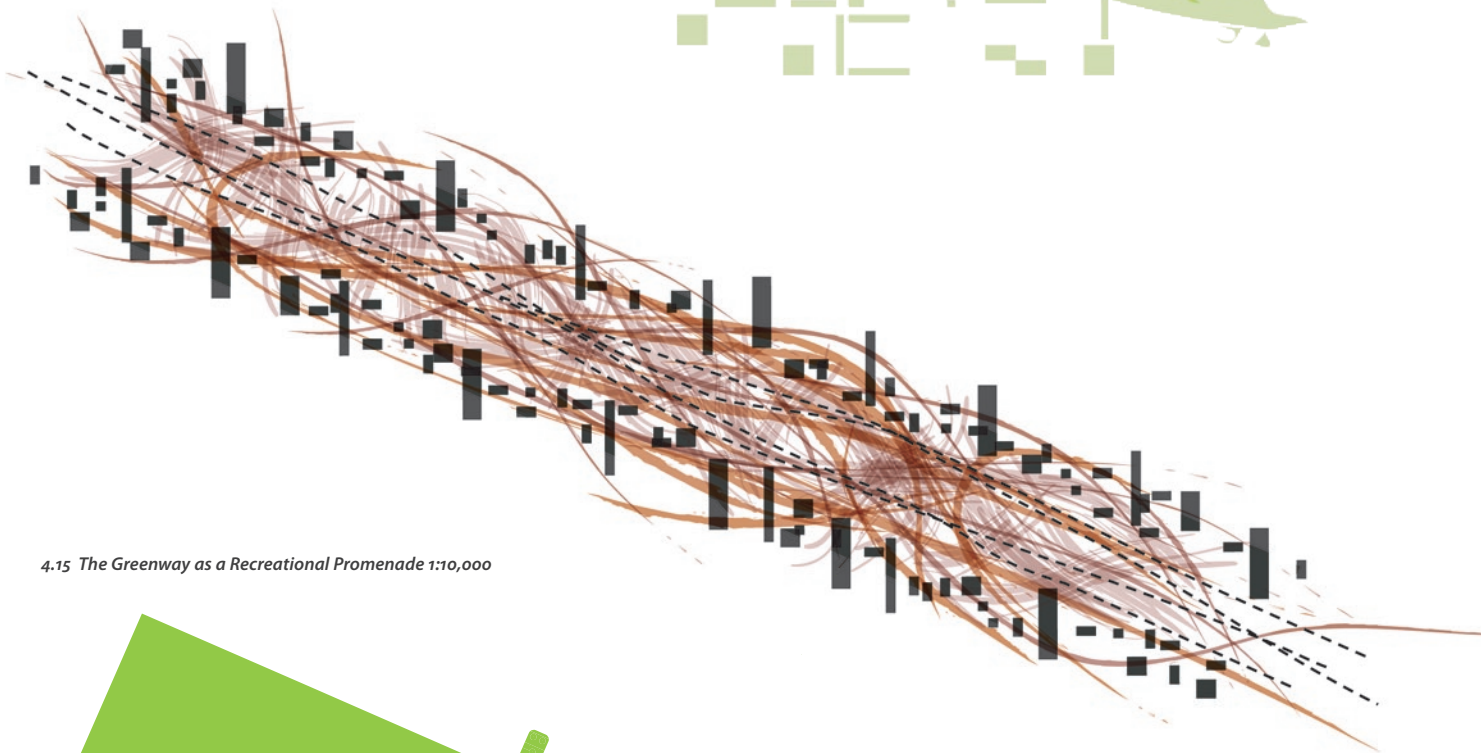


4.12 Proposed Greenway Section B 1:750

4.13 Conceptual Ecological Mosaic and Open Space Network 1:10,000



4.14 Community Buildings meet the Public Realm 1:10,000

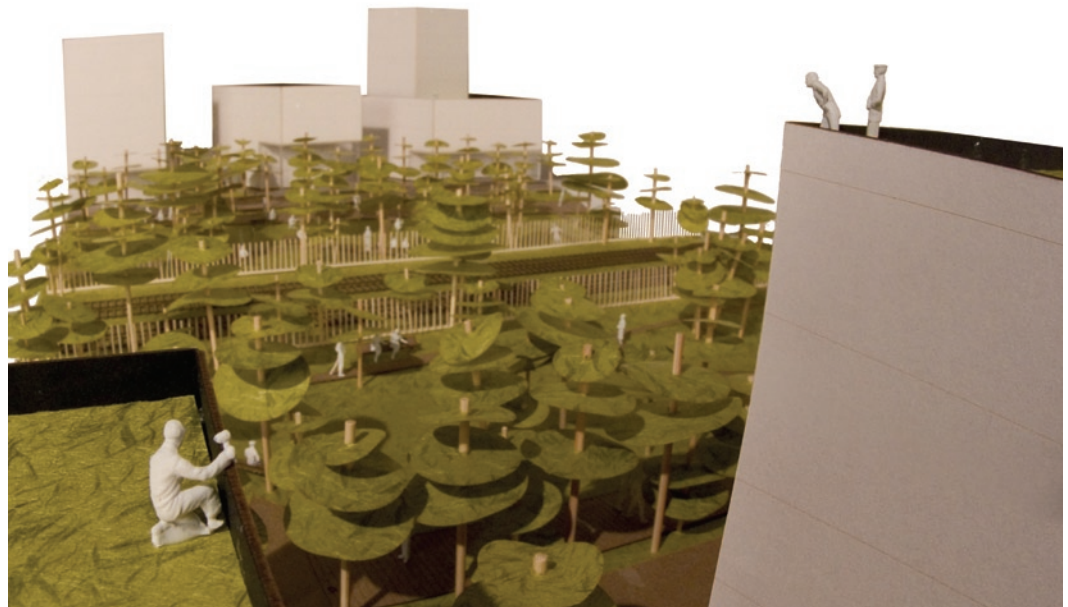


4.15 The Greenway as a Recreational Promenade 1:10,000

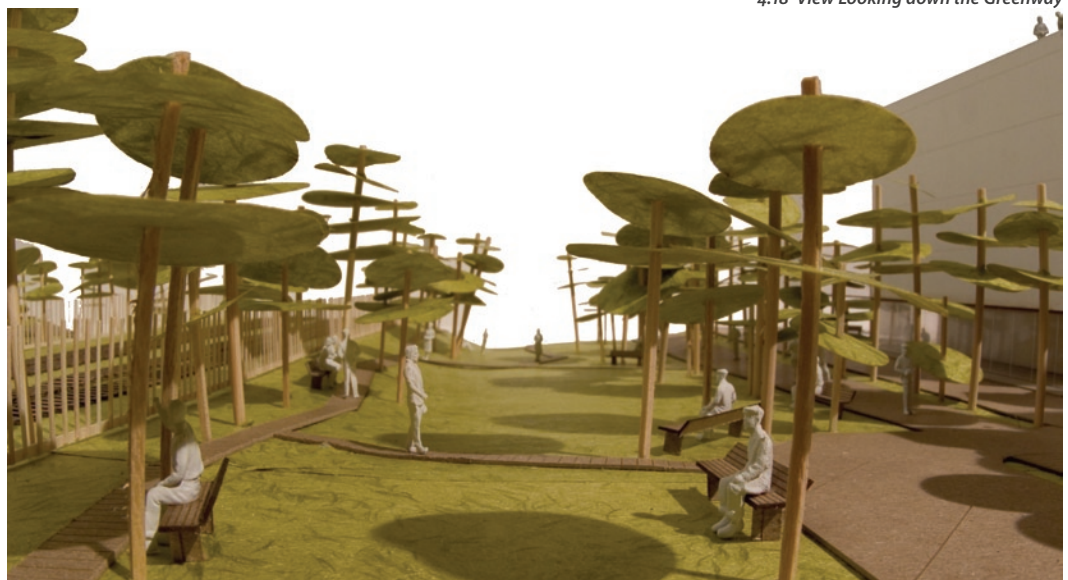




4.16 View of the Primary Pedestrian Path Green



4.17 View of the Greenway From Adjacent Rooftops



4.18 View Looking down the Greenway





4.19 View of the Greenway at the Proposed Stormwater Park



4.20 Milton's Main Street Intersection at Ontario Street



4.21 Existing Street Section A - Main Street between Bronte Street and Ontario Street 1:200



4.22 Existing Street Section B - Main Street between Ontario Street and Thompson Road 1:200



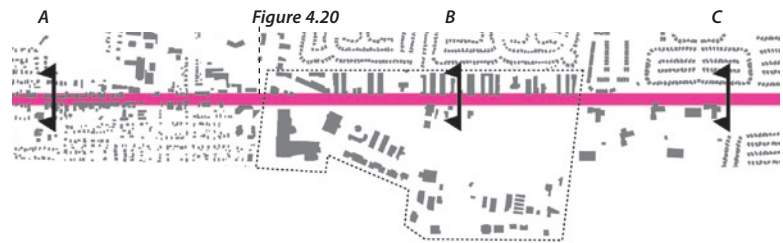
4.23 Existing Street Section C - Main Street between Thompson Road and 4th Line (James Snow Parkway) 1:200



Main Street Milton: Existing Conditions

A Historic Main Street

The older portion of Main Street has long been the major urban armature of the town. It contains most of the small-scale retail and commercial services, restaurants and specialty shops. Many services and municipal buildings are located along the older section of Main Street. This section is characteristic of traditional Milton, it is the backbone of its urban heritage, and the part of Main street that is the most pleasant to walk.



4.24 Milton's Main Street Key Plan

B Main St. between Ontario St. and Thompson

Aside from the Milton Mall, and a few medium sized commercial buildings, there are no buildings on the south side of Main Street, and certainly none that front directly on to its sidewalk. On the north side of the street there are a series of industrial condominiums which occasionally address Main Street, but are generally accessed from either side by a driveway. These strip buildings are set back from the road, and while there is a sidewalk, there isn't much activity worth walking to.



4.25 The Original Main Street
Source: Halton Images

C New Main Street: The Suburban Boulevard

In the recent residential expansion, houses have been built along the north side of Main Street. While these houses are accessed by car from the behind, they all have been designed to address Main Street with an entrance and usually a porch. The south side of the street is populated with municipal amenities such as Bishop Redding high school, Lions Sport Park and the Milton Leisure Centre. These buildings are usually set very far back from Main Street, and in some cases there are large vacant sites, which appear to be waiting for future amenities or non-residential buildings. In the middle of Main Street, a treed boulevard splits four lanes of traffic.



4.26 The New Suburban Boulevard

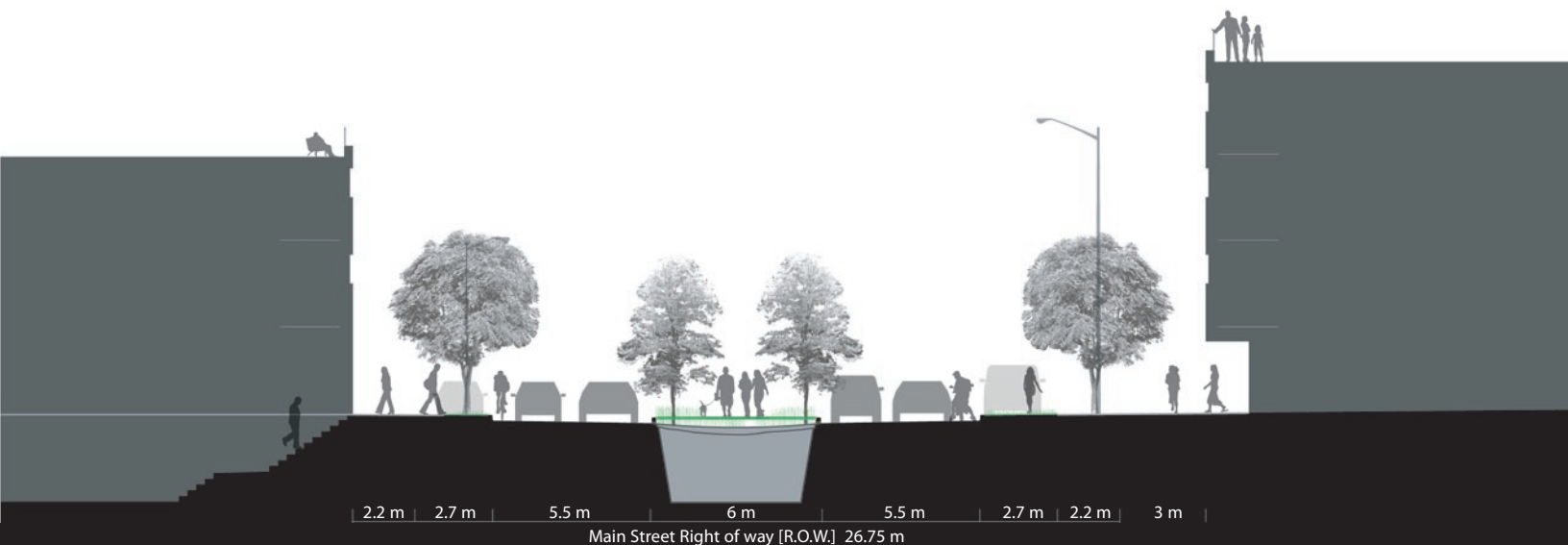
4.30 Proposed Main Street Plan 1:750

- Lightwells and Access to Services Below
- Green Courtyards
- Building Footprints
- Retail and Community Buildings



Proposed Main Street

The treatment of the Main Street is a special condition that is intended to promote this armature as a focal point within the town. The Main Street will be the element that will tie the newer parts of Milton back to its origin as a small agricultural town. The proposal for the section of Main Street, which crosses the site area, prescribes a consistent street edge on both sides of the street, with retail and other public uses working to animate the street environment. In the centre of the street, a pedestrian boulevard planted with grasses and trees collects storm water and returns it to the water table.

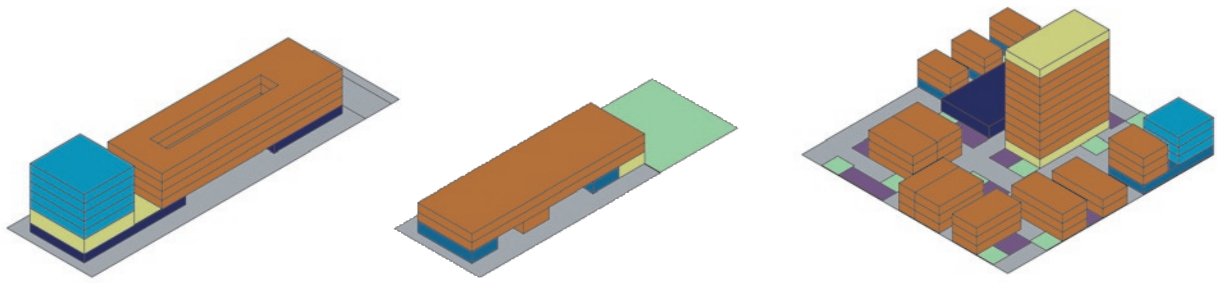


4.31 Proposed Main Street Section 1:200





4.32 View of the Proposed Main Street



4.41 Block Type A1 - Main Street Condition

4.42 Block Type A2 - Greenway Condition

4.43 Block Type B



4.44 Proposed Block Structure 1:10,000

Block Generation and Calculation Methods

Several options have been generated for the three above block types. These options are configured according to a set of guidelines, and always include more than one programmatic use. Their densities have been calculated using two techniques. Units per hectare [UPH], and Floor-Area-Ratio [FAR]. The number of units have been calculated according to the following averages. Certain uses inherently create more units per floor area than others. See fig. 1.39 on page 34 for details.

Program	Floor area per unit
Residential	95 m ²
Small Commercial	40 m ²
Large Commercial	40 m ²
Office	28 m ²
Amenities	52 m ²
Green Spaces	
Apertures	

$$\text{Floor Area Ratio [FAR]} = \left[\frac{\text{total floor area [m}^2\text{]}}{\text{gross site area [m}^2\text{]}} \right]$$

Units per Hectare [UPH]

$$\text{Total number of units} \div \left[\frac{\text{gross site area [m}^2\text{]}}{\text{one hectare [10,000m}^2\text{]}} \right]$$

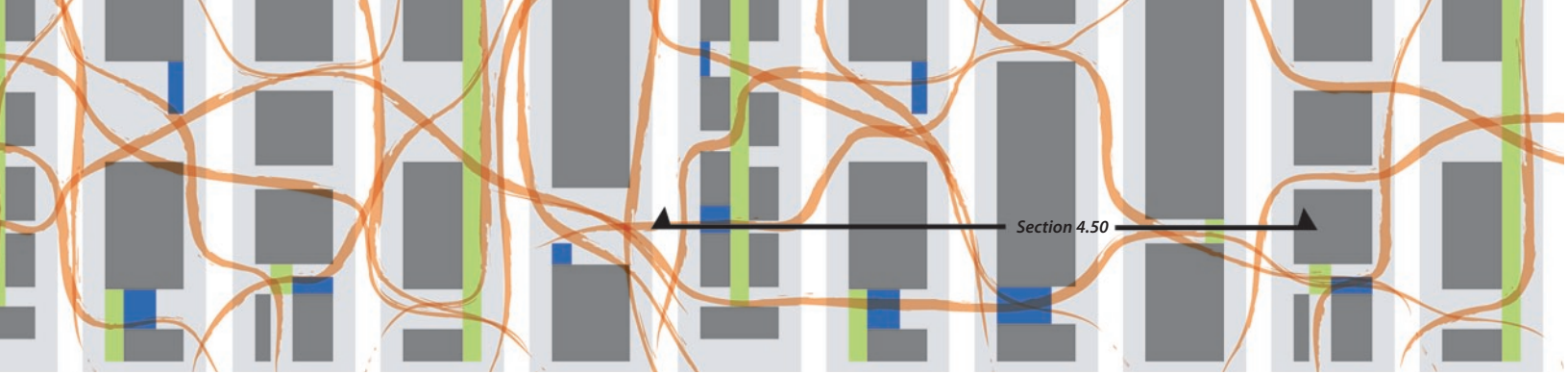
Proposed Block Structure

As the organization of urban blocks prescribes the basic format that the city will take as it grows, the proposed block structure will influence the future urban fabric in Milton. While the density and specific form of the projects that fill these blocks will vary, the basic block pattern guides the site's morphology. This structure serves as a framework to accommodate the future infill developments that will eventually form a new core district in the Town.

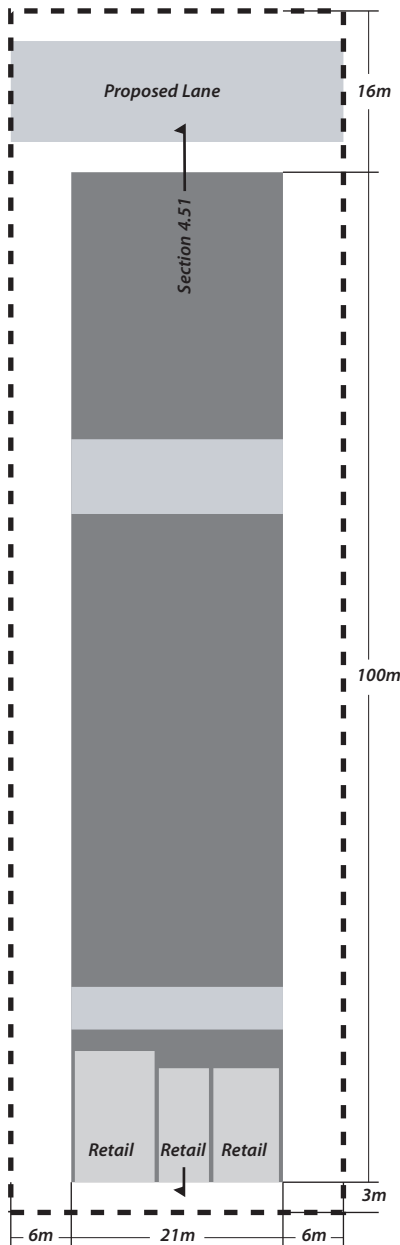
The proposed block structure emerges through an adaptation of existing conditions on the site. Many of the existing properties have little or no proposed alteration to their dimensions. Larger properties on the site, particularly the areas adjacent to the railway corridor, have been modified to a block pattern which echoes the original patterns of the town, and is also approximately the size of a large suburban big box store.

Two different block types are proposed as examples of how this new approach could be realized. For each block type, guidelines concerning street frontage, open space minimums, public thoroughfares and distributed amenities are outlined. Several options have been developed to illustrate the variety of form and density that could be accommodated within this framework. These examples combine residential, commercial and office uses as well as public amenities to serve the broader community.

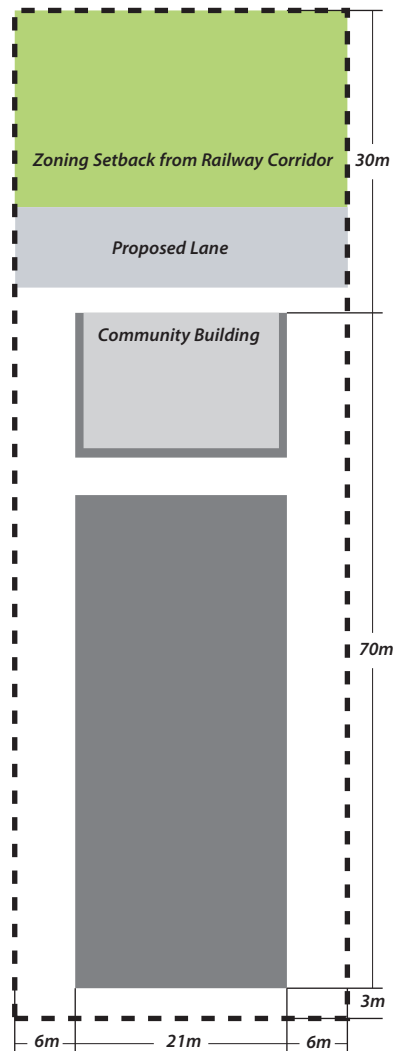
The general design principles for each block prioritize the development of a positive, accessible pedestrian network of public spaces and streets. A clear public realm with visible activity and a strong sense of community safety will increase the land value along with the desire to live there.



4.45 Through Block Movement [Block Type A1]



4.46 Block A1 - Typical Plan 1:750



4.47 Block A2 - Typical Plan 1:750

Block type A - Main Street type

Located to the north of Main Street, these long thin sites are currently occupied by storage units, automobile repair garages, light industrial and manufacturing uses. This existing urban structure will be highly flexible in developing a fluid neighbourhood connecting the residential area to the north with the Main Street and GO commuter train station.

Edges, Setbacks and Streets:

An additional three metre setback from Main Street is proposed to increase the North sidewalk which receives more sun throughout the day.

At the north end of these blocks, a lane is proposed to connect the blocks together, and to open up the site to the adjacent residential neighbourhood north of the site.

Along Main Street, Retail and other public uses are proposed to bring life to the street and improve the pedestrian environment.

Range of Density: 100 - 300 UPH

Block type A - Greenway Type

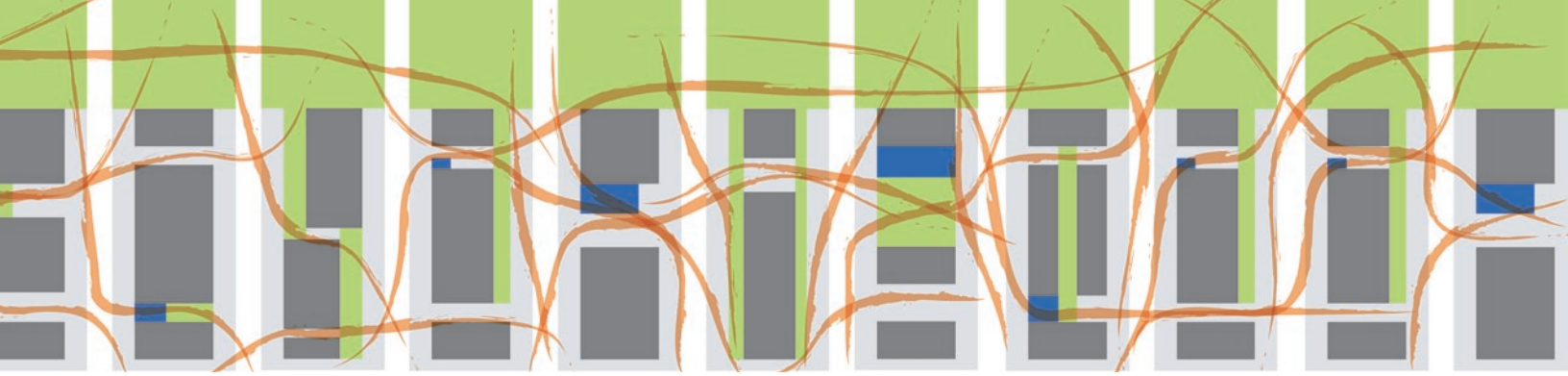
These long and narrow blocks are oriented perpendicular to the Greenway, are currently industrial uses which back right up to the railway right of way. In the 2003 official plan, a zoning setback from this right of way of 30 metres was introduced.

Edges, Setbacks and Streets:

Along the Greenway, a small street is proposed to clearly define the public Greenway from the built fabric, and to facilitate vehicular access and servicing throughout the neighbourhood. Community buildings are proposed along this edge to bring a sense of communal ownership to the Greenway.

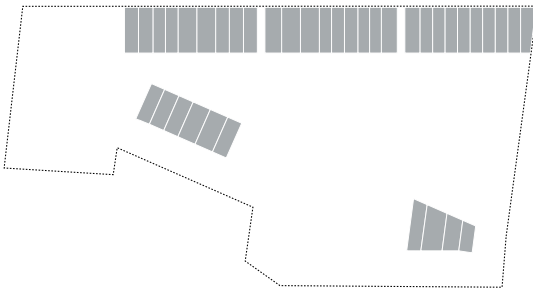
The Streets between these blocks are designed to carry stormwater to the Greenway, and cleanse it along the way through the use of integrated bioswales.

Proposed Range of Density: 100 - 300 UPH



4.48 Through Block Movement [Block Type A2]

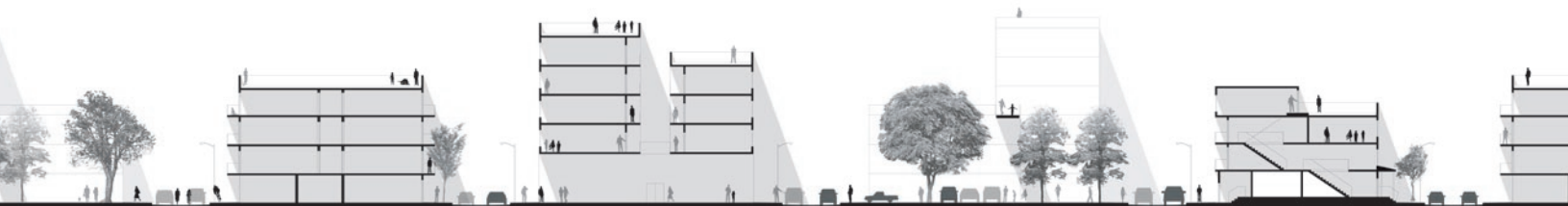
Block A Guidelines



4.49 Block Type A Locations

The guidelines for this block type maintain the existing property formation on site. While the present industrial functions and devices such as parking lots, fences separate them from one another, the configuration of these long and narrow blocks inherently provides a system of access between them.

In the reurbanization of the site, a much more fluid and connected condition is desired. This could be achieved by opening up the ends of these blocks, using consistent setbacks, and providing lanes for access. Connections through buildings are encouraged to subdivide the blocks further. Public and retail uses are proposed on ground level of the short ends of these blocks.



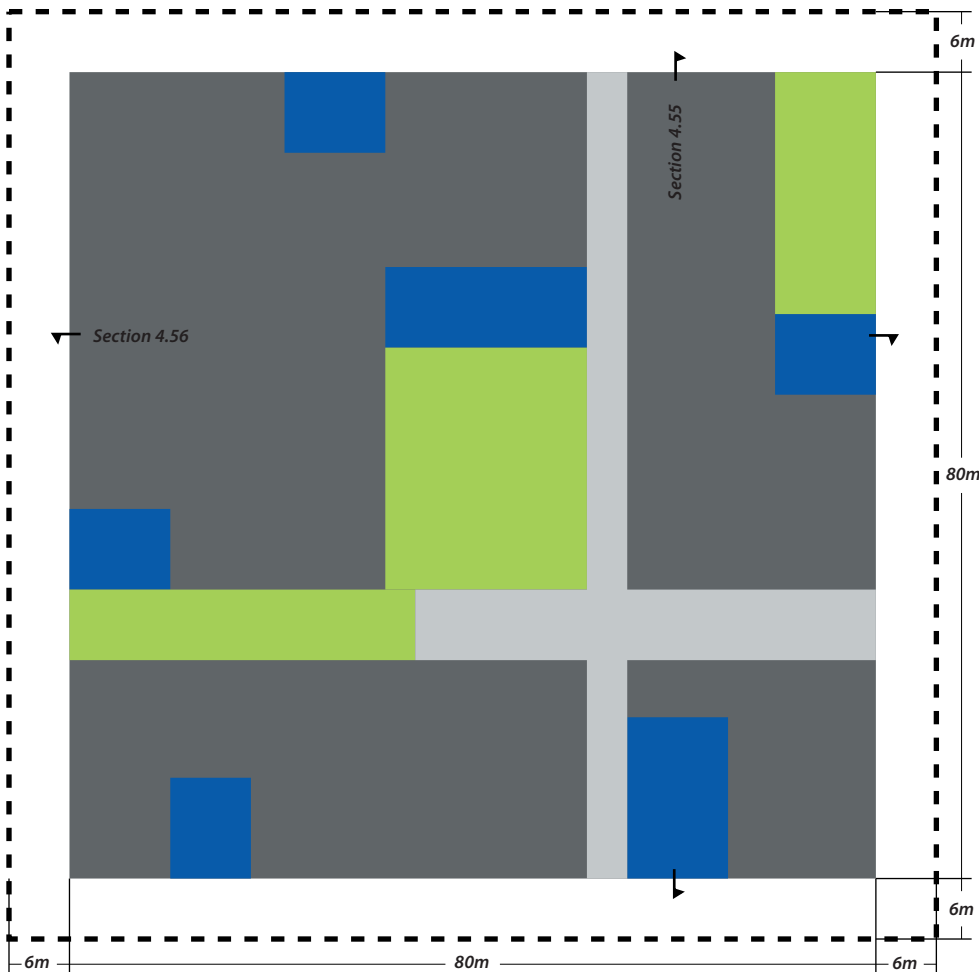
4.50 Proposed Block A Cross Section 1:750



4.51 Proposed Block A Longitudinal Section 1:750



4.52 Through Block Movement [Block Type B]



4.53 Block B Plan 1:750

Area Breakdown

Aside from a six metre setback around the block for streets and sidewalks, additional requirements for block organization and design are as follows:

15% Green Spaces

At grade landscaped areas

10% Apertures

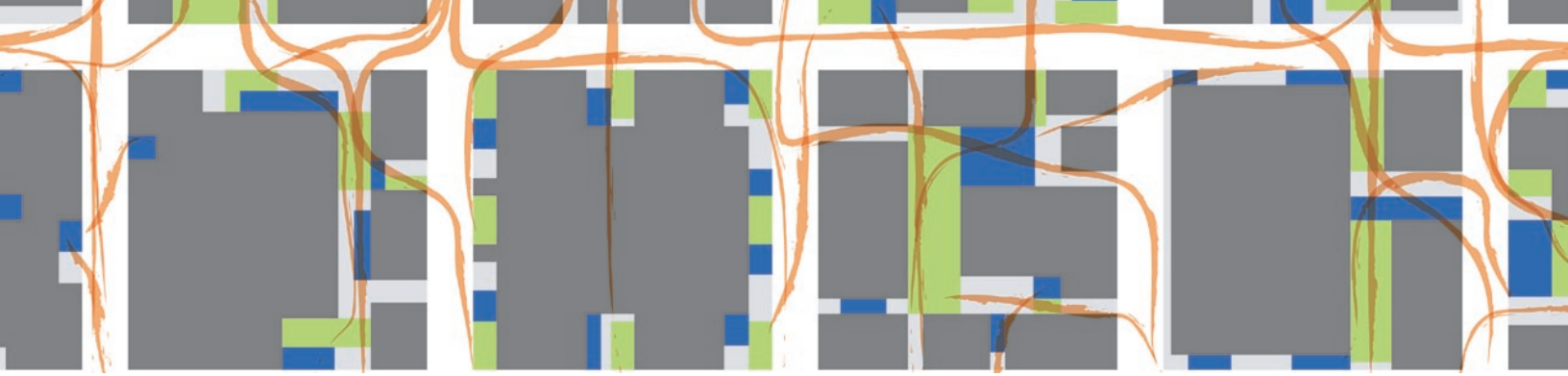
Access points to underground parking and lowered plazas, apertures are preferably located outdoors on the south side of buildings, but are also possible within lobbies and entrances of the buildings above.

10% Through Lanes

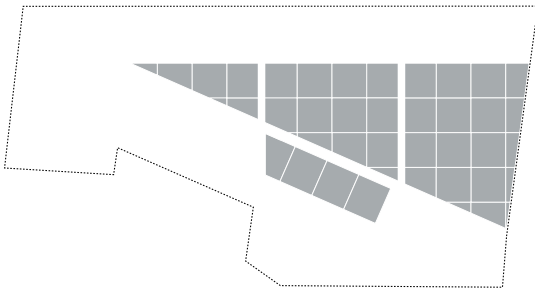
For fluid movement through the neighbourhood and access to interior portions of blocks, through-lanes can consist of a combination of green spaces and apertures, and could also pass through buildings. They should be publicly accessible and clearly marked.

50% Maximum Building Footprint

The proposed footprint limit is intended to maintain a proportion of at grade open spaces as well as to promote the construction of some taller buildings in order to establish a base density for future blocks to follow.

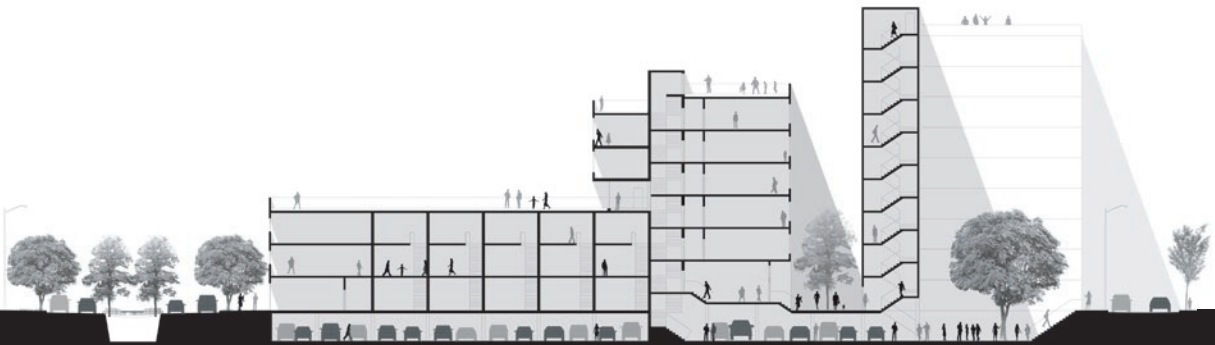


Block B Guidelines

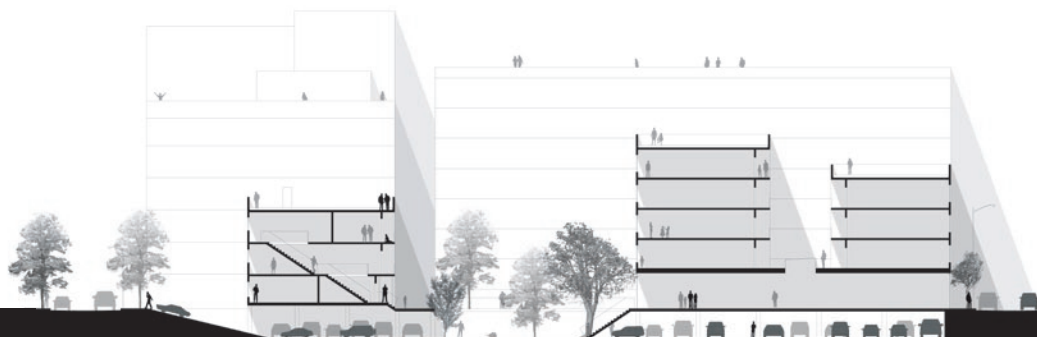


4.54 Block Type B Locations

Structured on a scale similar to the existing older grain in Milton, these blocks will become the core development sites within the 'Central Business District'. A broad grain of roughly 90 meters square has been outlined, but further subdivision will be necessary for access and compartmentalization of construction. These subdivisions will be treated as small streets or lanes and will increase the pedestrian access through these blocks.

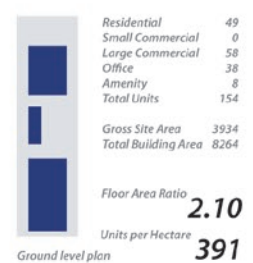
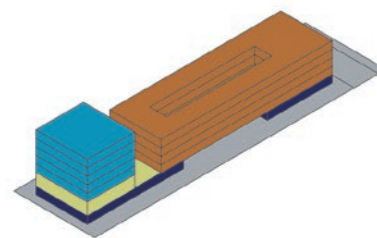
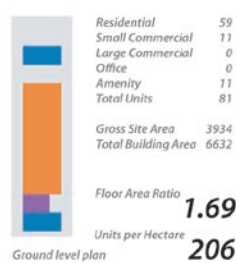
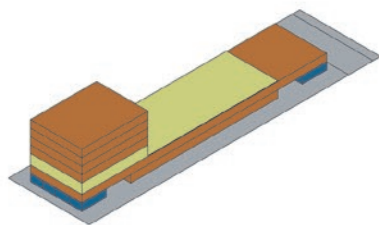
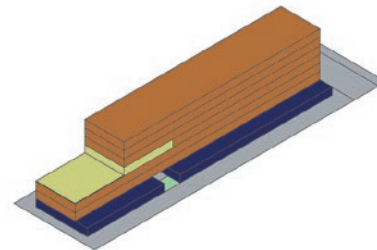
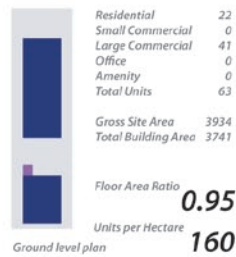
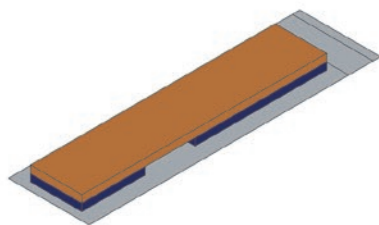
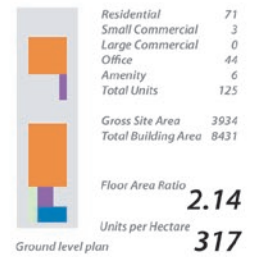
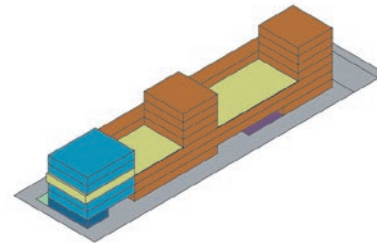
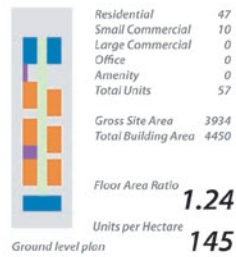
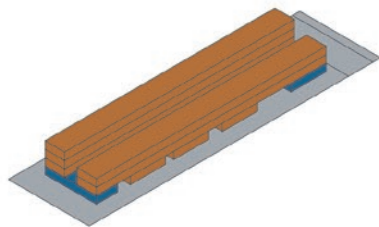
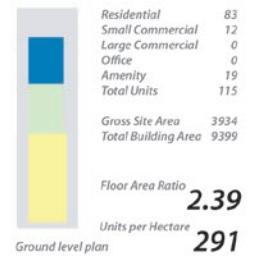
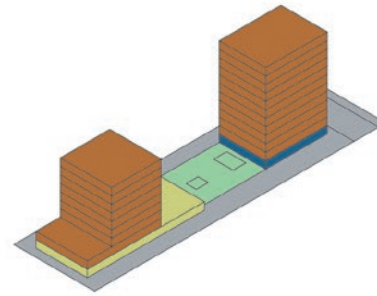
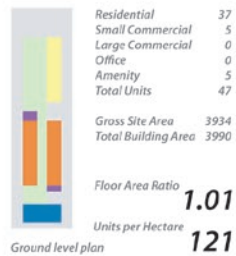
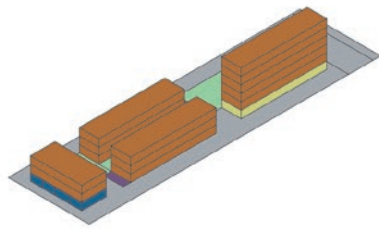
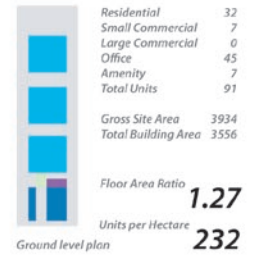
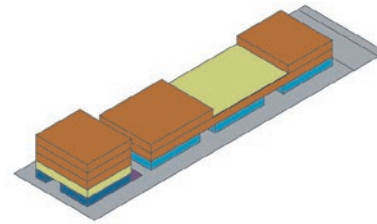
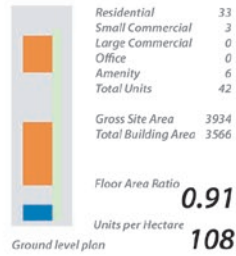
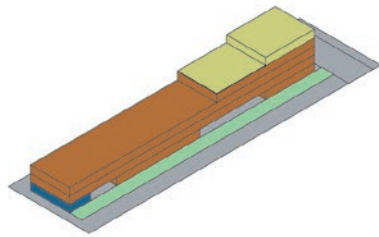


4.55 Block B Cross Section 1:750

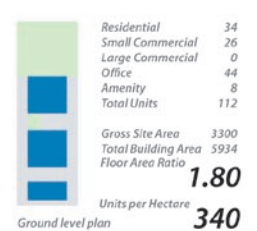
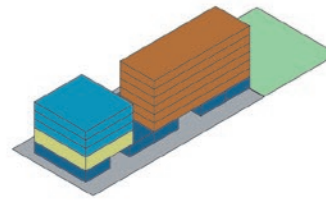
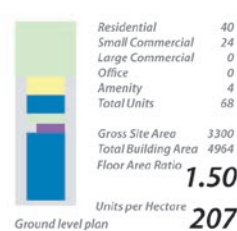
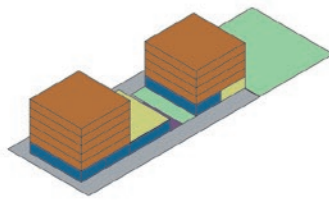
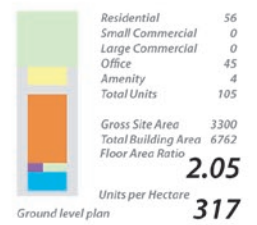
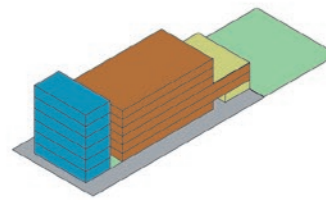
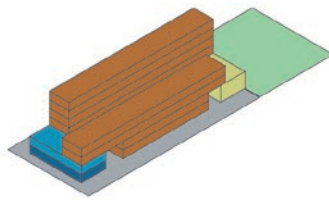
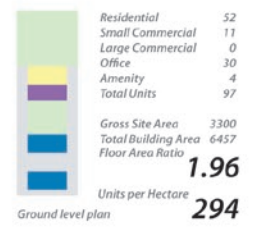
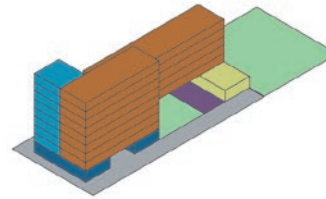
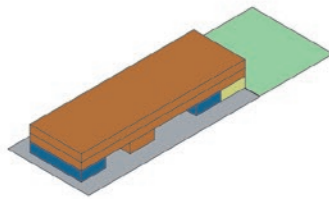
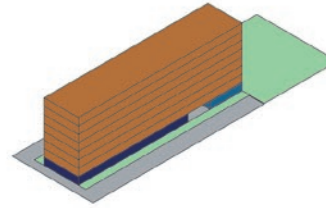
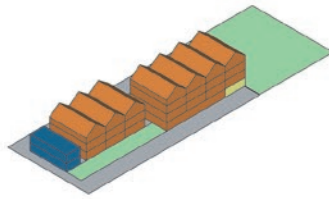
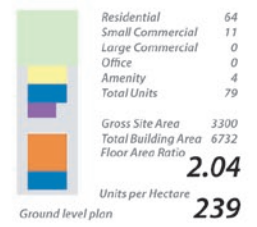
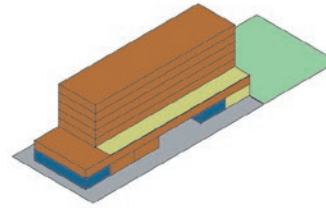
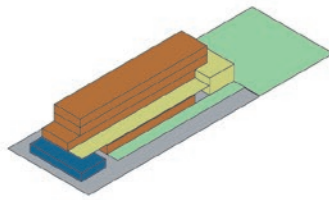


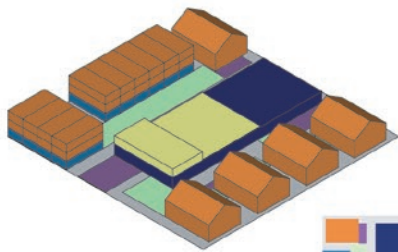
4.56 Proposed Block B Cross Section 1:750

4.57 Block A1 Options



4.58 Block A2 Options

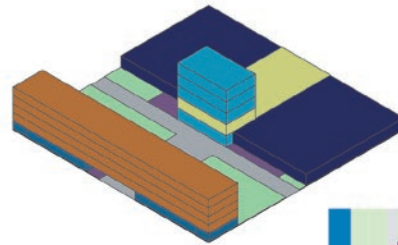




Residential 31
Small Commercial 23
Large Commercial 36
Office 0
Amenity 6
Total Units 96

Gross Site Area 8464
Total Building Area 5618

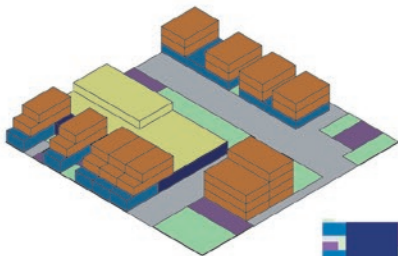
Floor Area Ratio **0.66**
Units per Hectare **113**



Residential 40
Small Commercial 18
Large Commercial 71
Office 34
Amenity 5
Total Units 168

Gross Site Area 8464
Total Building Area 8592

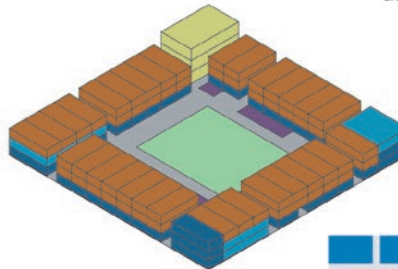
Floor Area Ratio **1.02**
Units per Hectare **199**



Residential 33
Small Commercial 28
Large Commercial 35
Office 0
Amenity 7
Total Units 103

Gross Site Area 8464
Total Building Area 6057

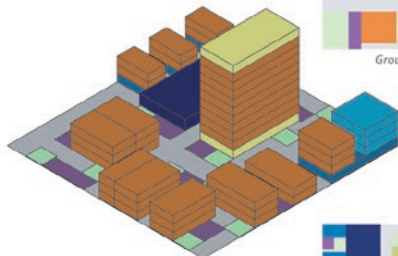
Floor Area Ratio **0.72**
Units per Hectare **122**



Residential 54
Small Commercial 80
Large Commercial 0
Office 32
Amenity 13
Total Units 179

Gross Site Area 8464
Total Building Area 9894

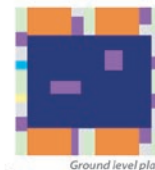
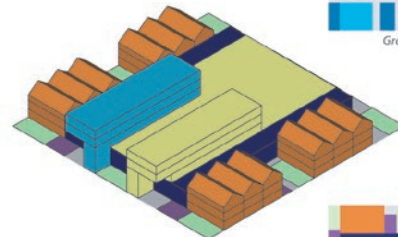
Floor Area Ratio **1.17**
Units per Hectare **211**



Residential 82
Small Commercial 9
Large Commercial 18
Office 20
Amenity 0
Total Units 129

Gross Site Area 8464
Total Building Area 9439

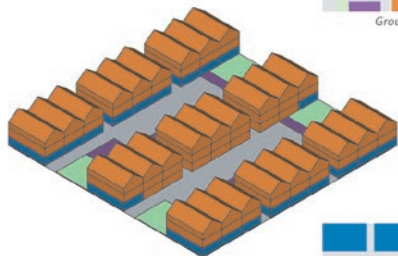
Floor Area Ratio **1.12**
Units per Hectare **153**



Residential 45
Small Commercial 0
Large Commercial 84
Office 56
Amenity 30
Total Units 216

Gross Site Area 8464
Total Building Area 10815

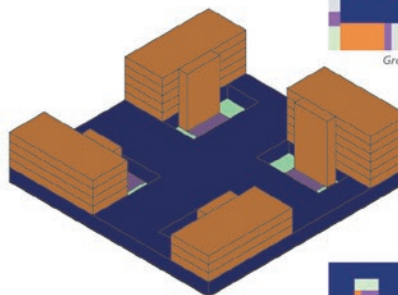
Floor Area Ratio **1.28**
Units per Hectare **255**



Residential 77
Small Commercial 60
Large Commercial 0
Office 0
Amenity 0
Total Units 137

Gross Site Area 8464
Total Building Area 9720

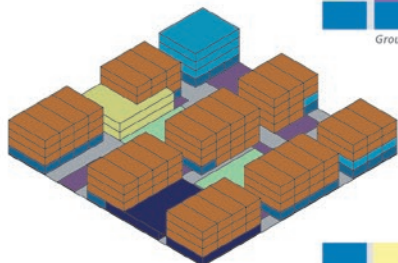
Floor Area Ratio **1.15**
Units per Hectare **162**



Residential 94
Small Commercial 0
Large Commercial 128
Office 0
Amenity 0
Total Units 221

Gross Site Area 8464
Total Building Area 14004

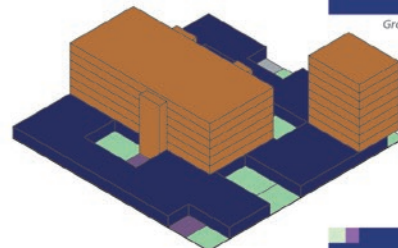
Floor Area Ratio **1.65**
Units per Hectare **261**



Residential 81
Small Commercial 43
Large Commercial 22
Office 0
Amenity 0
Total Units 147

Gross Site Area 8464
Total Building Area 10342

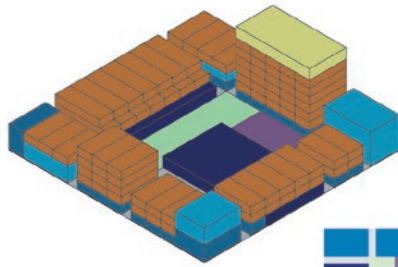
Floor Area Ratio **1.22**
Units per Hectare **173**



Residential 122
Small Commercial 0
Large Commercial 119
Office 0
Amenity 0
Total Units 241

Gross Site Area 8464
Total Building Area 16374

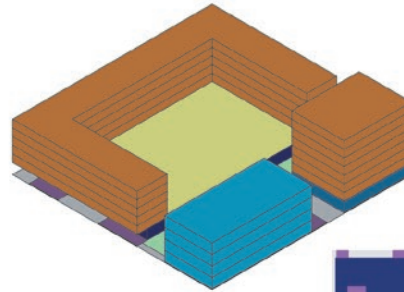
Floor Area Ratio **1.93**
Units per Hectare **285**



Residential	81
Small Commercial	50
Large Commercial	50
Office	60
Amenity	9
Total Units	250

Gross Site Area 8464
Total Building Area 13842

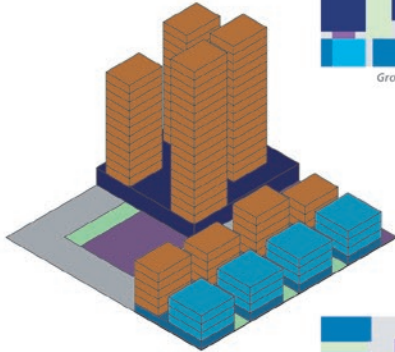
Floor Area Ratio **1.64**
Units per Hectare **295**



Residential	114
Small Commercial	40
Large Commercial	86
Office	109
Amenity	0
Total Units	349

Gross Site Area 8464
Total Building Area 20392

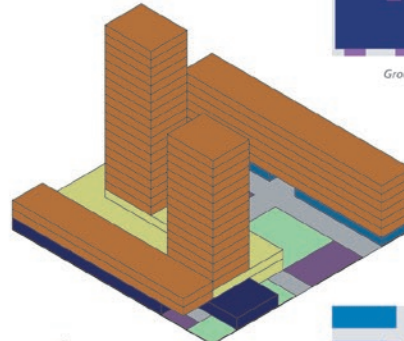
Floor Area Ratio **2.14**
Units per Hectare **413**



Residential	104
Small Commercial	37
Large Commercial	43
Office	79
Amenity	0
Total Units	262

Gross Site Area 8464
Total Building Area 15296

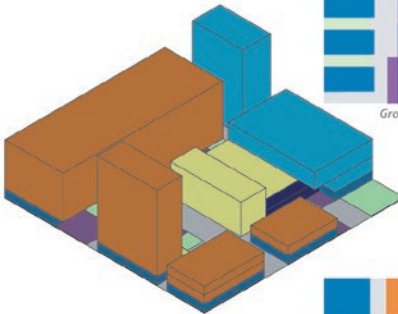
Floor Area Ratio **1.80**
Units per Hectare **310**



Residential	174
Small Commercial	21
Large Commercial	73
Office	34
Amenity	27
Total Units	329

Gross Site Area 8464
Total Building Area 22632

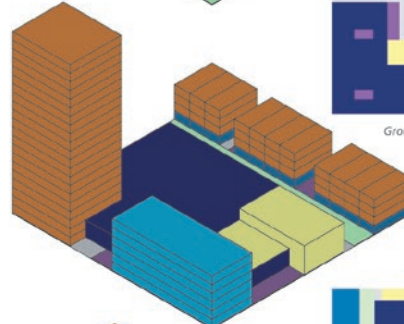
Floor Area Ratio **2.67**
Units per Hectare **389**



Residential	118
Small Commercial	41
Large Commercial	0
Office	112
Amenity	16
Total Units	287

Gross Site Area 8464
Total Building Area 16821

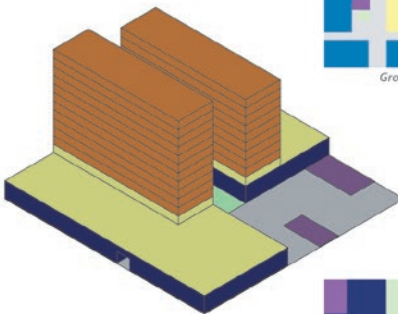
Floor Area Ratio **1.99**
Units per Hectare **340**



Residential	136
Small Commercial	25
Large Commercial	72
Office	137
Amenity	8
Total Units	377

Gross Site Area 8464
Total Building Area 21000

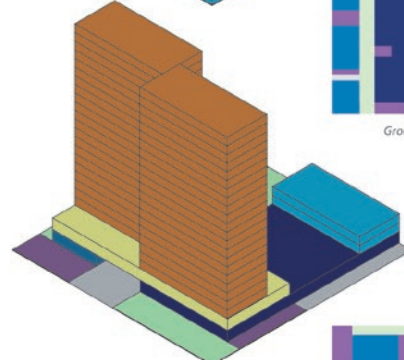
Floor Area Ratio **2.48**
Units per Hectare **446**



Residential	155
Small Commercial	0
Large Commercial	109
Office	0
Amenity	27
Total Units	291

Gross Site Area 8464
Total Building Area 20455

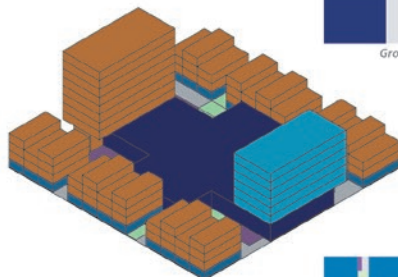
Floor Area Ratio **2.42**
Units per Hectare **343**



Residential	248
Small Commercial	11
Large Commercial	60
Office	40
Amenity	34
Total Units	392

Gross Site Area 8464
Total Building Area 29237

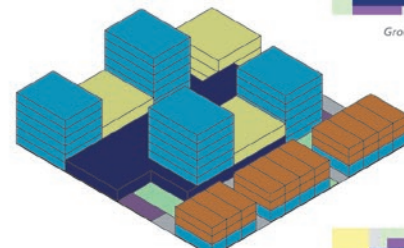
Floor Area Ratio **3.45**
Units per Hectare **464**



Residential	91
Small Commercial	50
Large Commercial	67
Office	100
Amenity	0
Total Units	308

Gross Site Area 8464
Total Building Area 16130

Floor Area Ratio **1.91**
Units per Hectare **363**



Residential	21
Small Commercial	25
Large Commercial	70
Office	257
Amenity	30
Total Units	403

Gross Site Area 8464
Total Building Area 14529

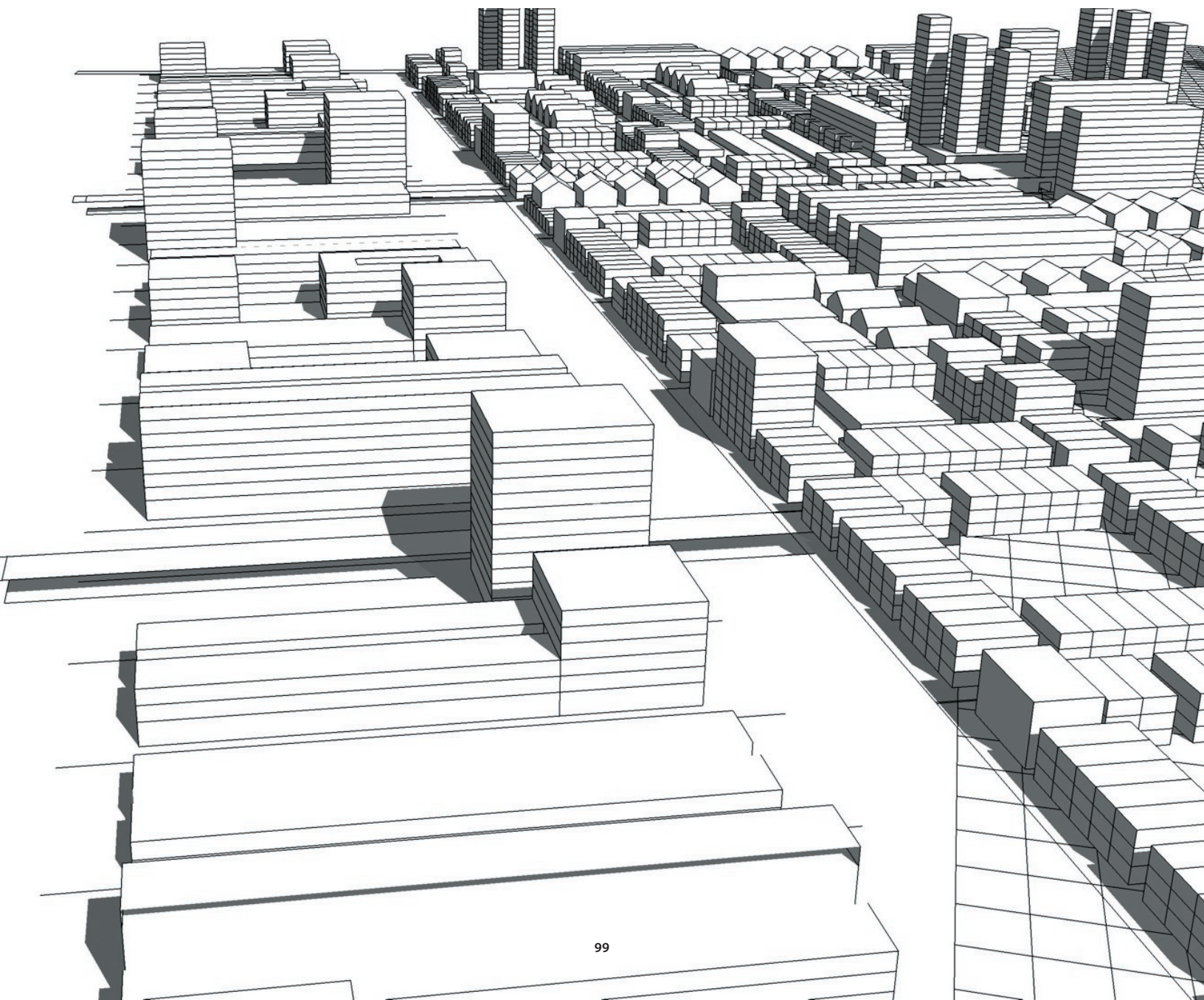
Floor Area Ratio **1.72**
Units per Hectare **476**





4.60 Looking towards the Greenway between two type A2 blocks

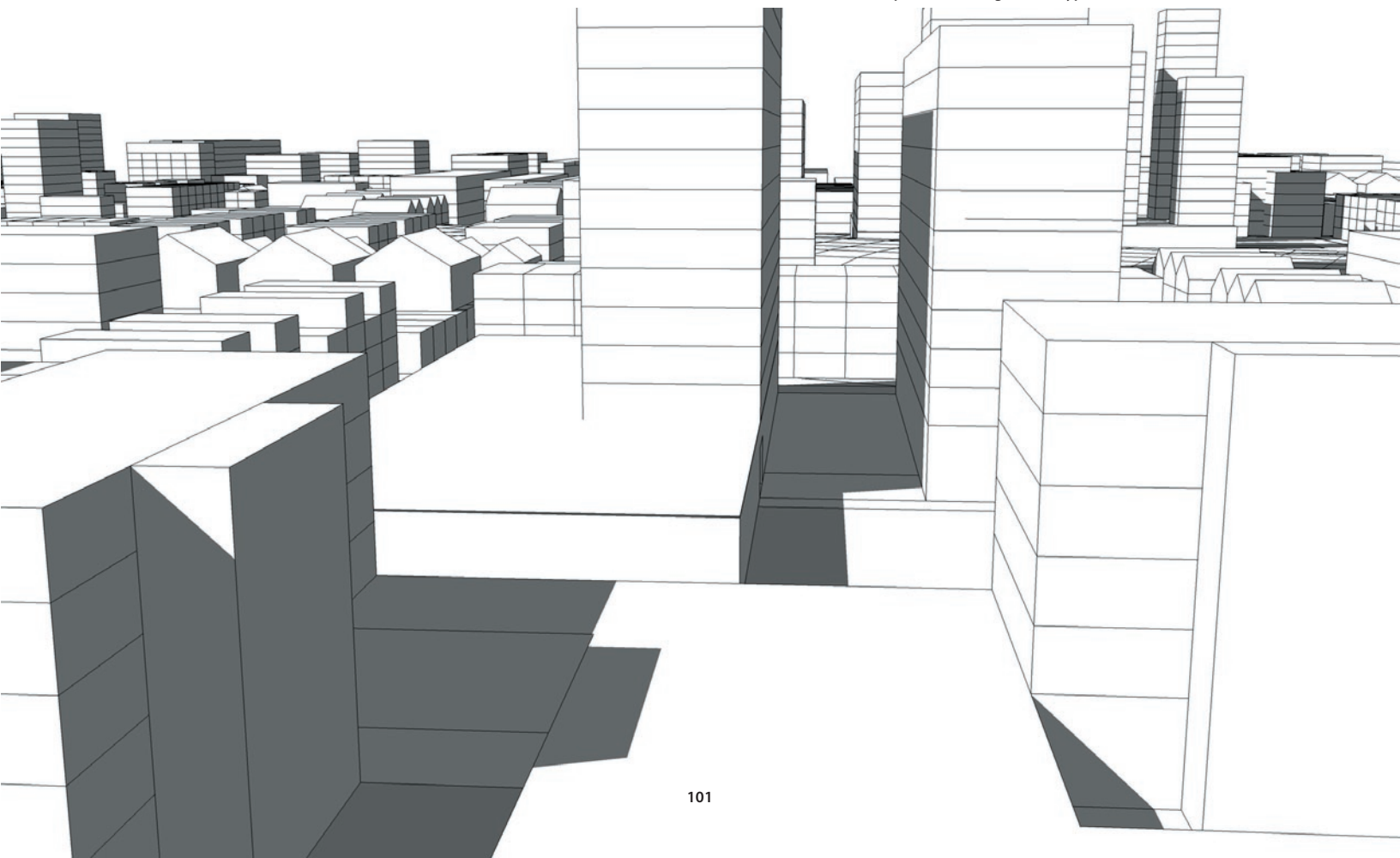
4.61 Aerial Perspective showing Block A types along Main Street Milton

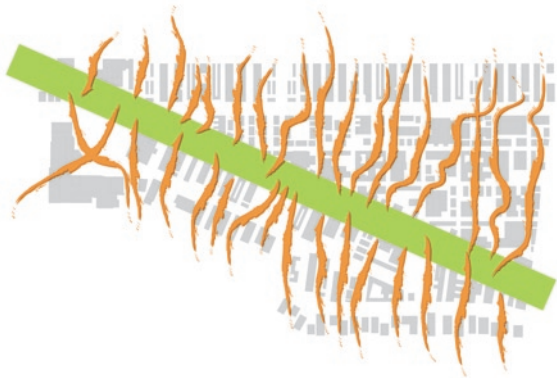




4.62 Block type B thoroughfare

4.63 Aerial Perspective showing Block B Types near the GO Station





4.70 Conceptual Neighbourhood Links 1:20,000

The development of this site will act as a link between the adjacent residential neighbourhoods to the north and south. For this to happen, it is important that the blocks are subdivided with thoroughfares and public passages, forming an open public network on ground level with as many pedestrian connections to the greenway as is possible.



4.71 Proposed Streets and Rail Crossings 1:10,000

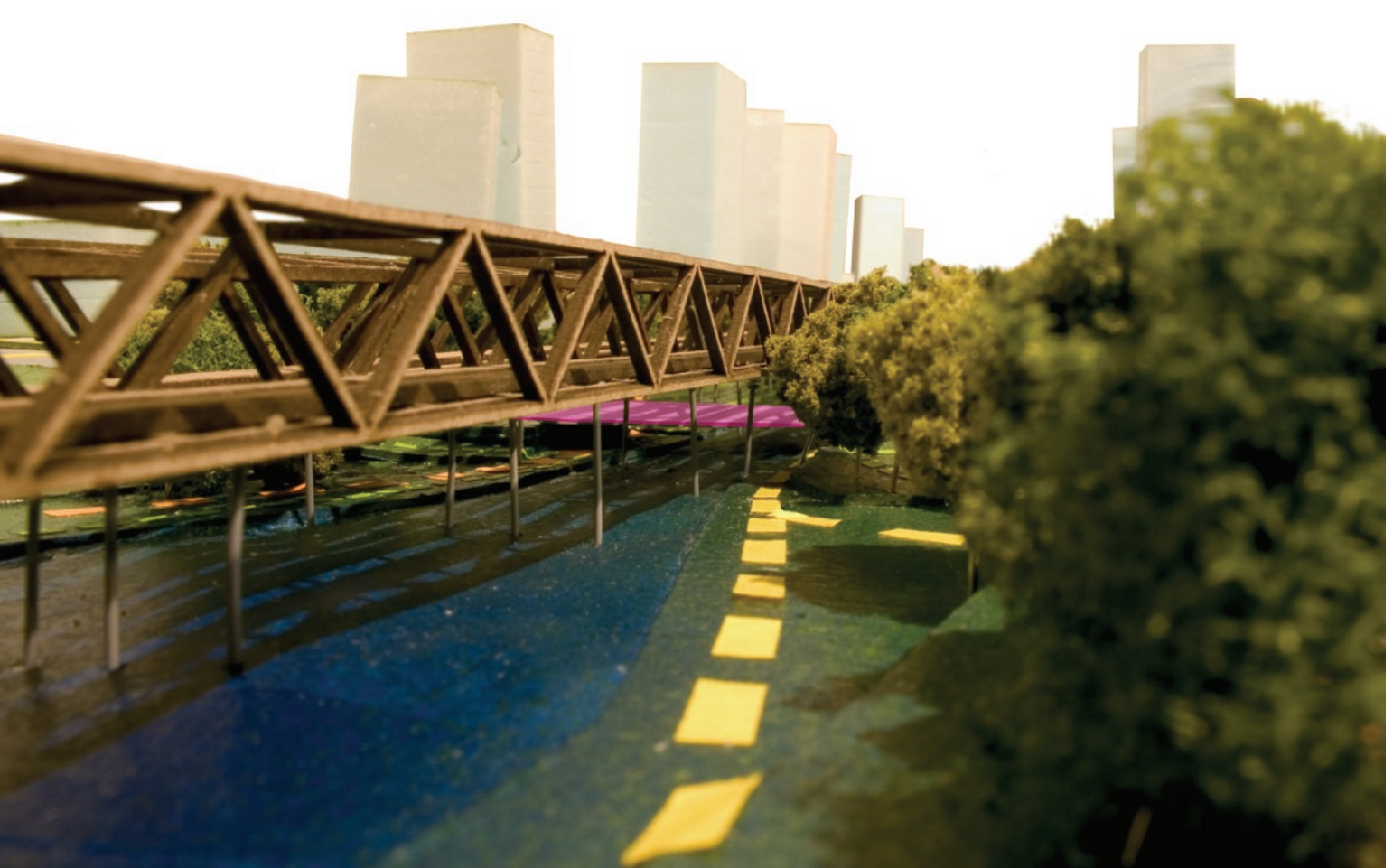
New Streets and Intersections

Currently, for the communities to the north and south of this site, access to the GO station and the Main Street is indirect and circuitous. The railway, and the large expanses of industrial or vacant land on either side of it, have created a major barrier between these adjacent neighbourhoods.

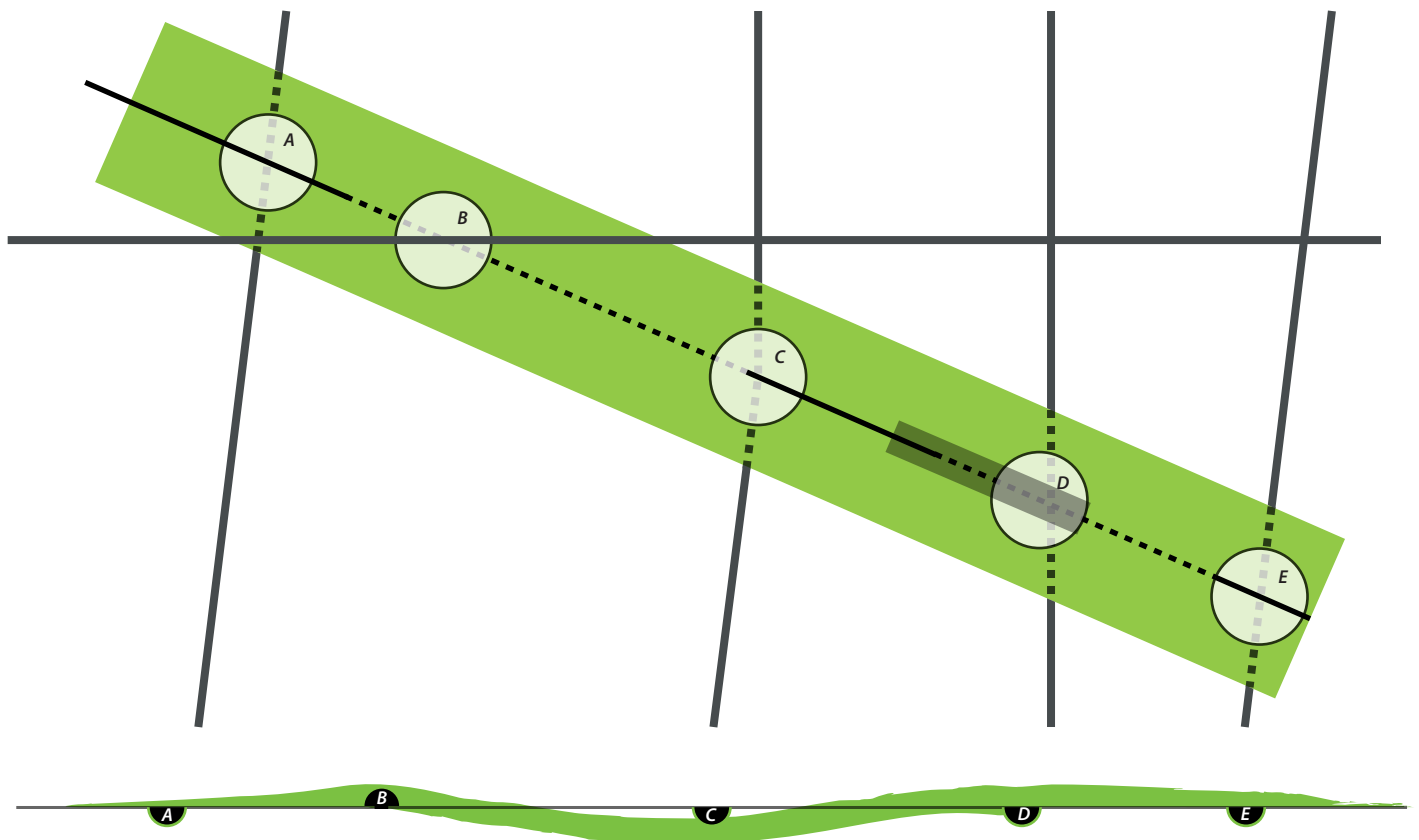
Through an analysis of the existing street network and the broader grid pattern across the region, new links are proposed to transform this barrier into a destination. Between Ontario Street and Thompson Road -the two north-south streets which flank the site area- two primary north-south streets are proposed, each with a new railway crossing. An upgraded crossing is proposed where the Greenway and Main Street armatures intersect. All proposed crossings are grade-separated, in order to facilitate fluid movement of pedestrians, local traffic, and high-order regional transit.

These new streets are located to link the town together and clarify the local transportation network. By making trips shorter and more direct, the strategy of unlocking these neighbourhoods has the potential to increase public transit ridership, and decrease automobile use and dependency within the Town.

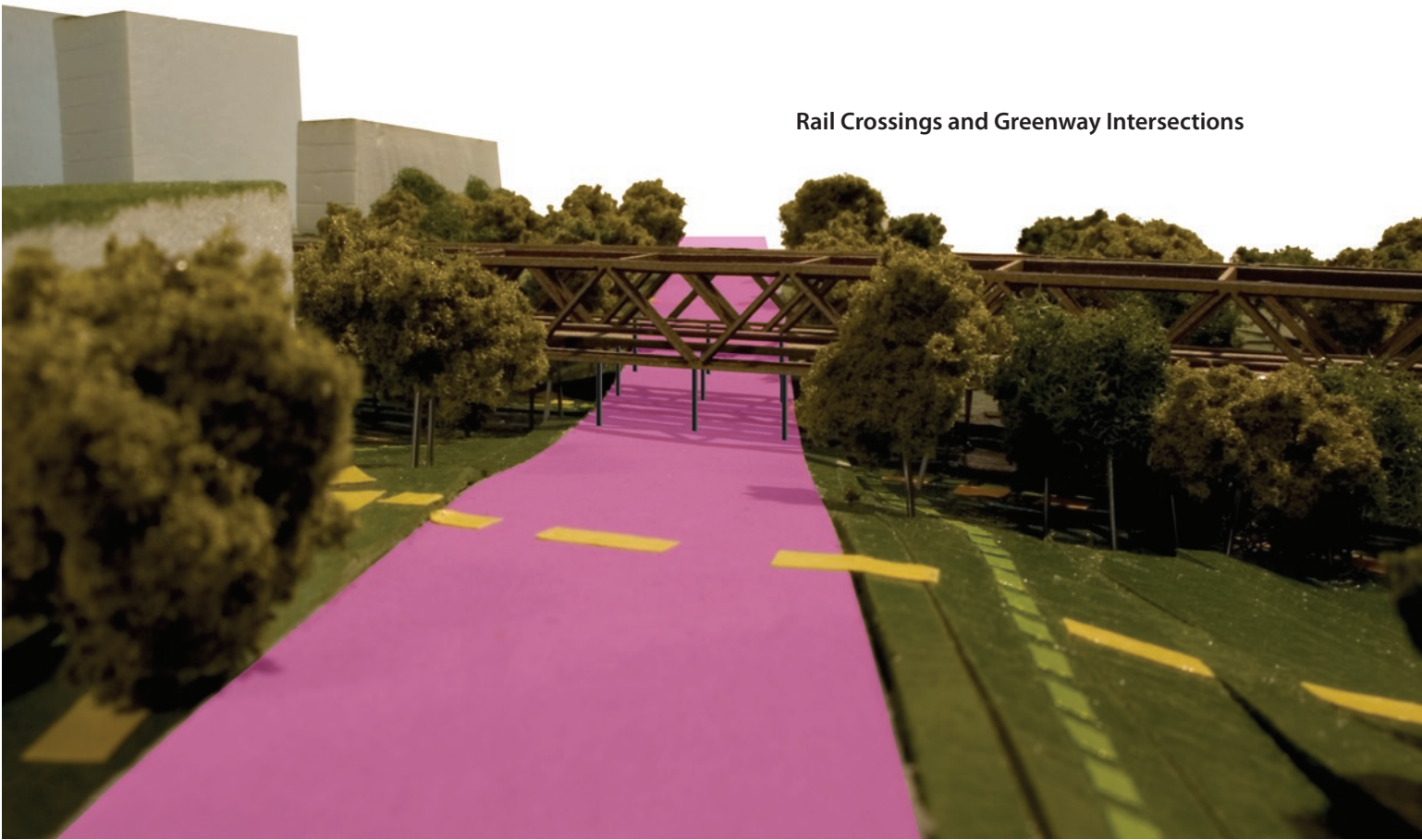
When these streets intersect with the railway corridor it presents an opportunity to significantly alter the form of the Greenway. As these connections are established, and sites begins to intensify, it will be important to address the role of these crossings in the broader scope of this linear armature. It is likely that the composition and frequency of crossing will be directly related to the level of density of the adjacent sites and is therefore important that the way in which these intersections are initially structured considers future intensification and subsequent alterations.



4.72 View of the Proposed Railway Crossing [C]



4.73 Intersections and Railway Crossings Location Plan and Section 1:10000



4.74 View of the Proposed Railway Crossing [C]

4.75 New Rail Crossings - Sections 1:500

Two new railway crossings and three improved crossings are proposed to facilitate increased north south movement across the site area.

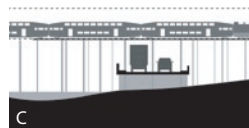
- A** This crossing currently exists, however the rail bridge should be widened and upgraded to accommodate public crossing along its sides.



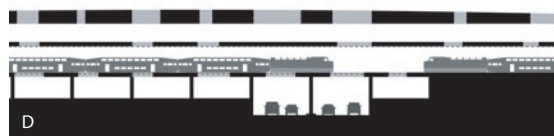
- B** There is currently a very wide grade crossing at Main Street which is dangerous and should be improved. It is proposed that Main Street reach up and over the tracks in order to establish a strong pedestrian intersection at the crossing of the Greenway.



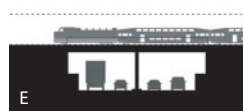
- C** This crossing is proposed to weave beneath the railway tracks and above the low point of the greenway.

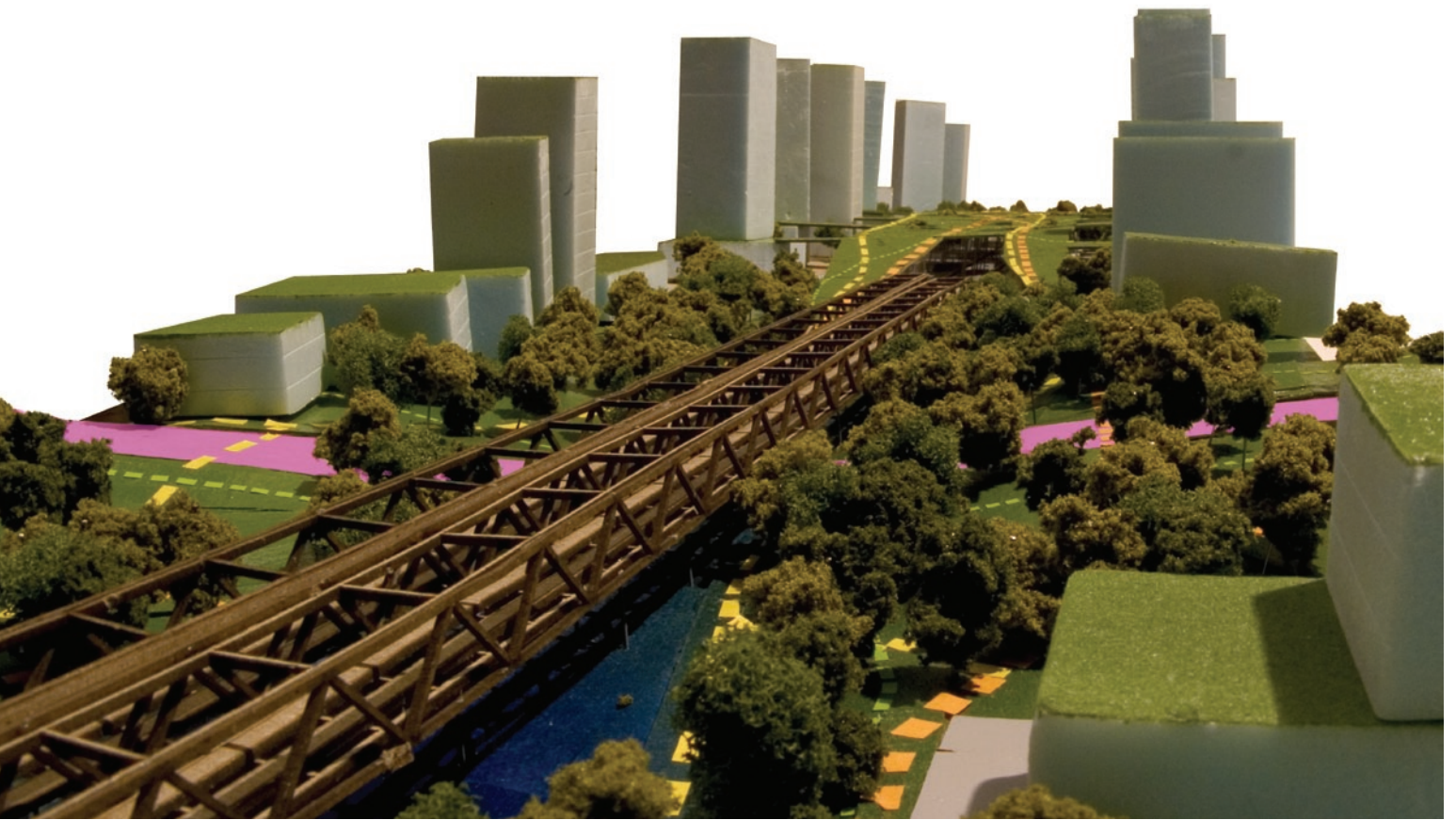


- D** Linking to the lower levels of an improved transit station, this new crossing will increase access to the station and adjacent blocks.

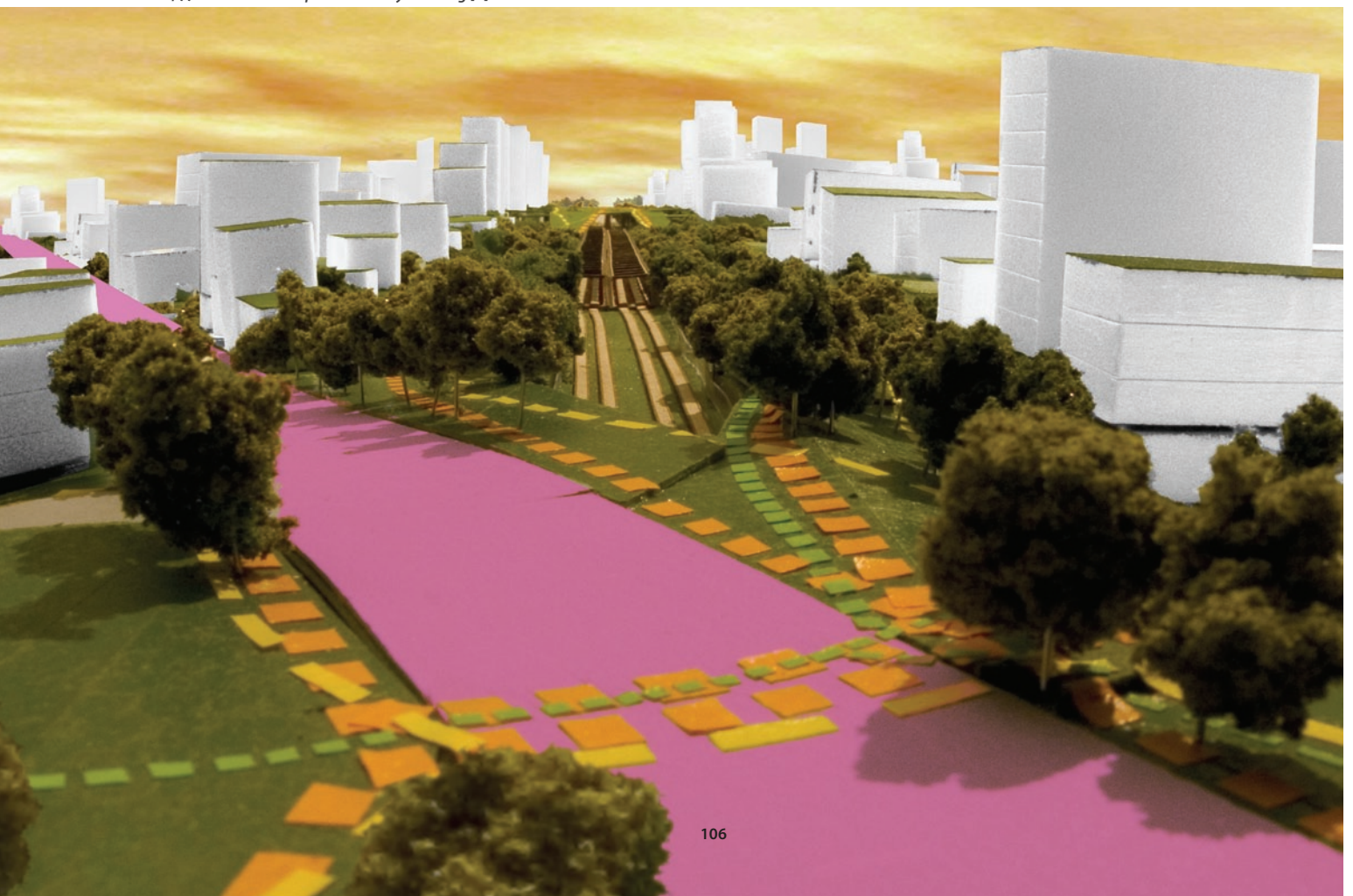


- E** This existing crossing should be improved with grade separation in a similar condition to crossing a

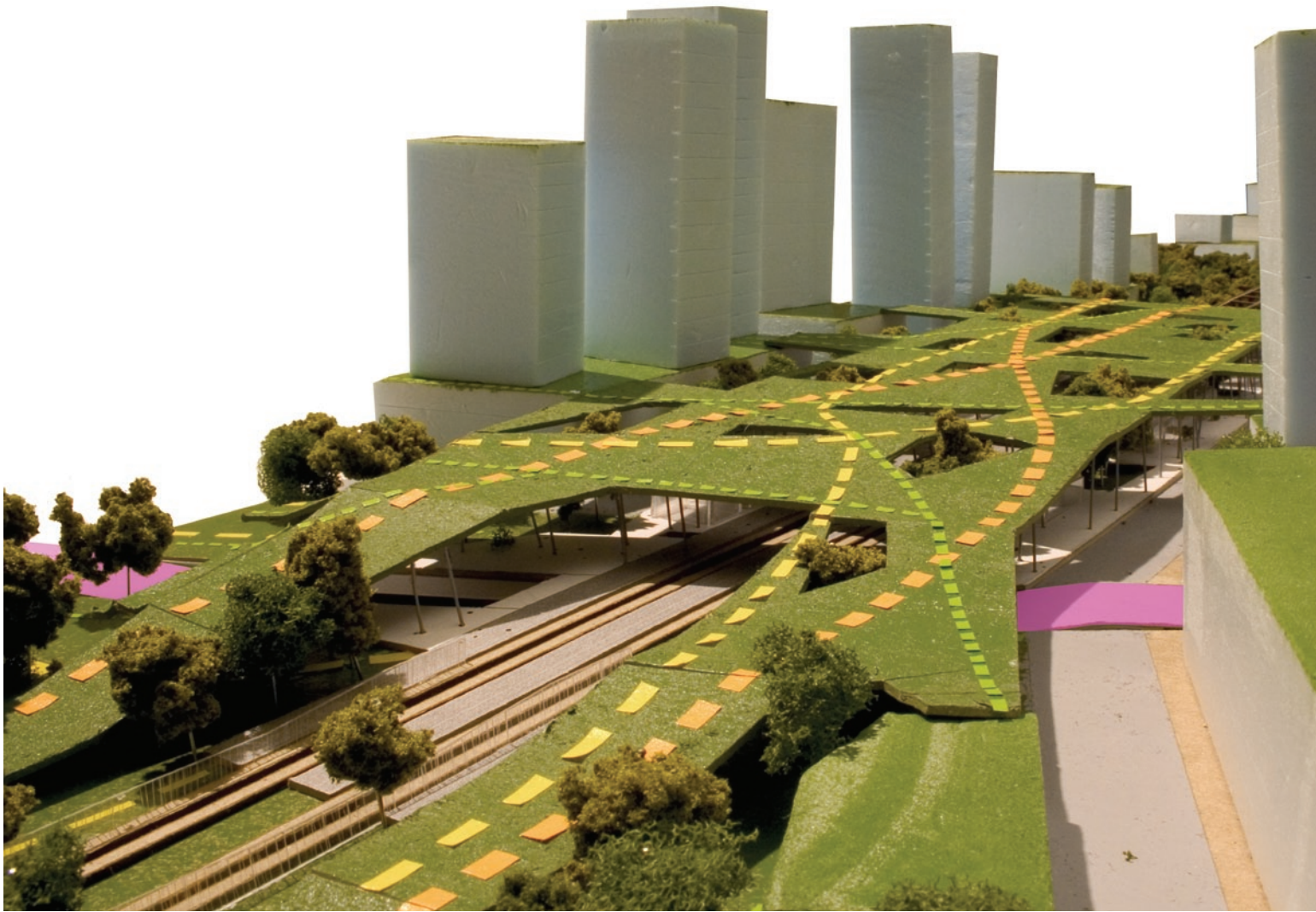




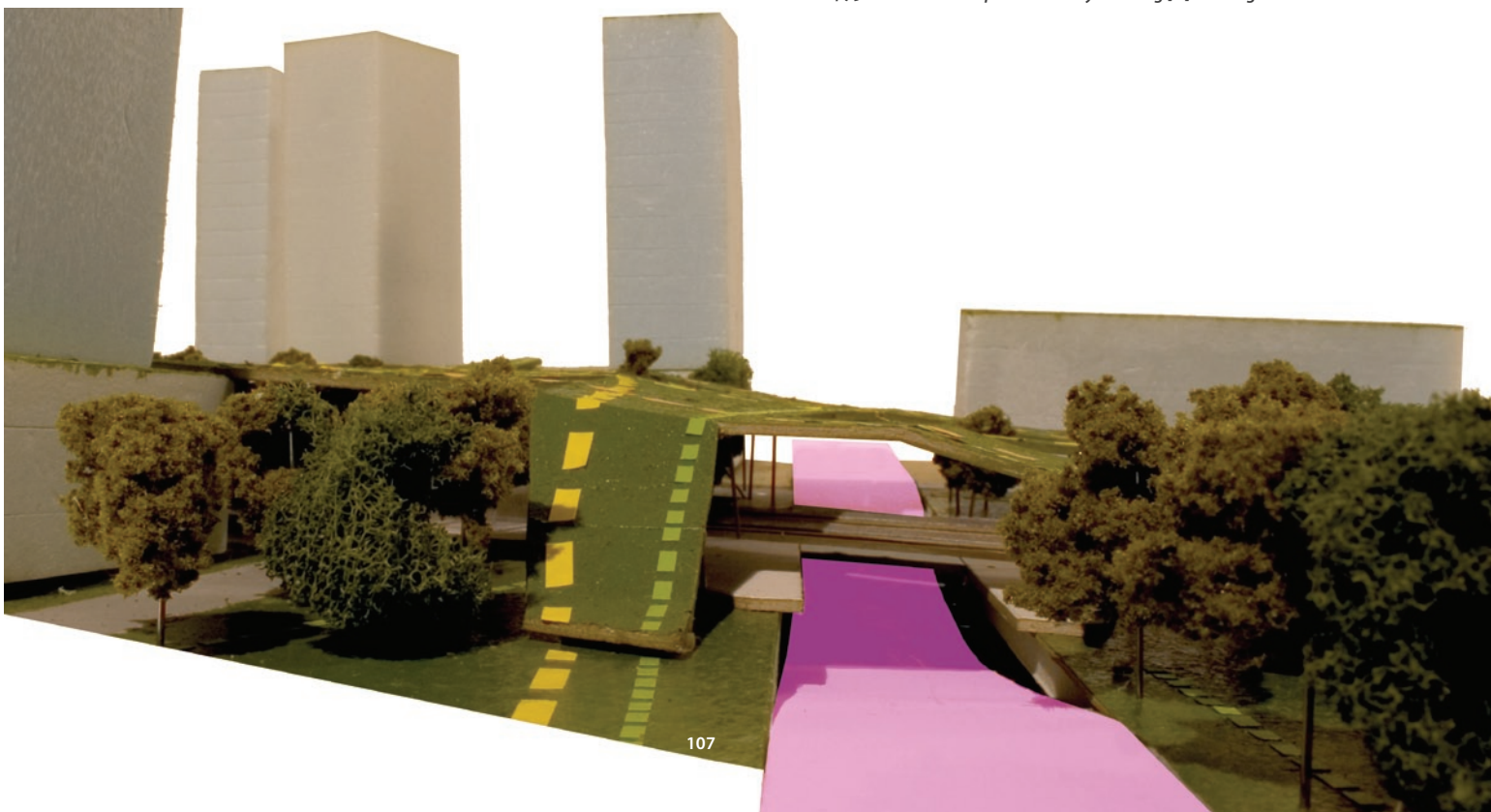
4.76 View of the Proposed Railway Crossing [C] Looking West



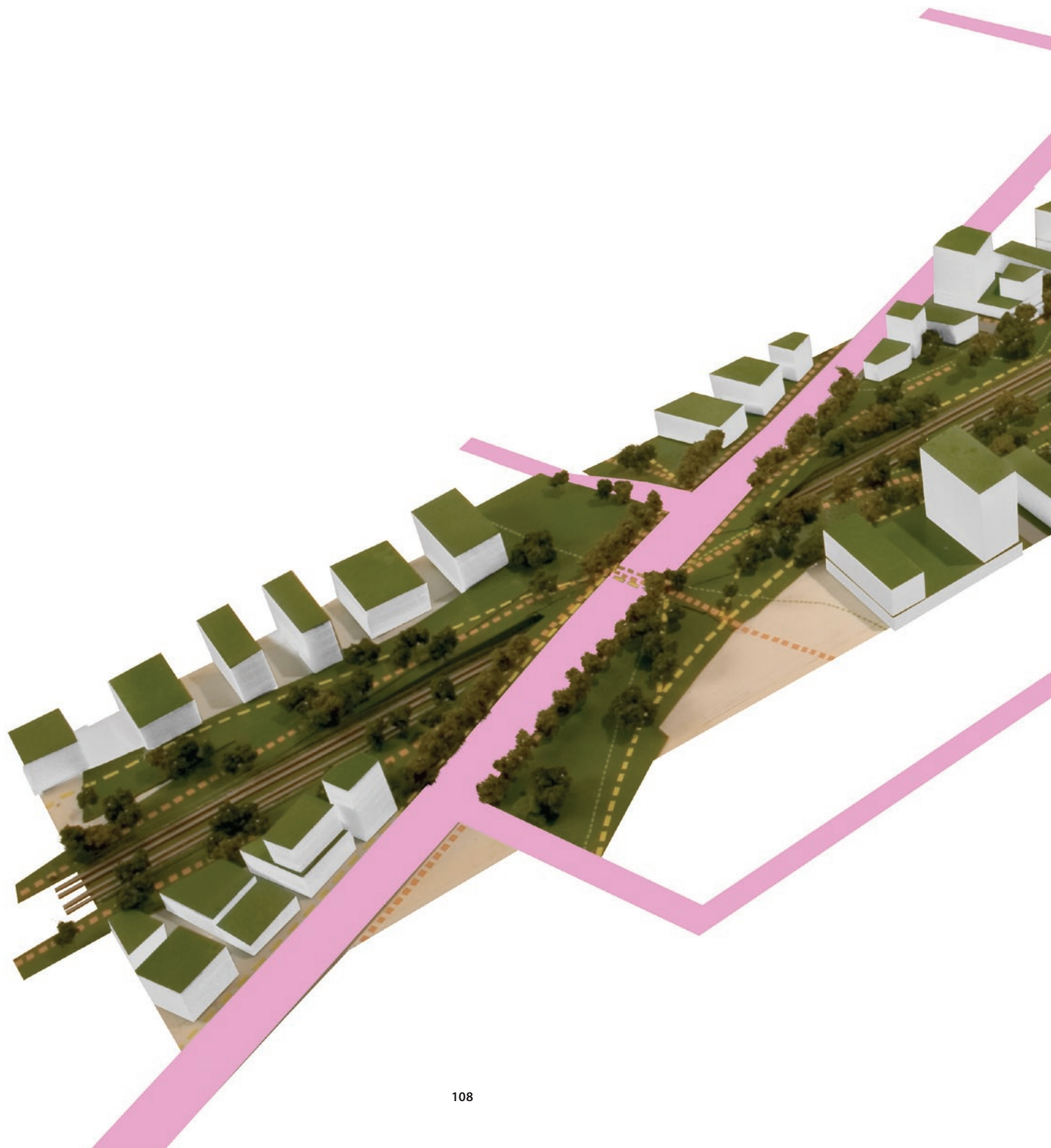
4.77 View of the Proposed Railway Crossing [B] at Main Street

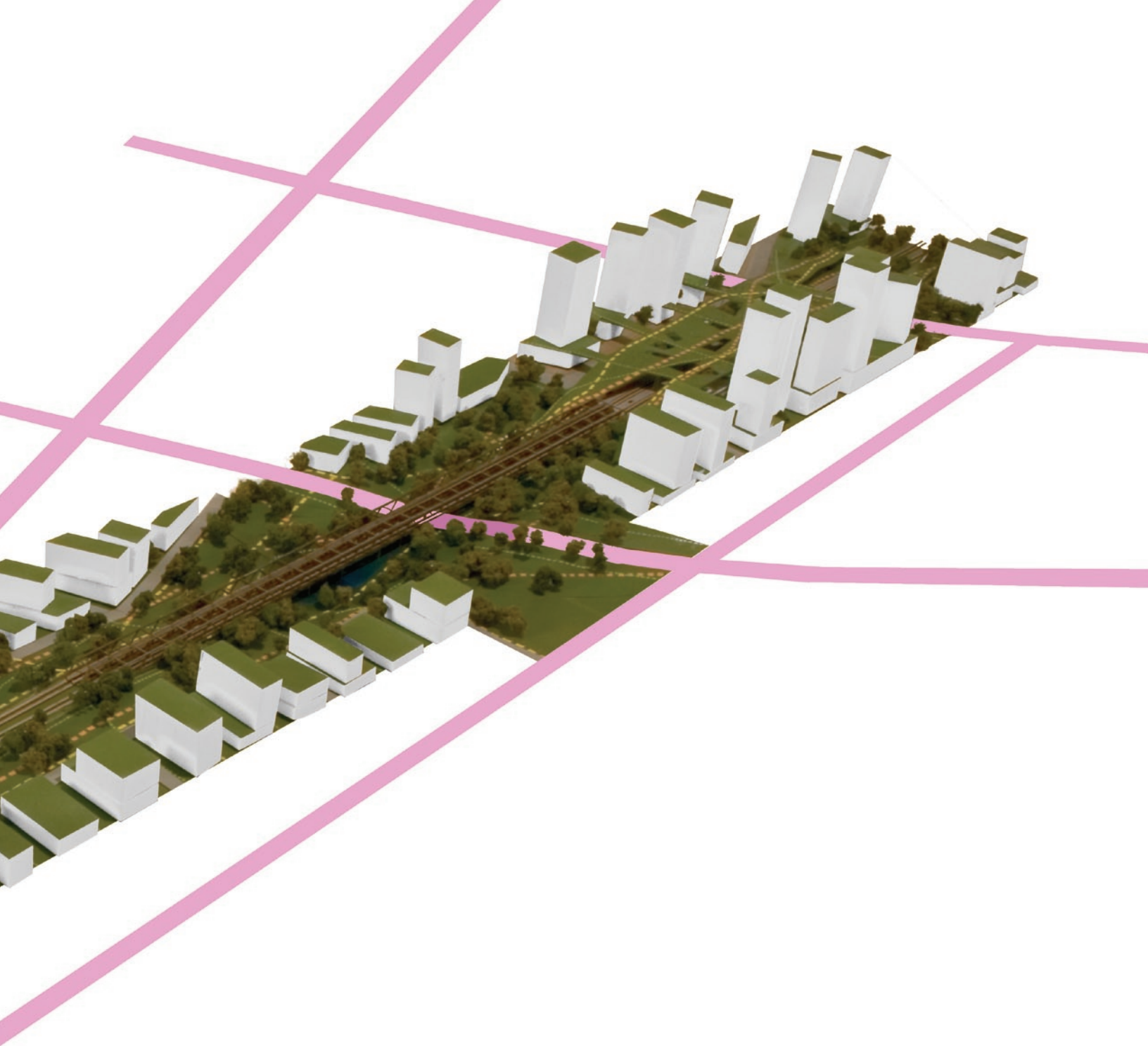


4.78 View of the Proposed Railway Crossing [D] Looking West

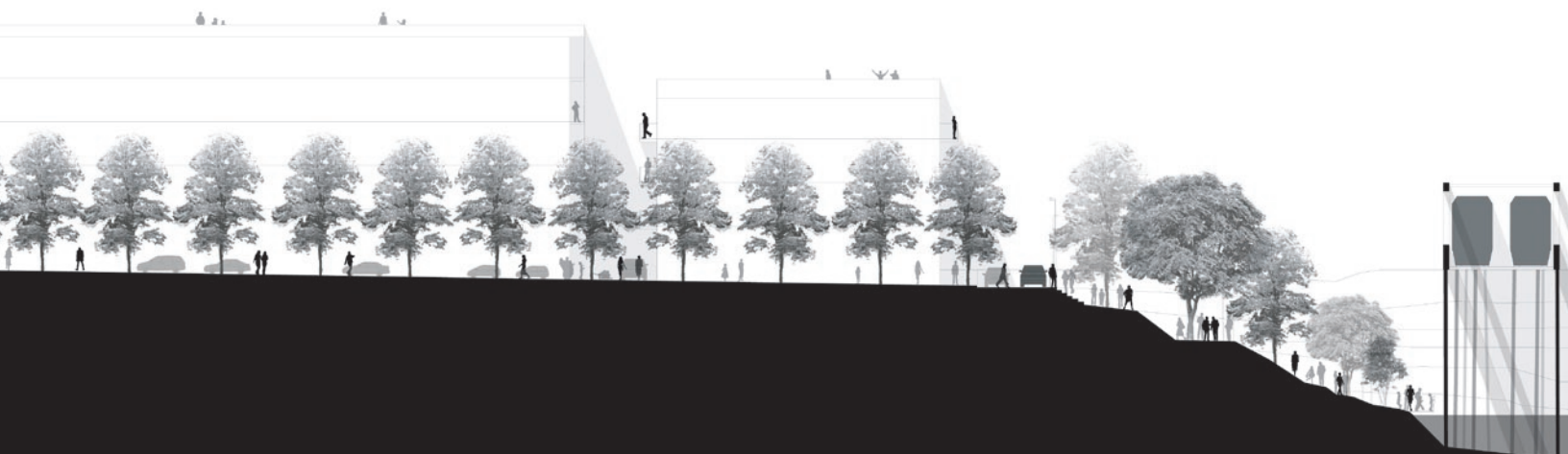


4.79 View of the Proposed Railway Crossing [D] Looking North



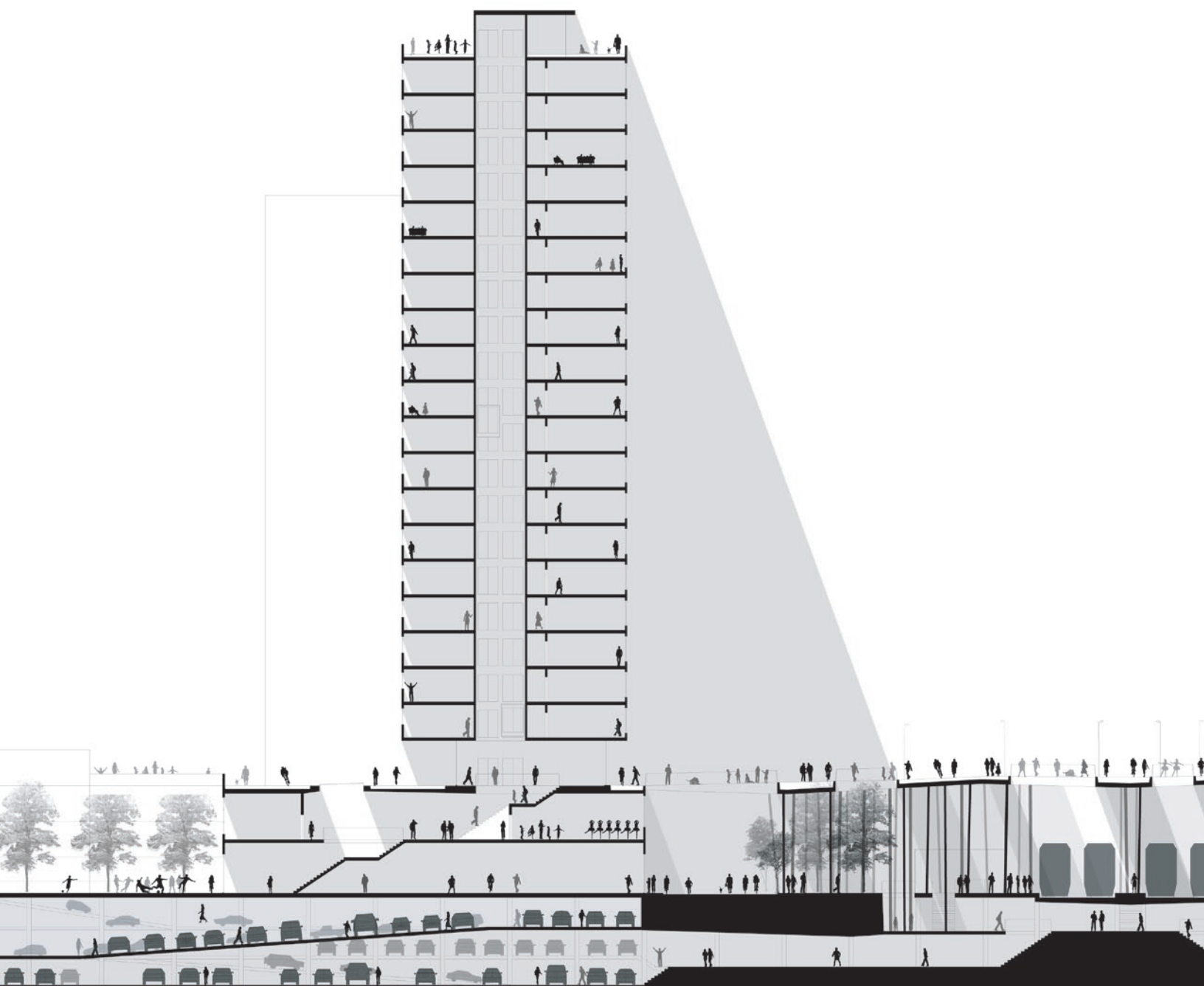


4.80 The Greenway Armature: Spatial Modeling





4.81 Greenway Section Through the Proposed Stormwater Park 1:500

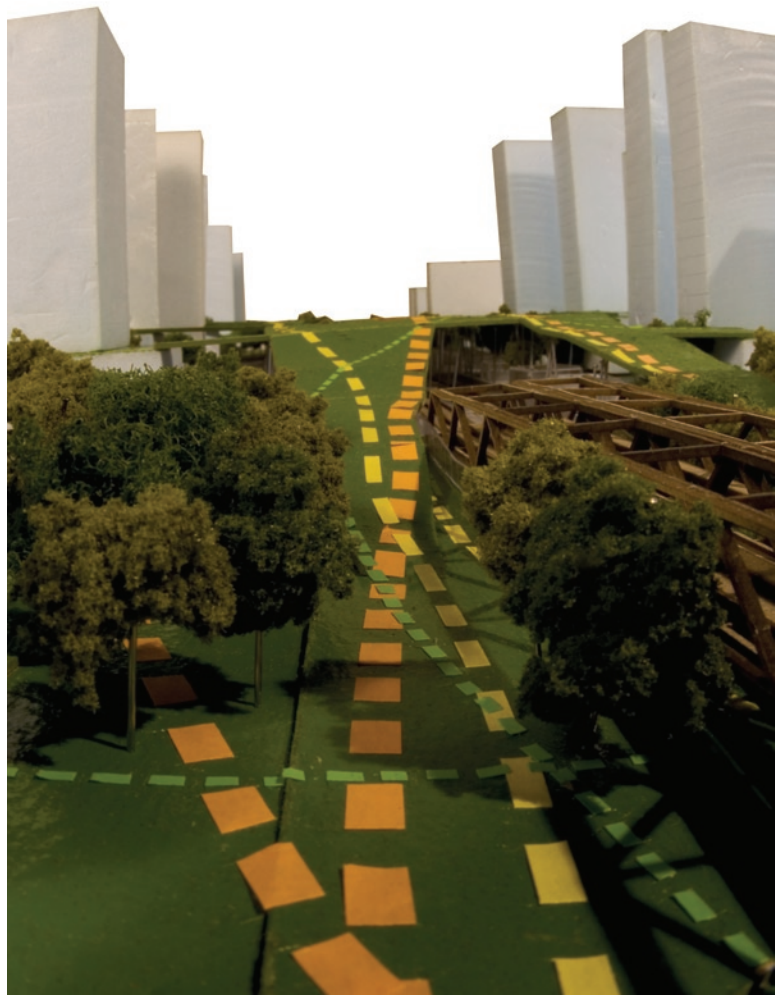




4.82 Section through the GO Train Commuter Station 1:500



4.83 View Looking West from the roof the Milton GO Train Station



4.84 View of the approach to the proposed GO Train Station



4.85 Aerial Perspective of the Design Composite



The Ideal Growth Centre

If it is understood that urban development is imminent for the Region of Halton, then the same assumption applies to intensification within the Town of Milton. In order to capitalize on the positive aspects this development can offer, available sites need to be structured to encourage responsible development that maximizes their potential.

Municipalities must be prepared with clear strategies for attracting and directing intensification, as it can both stimulate prosperity and build unique identities. However, implementing these projects within the existing urban fabric presents a complex problem, and it will be important to have a coordinated approach to best manage this opportunity.

For the Town of Milton, the GO station site has the potential to be an infill magnet for many years. If managed properly, this opportunity can transform the Town in several ways, injecting a vibrant pulse into its core. As it gradually evolves, this intervention has the potential to influence the next generation, and illustrate the vibrant sense of community that is possible in a city. This vision strives towards a new paradigm which accepts intensification and dense forms of urbanism, and finds a renewed appreciation for the natural environment.

The suburbs of tomorrow can become places where a wide variety of housing choices are available, and where employment, services and transit are within walking distance. Allowing natural elements and corridors to flourish in our cities will contribute to an extensive and healthy public realm network that will characterize the next generation of communities. Amenities and links through new communities will connect neighbourhoods to one another, and encourage alternative transportation options. Once the synergistic qualities of this type of development are realized, the relatively higher costs will be quickly absorbed by demand.

Daily experiences within nature can help to shape an individual's appreciation and understanding of the natural world. Shaping this perspective will directly impact their lifestyle and outlook on life. In a culture of increasing environmental concerns; awareness and comprehension of the basic processes of life will foster individual stewardship towards a sustainable civilization. Regular access to natural areas for recreational purposes and public events will encourage the sense of community and identity that will induce long term value for Milton.

While nurturing ecological networks in urban areas will likely increase their economic appeal, the true value of this ideal is that it cultivates a culture based on community connections and the natural processes which support life. In the suburban reconstruction of the next generation, we have the opportunity to revisit our complex relationship the natural environment, in the process of clarifying what it means to live in a city.

Conclusion

The Provincial Greenbelt initiative represents a major turning point for the Greater Toronto Area. In recent decades, the way in which the city has been growing has created a very challenging condition for the whole urban region. Without a major shift in the way the city is growing, these problems will continue, and will likely get worse as certain commodities become increasingly expensive. The Greenbelt and Places to Grow Plans are a much needed effort from senior government to try and redirect this momentum and change the growth dynamic of the region.

As the intensification policies become entrenched in the planning process, they will produce an increasing demand for infill development. While it is difficult to predict how market demand will respond to this increase, it implies that there is an emerging construction market that differs from the dominant processes existing today. The complexities of urban infill make it very different from traditional greenfield development, and changing the manner in which suburban areas are built presents a major challenge to the development industry. As intensification projects become a priority for municipalities, and developers embrace these new policies, the outcome has the potential to transform the way the GTA is growing.

For this shift to be significant at a regional scale, market demand will need to drive this transformation. The ownership patterns associated with the low density urban development that has dominated the GTA are unsustainable and are contributing to urban congestion, consuming agricultural land, and encroaching on critical natural features. The benefits associated with denser, pedestrian-oriented communities with easy access to amenities and a variety of housing and transportation options need to be presented as attractive alternatives to the options which are currently available.

For the success and longevity of the GTA, its relationship with nature can no longer be one in which nature is seen as privately-managed commodity. Natural systems support all things living in the city, and work more effectively when they are diverse, widespread and interconnected. Integrating natural corridors throughout our cities will assist in building an appreciation of the natural environment and its ecological significance. In addition to these values, the proximity to an ecological network will further substantiate the cultural role of the Greenbelt for the region as a whole.

Intensity of public life can strengthen the sense of community, and easy-access to rich natural areas can provide places of repose and tranquility. This combination of high-quality experiences in daily life, will attract attention and stimulate the existing economic base. As the cultural and economic benefits of these devices become realized, the value of this urbanism has the potential to shift the regional growth dynamic, and generate a new development model for the Greater Toronto Area.

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- 14 **1.12 Critical Infrastructure 1950-2000 1:1,250,000**
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- 16 **1.13 Armour Heights in 1929**
Photo by Gordon H. Jarrett photo/Northway Survey Corp. Ltd. [computer file] <http://transit.toronto.on.ca/bus/routes/images/avenueroad49.jp>. [Accessed March 1, 2006]
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- 18 **1.16 Average Travel Delay in the GTA 2031 1:2,000,000**
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For this diagram, a number of statistics were averaged from the following sources - each of which is fully sourced in the bibliography: **Residential:** Aregger, Hans, and Otto Glaus; Baird, George, D. Clinton, B. Kuwabara, and Toronto Planning Board; Callender, John Hancock, and Joseph De Chiara; Canada Mortgage and Housing Corporation; De Chiara, Joseph, and Michael J. Crosbie; Design Centre for Sustainability; District of Muskoka Planning and Economic Development Department; Fader, Steven, and Urban Land Institute; Gordon, David L. A.; Greater Vancouver Regional District Housing Task Group; Jensen, Rolf; Schittich, Christian; Urban Development Institute. **Employment:** Chris Cullinan, and Tichler & Associates, Inc.; City of Woodland; Columbia County, Georgia; Oregon Department of Land Conservation and Development; Rockdale City Council;
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Adapted from: Google Earth Satellite Imagery, 2006
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