

Report to Planning and Environment Committee

To: Chair and Members
Planning and Environment Committee
From: Scott Mathers MPA, P. Eng.,
Deputy City Manager, Planning and Economic Development
Subject: ReThink Zoning Update & Discussion Papers
Date: June 20, 2022

Recommendation

That, on the recommendation of the Director, Planning and Development, the following report **BE RECEIVED** for information.

Executive Summary

ReThink Zoning is the process of delivering a new comprehensive zoning by-law that will implement *The London Plan* and replace the current *Zoning By-law No. Z.-1*. The purpose of this report is to introduce the seven (7) discussion papers that have been prepared and to provide an update on work completed to date and the next steps in ReThink Zoning.

Linkage to the Corporate Strategic Plan

The preparation of the new comprehensive zoning by-law will contribute to the advancement of Municipal Council's 2019-2023 Strategic Plan in several ways:

- "Building a Sustainable City" is supported by the preparation of a new comprehensive zoning by-law that ensures growth and development in the City is well planned and sustainable over the long-term.
- "Strengthening Our Community" is supported by the preparation of a new comprehensive zoning by-law that ensures new development fits and enhances the surrounding context and considers innovative regulatory approaches to achieve municipal commitments to affordable housing and to reduce and mitigate climate change.
- "Growing Our Economy" is supported by the preparation of a new comprehensive zoning by-law that delivers certainty and flexibility in creating a supportive environment where businesses and development can thrive.
- "Leading in Public Service" is supported by opportunities for public and stakeholder engagement and participation in the preparation of the new comprehensive zoning by-law and in local government decision-making.

Climate Emergency

On April 23, 2019, Municipal Council declared a Climate Emergency. Through this declaration the Corporation of the City of London (the City) is committed to reducing and mitigating climate change by encouraging sustainable development and directing intensification and growth to appropriate locations. This includes the efficient use of existing urban lands and infrastructure, aligning land use planning with transportation planning to facilitate transit-supportive developments that encourage active transportation. Development shall also be directed away from natural hazards to minimize and mitigate flooding potential.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Planning and Environment Committee, RFP21-57 ReThink Zoning Consulting Services Contract Award, November 1, 2021. This report recommended Municipal Council appoint of Sajecki Planning Inc. (“Sajecki”) as project consultants to prepare the new comprehensive zoning by-law and that the financing for consulting services be approved. In accordance with the City’s *Procurement of Goods and Services Policy*, Sajecki was qualified to provide consulting services through a Request for Qualification (RFQUAL) and had the highest scoring submission through the subsequent Request for Proposal (RFP).

Planning and Environment Committee, ReThink Zoning Phase One Update and Background Papers, June 21, 2021. This report introduced for information purposes a series of Background Papers. The first Background Paper provided an overview of the relevance and role of zoning and the importance of engagement in the ReThink Zoning project. The second, third and fourth Background Papers addressed the role of use, intensity, and form in zoning respectively to achieve the city building objectives described in *The London Plan*. The fifth Background Paper undertook a review of zoning by-laws for several populous municipalities in Ontario to identify best practices and capture innovative approaches to zoning. This report also provided an update on the next steps for ReThink Zoning.

Planning and Environment Committee, ReThink Zoning Phase One Update, November 30, 2020. This report introduced for information purposes, areas of focus for future public and stakeholder engagement. Areas of focus including education about how zoning works, and conversations about the types of uses and buildings that should be permitted (use), how much activity or building should be permitted (intensity), and where and how buildings should be situated or designed (form). The above noted areas of focus were discussed in the context *The London Plan’s* policy direction and place types, and how *The London Plan’s* vision can be implemented through zoning. The report was initially scheduled for June 2020 and was postponed and adapted to address limitations with public and stakeholder engagement as influenced by COVID-19.

Planning and Environment Committee, ReThink Zoning Terms of Reference, May 13, 2019. Based on public and stakeholder comments on the draft Terms of Reference (TOR), this report introduced for approval an updated TOR for ReThink Zoning. The updated TOR included a detailed overview of the project goals, work plan and deliverables, and identified opportunities for meaningful public and industry stakeholder engagement.

Planning and Environment Committee, ReThink Zoning Terms of Reference, August 13, 2018. This report introduced for information purposes a draft TOR for ReThink Zoning and directed that the draft be circulated for comments.

2.0 Discussion Papers

Seven (7) discussion papers have been prepared for ReThink Zoning and are included in Appendix A to this report. The discussion papers explore opportunities and challenges that London’s new zoning by-law should seek to address. Possible zoning approaches that will be considered for the new zoning by-law are identified.

2.1 Discussion Paper #1 – Preface: An Introduction to ReThink Zoning

This paper provides an overview of the function and role of a zoning by-law. A municipality's official plan establishes the policies for the use and development of land, and a zoning by-law is one of the key tools a municipality has to implement those policies. The City of London's new official plan, called *The London Plan*, plans for the types of places that are envisioned for the city, such as Downtown, Shopping Area, Neighborhoods, and Farmlands, to name a few. What *The London Plan* calls "Place Types". The policy goals and objectives for place types in *The London Plan* will guide decisions about zoning. Following the approval of *The London Plan*, Municipal Council decided that a new zoning by-law would be prepared to implement the new official plan.

This paper highlights that zoning is an important tool that allows municipalities to set rules for development on individual properties, to direct what types of buildings and activities are permitted (use), how much building or activity is permitted (intensity), and where and how those building should be situated or designed (form).

2.2 Discussion Paper #2 – Zoning in on Intensification

This paper explores the relationship between zoning and intensification. Intensification is identified in this paper as the measure of two main elements – intensity and form. Intensity is described as how large a building is, or the scale of activity taking place on a property; and form is described as the way a building is shaped or "sculpted", and how it is located and oriented on property.

The London Plan calls for a city structure that directs intensification "inward and upward" to manage growth and support compact, transit supportive development. To achieve the envisioned city structure, zoning regulations can be used to effectively control and direct intensity and can be used to encourage the desired form that intensity takes. This paper explores the following guiding questions:

- *"What level of intensity should be permitted by the zoning by-law?"*
- *What zoning regulations would be most effective in achieving the "right" level of intensity within each Place Type?*
- *To what degree should form consideration be a part of the zoning by-law?*
- *To what degree should form considerations be based on the surrounding context?*
- *To what degree should form consideration be a site plan control matter?*
- *What zoning regulations would be most effective in achieving the "right" form of development within each Place Type?*
- *How can an appropriate form be ensured when increases in intensity are permitted?"*

This paper recommends that the conventional zoning tools referenced in *The London Plan* for each place type be included as regulations for each place type's corresponding zone in the new zoning by-law. These conventional tools are height, gross floor area, floor plate area, floor area ratio, density and coverage to name a few. This paper further acknowledges that form-based zoning, a non-conventional zoning tool, can be used effectively alongside conventional tools. Form-based zoning tools considered for inclusion in the new zoning by-law by this paper are build-to lines; setbacks; angular planes, solid to void ratios, vehicle access and parking locations; and garage setbacks/garage widths, to name a few. This paper concludes that these zoning approaches require consideration on a place-by-place basis.

2.3 Discussion Paper #3 – Zoning in on Existing Uses

This paper introduces the expected shift away from conventional zoning to better complement *The London Plan*. In conventional zoning by-laws, how land is to be used is the primary consideration and organizing structure. *The London Plan* presents a more balanced and complete view of development, considering intensity and form as equally important to use. Building on the ReThink Zoning work completed in 2021 that explored different approaches to zoning, this paper recommends that a hybrid approach guide the development of the new zoning by-law and combine aspects of conventional zoning and aspects of form-based zoning that shifts the focus of zoning from land use to form-based outcomes. The benefit being a new zoning by-law that is context-specific and balances use, intensity, and form.

In addition, this paper assesses the functionality and efficacy of existing land uses and definitions in the current *Zoning By-law No. Z.-1*. The recommendations proposed in this paper are based on the following guiding principles:

- *“Establish a shorter, broader, and less prescriptive list of permitted uses.*
- *Determine what definitions are needed and ensuring they are consistent, clear, concise, and written in plain language.*
- *Provide clarity about the role of land use regulations, performance standards, and definitions, without overlap on how each tool functions.*
- *Shift thinking about the role of land use regulations in London’s new zoning by-law.”*

This paper provides preliminary list of simplified land uses terms to guide the development the new zoning by-law. The preliminary list is intended to be informative, rather than an exhaustive list of simplified land uses for a new zoning by-law.

2.4 Discussion Paper #4 – Zoning in on Housing Affordability

This paper focuses on the relationship between zoning and affordable housing. As zoning determines where housing can be built, how much housing can be built, and what form housing can take, zoning can be used to diversify and increase the City’s supply of housing so that it is more affordable.

This paper acknowledges that Development Charges and Inclusionary Zoning are specific tools available to municipalities to require the provision of affordable units or funds to build them, but those tools are not the focus of this report. Those tools are subject to other ongoing studies by the City. This paper instead focuses on how zoning can impact housing affordability more generally by regulating where housing can be built, how much housing can be built, and what form housing can take.

This paper explores the possibility of reducing minimum lot sizes; increasing density permissions; providing a spectrum of housing types; flexible regulations for mixed-use areas and buildings, adaptable buildings, and for additional residential units; and reducing the cost of development associated with out-dated parking requirements to guide the development the new zoning by-law to do more to respond to the housing crisis.

2.5 Discussion Paper #5 – Zoning in on the Climate Emergency

This paper considers the relationship between zoning and climate change and focuses on how the new zoning by-law can help the city achieve a more resilient future. This paper explores the following guiding questions:

- *“What are some of the climate related challenges London is facing?*
- *How does The London Plan address climate change? and*

- *How can zoning reduced the impacts of climate change?”*

Using an organizing tool called a transect, to divide place types comprising the city into subgroups in an orderly progression from the most rural to the most urban, this paper proposes specific climate-focused zoning interventions by subgroups. For example the Suburban Transect is proposed to include some Neighbourhoods and Shopping Area Place Types and the climate-focused zoning interventions are:

- *“Allow for smaller scale wind and solar energy systems integrated within the building*
- *Create policies for open public space to support urban community gardens and require public amenity/ open space as part of development*
- *Encourage a variety of housing types and forms in neighbourhoods that increase gentle density and infill.*
- *Permit stormwater management infrastructure such as rain gardens, bioswales, and green roofs, where appropriate.*
- *Reduce or eliminate parking standards in appropriate areas.*
- *Provide opportunities for ground-sourced thermal energy use.*
- *Consider requirements for on-site transportation infrastructure, including electric vehicles, bicycles, and other alternatives. Create policies for open public space to support urban community gardens and require public amenity/ open space as part of development.”*

The draft transect is shown in Figure 1 below and an example of the climate-focused recommendations for the Suburban Transect is shown in Figure 2.

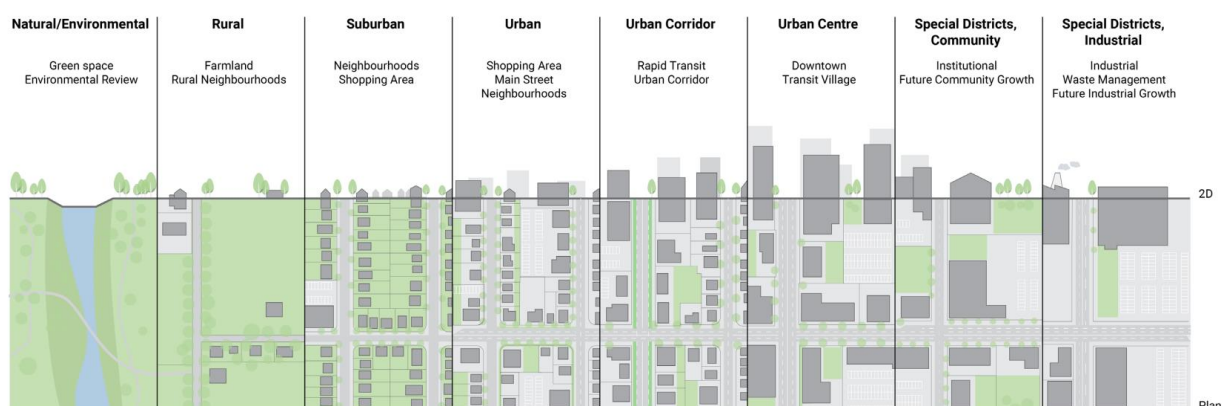


Figure 1: Transect Application to London's Place Types (Draft). Source: Discussion Paper #2 – Zoning in on Intensification.

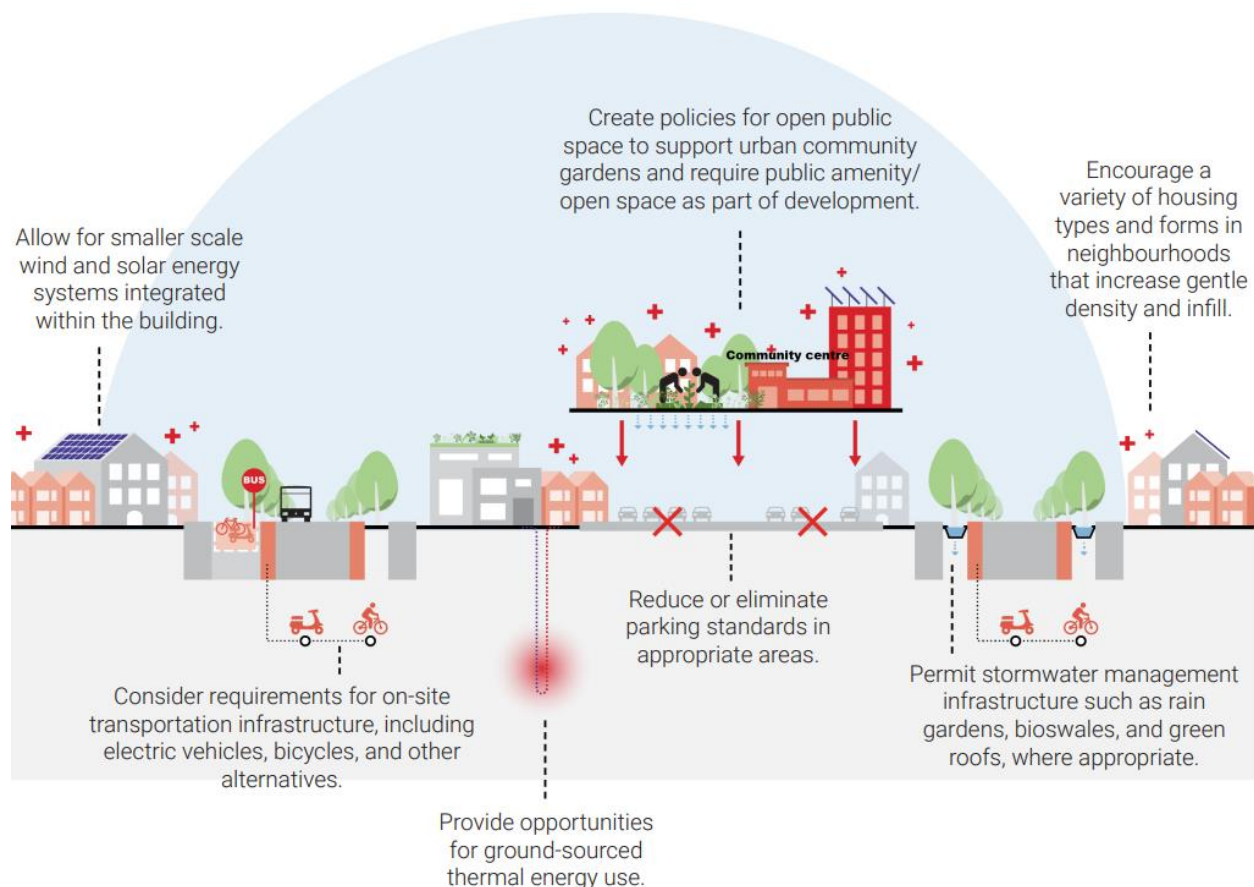


Figure 2: Climate-focused Recommendations for the Suburban Transect. Source: Discussion Paper #2 – Zoning in on Intensification.

2.6 Discussion Paper #6 – Zoning in on Place Types

This discussion paper builds on *The London Plan*, which introduced place types as a way of organizing and describing the nature of the different geographic locations that together make up the city. For example, Downtown, Main Streets, Shopping Areas, Neighbourhoods, Green Spaces, Farmlands etc. For each of the 15 place types, this paper describes the policies in *The London Plan* and identifies zoning considerations that could be applied to achieve the policy goals and objectives for each place type. For example, *The London Plan* policy directs that the Downtown Place Type will be the economic hub for the region (LP 795), and an exceptional neighbourhood that provides a range of housing, services, and amenities for a wide spectrum of lifestyles (LP 796) and a well-developed and maintained public realm (LP 799_8, 11) as the city’s highest-order mixed-use centre (LP 798). The corresponding zoning consideration is to support a large residential and employment populations and may translate into zoning regulations that permit taller buildings and require a minimum density for residential and non-residential buildings.

This paper also sets out a preliminary approach to the zone classes that will implement each place type, and the coded naming conventions for the zone classes that are a short combination of letters. For example, the Downtown zone class would be identified (“coded”) in the zoning by-law as Downtown (D).

2.7 Discussion Paper #7 – Implementing the new Zoning By-law

This discussion paper explores how the new zoning by-law can be implemented to improve administration, how content is presented, and how easy it is to read and understand the document so that it is accessible to more people. This paper explores the following guiding questions:

- “How can the structure, format, key maps, and schedules of Z.-1 be updated to improve the administration, presentation, and clarity of London’s new zoning by-law?”

- *How may technology be leveraged to improve the experience of finding and accessing information contained within the new zoning by-law?*
- *What can we learn from other municipal zoning by-laws within Ontario and Canada?"*

This paper is organized into two parts, exploring first structure and format, followed by mapping. For each part, a best practice review of zoning by-laws from small- to mid-size cities identifies successes (and weaknesses) to inform recommendations pertaining to the presentation of a new zoning by-law. This paper recommends a new way of structuring and formatting the new zoning by-law including:

- *"Definitions should be universal across municipal documents to ensure clarity and avoid repetition.*
- *Site-specific zoning regulations should list only those regulations that differ from the base zoning, thereby avoiding potentially unnecessary text.*
- *The zoning by-law should be structured and numbered in a way that allows for easy future amendments to maintain the document's structure and coherence.*
- *The inclusion of illustrations and sidebars within a zoning by-law are a relatively new approach to improve the readability and clarity of documents for use by the general public. Although these additions are not regulations in themselves, they can help illustrate the intent of regulations as visual aids or examples."*

The recommendations for mapping are numerous and predominately relate to the design of the map covering such topics as symbology, map elements (scale, units, orientation, colour scheme) and for online mapping interactive tools. With respect to how mapping conveys information, it is recommended that heat mapping to communicate the magnitude of a phenomenon (eg. height or density) through variations in colour hue and intensity is well suited to showcasing numerical information with a set range. For key maps and schedules, it is recommended that zone classes and regulations be represented on separate maps to ensure legibility. For example, permitted form, intensity, and uses assigned to the various zone areas may be provided on three or more separate maps or map layers.

Feedback on the discussion papers can be provided through the *ReThink Zoning Key Priorities Survey* that will be available on the ReThink Zoning GetInvolved webpage along with the discussion papers. Separate, future public and industry working group meetings will provide additional opportunity for feedback. The feedback received on the discussion paper will inform future stages of work.

3.0 Project Status

3.1. Work Completed to Date

3.1.1 Statement of Work

ReThink Zoning is a multi-year, multi-phased project for the delivery of a new comprehensive zoning by-law. Following appointment as the project consultant in November 2021, Sajecki began work on a Statement of Work. The Statement of Work provides an outline of the path forward from project initiation to completion in approximately two years (Q4 2023). The Statement of Work divides ReThink Zoning into five (5) key stages, identifies, and describes key deliverables and associated timelines and the roles and responsibilities of the consulting team and City staff. The Statement of Work and the Public Engagement Plan discussed in the next subsection of this report comprise Stage 1- Project Initiation. The key stages and associated timelines are shown in Figure 3 below:

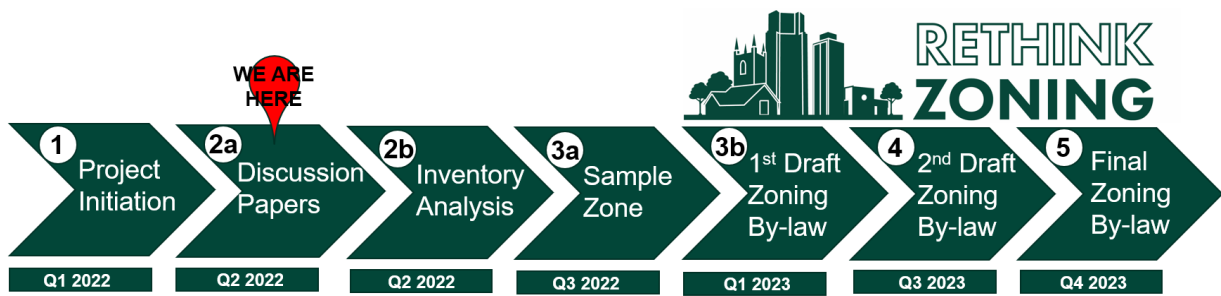


Figure 3: ReThink Zoning Key Stages

3.1.2 Public Engagement Plan

Concurrently with the Statement of Work, Sajecki (and subconsultants LURA Consulting) began working on a Public Engagement Plan for ReThink Zoning. The Public Engagement Plan considers the complete project and includes ongoing support for all five stages. The Public Engagement Plan exceeds the minimum Planning Act requirements for public participation to maintain the high expectations for public engagement set by ReThink London that was the engagement program for *The London Plan* and a benchmark for public engagement. Of particular importance for ReThink Zoning is improving representation and participation by equity-deserving groups that have traditionally been underrepresented in planning and decision-making.

The desired outcomes for the Public Engagement Program are the following:

- That Londoners be aware of ReThink Zoning;
- The stakeholder be provided with relevant and meaningful opportunities to shape the new zoning by-law;
- That public engagement foster a greater public understanding of zoning and lay the groundwork for continued participation in civic discourse related to land use and development; and
- That Londoners contribute to city-building through ReThink Zoning and that the new zoning by-law implements the long-term vision (in *The London Plan*) for growth and development.

At the beginning of each stage of ReThink Zoning, the consulting team will work with Planning and Development Staff to shape the messaging for the stage. In this way the Public Engagement Plan is a living document and Planning and Development and Corporate Communications staff continue to work with the project consultants to refine the Public Engagement Plan.

Engagement on ReThink Zoning with neighbouring indigenous communities will be parallel engagement process with its own specific objectives, engagement principles, audiences, opportunities for collaboration, and communication protocols. The preparation of the Indigenous Engagement Strategy is in progress.

3.1.3 Background Research and Discussion Papers

In January 2022, the project consultant initiated an extensive background review and analysis of City documents. Documents reviewed included the 2019-2023 Strategic Plan, *The London Plan*, including all Secondary Plans and city design guideline documents identified in the Plan, The City of London Zoning By-law No. Z.-1, Housing Stability for All Plan, Climate Emergency Action Plan, and Parking Standards Background Study to name a few. The project consultant also participated in a virtual and in-person tour of recent or notable developments to understand the opportunities and challenges and development patterns being experienced in London. The background research provided a foundation to begin preparing the discussion papers identified and summarized in Section 2.0 of this report. Seven (7) discussion papers

have been prepared and completed by the project consultant between January 2022 and May 2022. The background research and discussion papers comprise Stage 2a – Discussion Papers of ReThink Zoning.

3.1.4 Community Pop-ups

As a first step to put the Public Engagement Plan into action, Planning and Development Staff initiated community pop-ups starting in June 2022. The community pop-ups are to be held in locations where the public gathers in their daily lives and at special events held in the community. The goals and objectives of the community pop-ups are:

- To introduce and raise awareness about ReThink Zoning in less formal settings, and in an active and engaging format that will generate excitement about Rethink Zoning;
- Encourage pop-up participants to visit the project webpage to find more project information and register for project updates; and
- Gather initial feedback on participants' familiarity with zoning and what about zoning interests them.

Planning and Development Staff also gave a brief presentation to the London Area Planning Consultants and the Development Charges External Stakeholder Committee in April 2022 about ReThink Zoning, project timelines and the discussion papers. Planning and Development Staff asked for feedback on what type or form of consultation and how much consultation the industry stakeholders would like to receive on the discussion papers to assist in the preparation of future industry working group meetings.

3.2. Next Steps

Ongoing work on the Public Engagement Program and Indigenous Engagement Strategy will continue, and into the summer months Planning and Development Staff will continue to hold community pop-ups as a first step to gather initial feedback on participants' familiarity with zoning and what about zoning interests them.

As part of the next two stages of ReThink Zoning, between June 2022 and September 2022 the project consultant will prepare an inventory and analysis of development patterns (Stage 2b) and sample zones (Stage 3a).

The inventory and analysis of development patterns will be prepared that identifies where existing patterns do not conform to London Plan policies, and where there have been applications recently approved that affected zoning and any trends in those applications. This quantitative and qualitative review will include both tabular information and visual materials such as heat maps.

Sample zone(s) will be created that most closely follow the policy priorities for the place types established in *The London Plan*. These zones may be assessed against both current zoning and existing development patterns to identify possible conflicts that could impact the implementation of the new zoning by-law. Separate industry stakeholder and public stakeholder engagement will be developed around the sample zones and would be anticipated to occur August 2022/September 2022.

Stage 3b, Stage 4 and Stage 5 will follow that are the preparation of the 1st draft, 2nd draft and final zoning by-law respectively. A public meeting before the Planning and Environment Committee would be held for each draft and the final zoning by-law (including the statutory public participation meeting for the final zoning by-law) for Municipal Council to receive comments.

Conclusion

The discussion papers are informed by the background research that has been completed to date and form an important basis for the ReThink Zoning conversation. The discussion papers explore possible zoning approaches for topics such as housing affordability and climate change that zoning can indirectly impact. The discussion papers also explore possible zoning approaches for use and intensification (intensity and form) in general and summarize the policy priorities in *The London Plan* and translates those policy priorities into zoning considerations for each place type.

The discussion papers are important step to the ReThink Zoning process showing the transition between policy and regulations. Feedback received on the discussion paper will inform future stages of work.

Prepared by: **Melissa Campbell, MCIP, RPP**
Senior Planner, Long Range Planning & Research

Reviewed by: **Justin Adema, MCIP, RPP**
Manager, Long Range Planning & Research

Recommended by: **Gregg Barrett, AICP**
Director, Planning & Development

Submitted by: **Scott Mathers, MPA, P. Eng.**
**Deputy City Manager, Planning & Economic
Development**



The London Plan (2016) presents a clear vision for the future of the city's growth and development. Now it's time to make the vision a reality: it's time to ReThink Zoning.

Introduction: Why ReThink Zoning?

London Council approved a new official plan, called [The London Plan](#), in 2016. The City involved thousands of Londoners in the process of creating the plan's vision and objectives, and the policies that will make the city more sustainable – financially, environmentally, and socially – over the course of 20 years.

The City of London decided that a new zoning by-law would be prepared to implement *The London Plan* and inform day-to-day planning decisions on what type of development can take place, where it can be located, and how it can be used. The new zoning by-law will replace Zoning By-Law Z.-1 (1993), which enabled the City to implement the policies in its prior 1989 Official Plan. In 2019, the City launched a comprehensive review of Zoning By-law Z.-1 and published a series of ReThink Zoning Background Papers (2021) that identified the scope of the task ahead, relevant legislation and policy requirements, and best practices.

Now it [the City] is embarking on the next chapter of ReThink Zoning, building on the background work completed to date, to prepare the new zoning by-law that will implement the policies in *The London Plan*.

A New Approach: “Inward and Upward”

The London Plan's policies direct growth and development inward and upward. It introduces a new way of designating land – one that is based on the physical form of a place (e.g., Downtown, Shopping Area, Neighbourhoods, Farmland). By replacing traditional land use designations with a “place types” approach, *The London Plan* presents a more complete view of how the city is changing – one that recognizes the influence of a building's intensity and form, as well as its use, to manage growth and development. The new zoning by-law will provide the legal basis for achieving the plan's vision for the future that is streamlined, defensible, accessible, and easy to use.

An [official plan](#) provides direction on how a city should grow and develop and is used to meet the needs of the existing and future community.

The zoning by-law is a legal document that must meet all legislative requirements under Ontario's *Planning Act*, 1990. It is a municipal tool to regulate land use and achieve the City's objectives, as presented in *The London Plan*, by enacting and implementing its policies. It is instrumental in directing the incremental changes that will together achieve London's long-range vision for the future.

To learn more about how London plans on addressing new challenges in the future, visit the [“Our Challenge”](#) section in *The London Plan*.

What can zoning do? It creates rules for three main characteristics:

Intensity	Form	Use
<p>means how much of a building (or activity) is permitted</p> <p><i>e.g., height, gross floor area, number of bedrooms, coverage, parking +</i></p>	<p>means where and how a building can be situated or designed</p> <p><i>e.g., Site layout (e.g., parking, landscaping +);</i></p> <p><i>Building (e.g., massing, step-backs +)</i></p>	<p>means the types of buildings or activities that are permitted</p> <p><i>e.g., Residential, office, commercial, industrial +</i></p>

Discussion Papers

The City has prepared a series of seven (7) discussion papers to inform the development of London’s new zoning by-law. The papers explore key topics and issues identified in *The London Plan* policy. The papers present preliminary data, analysis, and findings that will inform and shape the new zoning by-law alongside input from London residents and other partners.

The discussion papers address the following ReThink Zoning topics:

- **Part 1: Introduction**
 - Discussion Paper #1. Preface: An Introduction to ReThink Zoning
- **Part 2: Priority Topics**
 - Discussion Paper #2. Zoning in on Intensification
 - Discussion Paper #3. Zoning in on Existing Uses
 - Discussion Paper #4: Zoning in on Housing Affordability
 - Discussion Paper #5: Zoning in on the Climate Emergency
- **Part 3: New Ways of Making Zoning Happen**
 - Discussion Paper #6. Zoning in on Place Types
 - Discussion Paper #7. Implementing the New Zoning By-law

Achieving an Exciting, Exceptional, and Connected City

Looking ahead to 2035, *The London Plan* highlights that for London to thrive as a prosperous, connected, and culturally rich city, the city needs to “represent a mosaic of outstanding places”. ReThink Zoning offers an opportunity to make the vision a reality – incrementally, intentionally, and sustainably.

ReThink Zoning offers you the opportunity to participate in the process for developing the new zoning by-law. Please visit [Get Involved](#) to stay informed on updates and to find out how to participate in the process.

Overview of Schedule

1	2	3	4	5
Project Relaunch and Discussion Papers	Zoning By-Law Outline and Sample Zones	First Draft Zoning By-Law	Second Draft Zoning By-Law	Final Draft Zoning By-Law
Summer 2022	Summer / Fall 2022	Summer 2022 - Winter 2023	2023	2023

WE ARE HERE



RETHINK ZONING

DISCUSSION PAPERS

2 ZONING IN ON INTENSIFICATION

JUNE 2022

Sajecki →
Planning

**R.E. MILLWARD +
ASSOCIATES LTD**
planning and development services

FUSL
FRESHMAN URBAN SOLUTIONS LTD.

POSAD MAXWAN
strategy x design

Scribe
TECHNICAL PARTNERS & EXPERTS



London
CANADA

Land Acknowledgment

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.





Executive Summary

This paper explores how the City of London can manage intensification in a way that enables it to achieve the goals of its official plan, *The London Plan* (the Plan). In planning terms, intensification deals both with the intensity of new development (i.e., its size and scale, measured in height and density) relative to existing development, as well as its form (i.e., its shape, massing, location, and orientation on a site).

The London Plan acknowledges that growth and development need to be carefully managed to ensure the city remains a great place to live, work, and play. To that end, the Plan directs intensification “inward and upward” to support a compact, transit supportive form of development that is concentrated within the city’s built up area. To ensure the right forms of intensification occur in the right places, all lands have been assigned a “Place Type”, each with unique policies to regulate permitted uses and the intensity and form of development to ensure that new, more intense development fits with the surrounding context.

To support the implementation of the Plan’s Place Type policies, the City of London is updating its zoning by-law through the ReThink Zoning project. London’s new zoning by-law will move away from a more traditional approach to zoning (based on controlling and separating land uses) and adapt a more proactive approach focused on place-making, built form, and how London looks and feels. This discussion paper explores how the City can manage intensification in a way that enables it to achieve the goals of its official plan, while ensuring the intensity and form of new development is context appropriate, and potential negative impacts are minimized.

Zoning by-laws that focus on intensity and built form (rather than use) are often referred to as “form-based by-laws”. An organizing tool or structure that they often use is known as a “Transect”, which categorizes development in a municipality into a few Transect Zones. These are arranged from most rural, through to suburban, to most urban, with special district categories that capture unique uses (e.g. industrial).

This discussion paper begins with a thorough investigation of the positive outcomes and aspirations associated with growth and intensification in London. It carefully considers how new development is managed to foster a well-designed built form that will be compatible with its surrounding context and supportive of a pedestrian environment, with high-quality public spaces that are safe, accessible, attractive, and vibrant. It also considers how all types of active mobility are to be supported, how neighbourhoods are to be universally accessible, and how buildings are to be designed to have a “sense of place” and distinct character that is consistent with *The London Plan*’s vision for each Place Type.

Critical to the successful implementation of the Plan's Place Type policies is minimizing the potential negative impacts of new development, particularly where larger, more intense buildings are introduced into, or adjacent to, areas of lower intensity. In these areas, various impacts must be considered and mitigated (e.g., shadowing; loss of privacy, trees, and canopy cover; visual impact; traffic and parking; and noise). This discussion paper examines a number of form-based zoning tools and solutions to ensure that new development reinforces the existing and/or planned character of the Place Types while also mitigating the potential negative impacts of growth and intensification. These tools and solutions will be re-examined, refined, and calibrated for each of London's 15 Place Types. Determining which tool is most appropriate for each Place Type to achieve the specific outcomes articulated in the Plan requires additional study and fine-tuning (see *Discussion Paper #6: Zoning in on Place Types*).

To successfully achieve the aspirations of *The London Plan* and goals of the new zoning by-law, regulations that effectively control and direct intensity will need to be provided. There are several key questions pertaining to intensity that must be considered, including:

- What level of intensity, in terms of height and density, should be permitted as-of-right by the zoning by-law?
- What zoning regulations would be most effective in achieving the "right" level of intensity within each Place Type and in mitigating any potential negative impacts of growth and intensification?

Zoning tools may be used to control several aspects of a building's form, including the way its shaped and sculpted and how it is located and oriented on a site. To achieve the goals of the Plan, the new zoning by-law will need to provide regulations that effectively control the form of new development. Key considerations pertaining to form include:

- To what degree should form considerations be a part of zoning considerations?
- To what degree should form considerations be based on the surrounding context?
- How much should "built form" be a site plan control matter?
- What zoning regulations are effective in ensuring the right form of development is achieved within each Place Type?
- How can an appropriate form be ensured when increases in intensity, specifically height or density, are permitted?

Zoning tools may be used to address intensity and form-related considerations including density, floor area ratio (FAR), gross floor area (GFA), lot coverage, building height, number of bedrooms, parking controls, site plan approval, holding provisions, and design guidelines. This discussion paper explores these zoning tools in addition to those that direct site design and layout, including but not limited to setbacks and build-to lines, building location and orientation, lot coverage, landscaping, open space and buffering requirements, and vehicular access and parking restrictions. It also examines how zoning tools may address how buildings relate to their surrounding context, including: height, density, FAR, stepbacks, angular planes, tower floorplate sizes and shapes, roof pitch designs, and parking garage controls.

Non-zoning tools are also explored in this discussion paper, including but not limited to: site plan control, design guidelines, urban design peer review panels, urban design awards, design competitions, charrettes, and streetscape engineering standards.

As the City of London continues to grow over the next several decades, ensuring that new development fits appropriately into the existing and planned context will require a careful balancing of intensity and form. To achieve the right balance among these elements in London's new zoning by-law, the next step for the Consultant Team will be to gather feedback from the public on the discussion papers and further study each Place Type to test how the various proposed zoning tools, outlined in this discussion paper, can best be used and calibrated to help create the places that are envisioned in *The London Plan*. The Transect approach will help to organize the testing and calibration of the zoning tools and support the fine-tuning of each tool to meet the specific needs of each Place Type.



TABLE OF CONTENTS

1.0 INTRODUCTION	14
1.1 Purpose	15
1.2 Use, Intensity, and Form	16
1.3 Why Intensity Matters	17
1.4 Why Form Matters	17
1.5 Methodology	18
2.0 ASPIRATIONS AND ISSUES	20
2.1 Overview	21
2.2 Aspirations: Encouraging Positive Outcomes	22
2.3 Issues: Minimizing Negative Impacts	28
2.4 Form-Based Codes and the Transect	29
PART I – ZONING AND INTENSITY	32
3.0 POTENTIAL ZONING FOR INTENSITY SOLUTIONS	32
3.1 Key Questions	33
3.2 Conventional Zoning Tools	34
3.3 Other Tools	36
3.4 Approaches	36
3.5 Recommended Tools	41
3.6 Tools and Place Types	42
PART II – ZONING AND FORM	44
4.0 POTENTIAL FORM-BASED ZONING SOLUTIONS	44
4.1 Key Questions	45
4.2 Zoning for Form (Building and Site Layout)	46
4.3 Zoning Tools and Site Layout	46
4.4 Zoning Tools and Building Form	49

PART III – THE NEW ZONING BY-LAW	58
5.0 THE NEW ZONING BY-LAW	58
5.1 Form-Based Zoning	59
5.2 Zoning Tools and Place Types	61
5.3 Building Types and Place Types	61
6.0 NEXT STEPS	63
APPENDICES	65
Appendix A. Current State: Existing Conditions, Issues, and Strategies	66
Appendix B. Methodology and the Role of Zoning in Intensification	74
Appendix C. <i>The London Plan</i> and Zoning	84
Appendix D. Zoning and Non-Zoning Tools	99
Appendix E. Other Considerations for the New Zoning By-law	105

LIST OF FIGURES

Figure 1. Measures That May be Used to Implement Place Type Policies	16
Figure 2. Comparison of Zoning Approaches	29
Figure 3. A Version of the Original Transect Diagram with Six Successional Zones .	30
Figure 4. Setback Diagram 1	47
Figure 5. Setback Diagram 2	48
Figure 6. Angular Plane Diagram 1	51
Figure 7. Angular Plane Diagram 2	51
Figure 8. Angular Plane Diagram 3	52
Figure 9. Floor Plate Size and Shape Diagram	53
Figure 10. Parking Garage Diagram	54
Figure 11. Relationship to the Street Diagram	55
Figure 12. Private-Public Transition Diagram	56
Figure 13. The Transect Concept Applied to <i>The London Plan's</i> Place Types	60

LIST OF TABLES

Table 1. Conventional Zoning Tools	34
Table C1. Permitted Height and Density within each Urban Place Type	85
Table C2. Permitted Intensity for the Neighbourhood Place Type	93

This discussion paper frequently refers to specific paragraphs of *The London Plan* as “(LP ###)” to indicate to readers where precise information can be found.

ZONING IN ON INTENSIFICATION





1.0 INTRODUCTION

1.1 Purpose

The London Plan (2016) (the Plan) places a great deal of emphasis on intensification; growing “inward and upward” to achieve a compact form of development that fits within and reinforces the character of the surrounding context. The Plan promotes intensification in appropriate locations in a way that is sensitive to existing neighbourhoods. To ensure the right forms of intensification occur in the right places, all lands within London have been assigned a Place Type. Each Place Type has unique policies to regulate permitted uses and the intensity and form of development. This is a very different approach than what was used in the prior official plan and Zoning By-law Z.-1 (see [Appendix A1. Existing Conditions](#)). To implement *The London Plan* and its Place Types policies, London City Council decided to prepare a new zoning by-law.

As zoning by-laws outline the provisions and regulations that apply for all types of development on individual properties, they are the primary tool that municipalities have to implement the policies of an official plan and to direct growth. London’s new zoning by-law is moving away from a traditional approach to zoning (based on controlling and separating land uses) and adopting a more proactive approach focused on placemaking, built form, and how London looks and feels. Zoning by-laws that focus on built form and intensity (rather than use) are often referred to as “form-based by-laws”.

The purpose of this paper is to examine the relationship between zoning and intensification. Intensification is a measure of two main elements:

- **Intensity:** or how large a building is, and its scale of activity (often measured in height – storeys or metres) and density (units per hectare, people and jobs per hectare, floor area ratio (FAR), or gross floor area (GFA)), and
- **Form:** or the way a building is shaped and “sculpted”, and how it is located and oriented on a site.

The objectives of this discussion paper are to define what intensity is in planning and urban design, identify different tools and approaches for managing intensity, and explore how intensity may be applied to each Place Type in a new comprehensive zoning by-law for London. In regard to form, this paper examines how new development may be located and oriented, its overall massing and three-dimensional shape, and how it may relate to neighbouring properties and the public realm. Further, this paper identifies zoning tools that may be used to ensure London intensifies in accordance with the policies of *The London Plan* while achieving a form that is context-appropriate.

This paper is organized into three main sections following this Introduction and an examination of Aspirations and Issues: Part I – Zoning and Intensity, Part II – Zoning and Form, and Part III – The New Zoning By-law.

1.2 Use, Intensity, and Form

While this paper focuses on intensification (i.e., intensity and form) it is important to keep in mind that *The London Plan* includes three broad categories of measures that may be used to implement the Place Type policies: use, intensity, and form.

As illustrated in Figure 1, an examination of intensity includes a number of elements such as height, density, and coverage. An examination of form includes both site layout (i.e., elements such as building location on a site, setbacks, orientation, and landscaping) and building form (i.e., how a building can be sculpted through the use of stepbacks, angular planes, fenestration, and limits on blank walls).

Use	Intensity	Form	
<ul style="list-style-type: none"> • Residential • Office • Commercial • Industrial • Institutional 	<ul style="list-style-type: none"> • Height • Gross floor area • Coverage • Floor plate area • Density in units/ha • Number of bedrooms • Parking • Floor Area Ratio 	Site Layout: <ul style="list-style-type: none"> • Parking • Landscaping • Vehicular access • Orientation • Setbacks • Building location on site 	Building: <ul style="list-style-type: none"> • Massing • Step-backs • Materials • Architecture

Figure 1. Measures that may be used to implement Place Type policies (Source: *The London Plan*, 2016)

1.3 Why Intensity Matters

Per *The London Plan*, intensification means the development of a property, site, or area at a higher density than currently exists. When higher intensity buildings are located adjacent to areas of lower intensity there can be negative impacts such as overlook, shadowing, noise, and parking. As the City of London grows and intensifies it is crucial to ensure that new, more intense development fits within its context and that its potential negative impacts are minimized.

1.3.1 Activity Intensity and Building Intensity

It is important to recognize that in planning there are two different types of intensity: activity intensity and building intensity. Each has a unique impact on the urban realm.

Activity intensity is related to the concentration of activities taking place at a site. The intensity of activities may vary across a geographic area and/or period of time. For example, in a mixed-use neighbourhood with a residential area, a mall, and an office building, increased levels of activity are likely to be observed in the morning and late afternoon near the office as workers arrive and depart from work. Similarly, increased activity levels may be observed at the mall in the late afternoon and evening as residents visit this destination after school or work. The residential area of the neighbourhood is likely to experience comparatively lower levels of activity intensity throughout the day. The impacts of increased activity intensity include, but are not limited to, higher than normal levels of traffic, congestion, and noise in the area.

Building intensity relates to factors such as the size and scale of a building. Shadowing and incompatibility with the existing neighbourhood's character are examples of the potential impacts of building intensity.

1.4 Why Form Matters

The earliest zoning by-laws were enacted primarily as a means of separating incompatible uses, such as making sure noxious uses like factories and heavy industries were not located next to residences. Over time, zoning by-laws introduced more use categories and became very good at ensuring that almost all uses were separated from one another. Consequently, mixed-use neighbourhoods all but disappeared as they were zoned out of existence in many municipalities. As this approach to zoning was applied while communities continued to grow, it became evident that cities were increasingly difficult to navigate (except by car) and lacking character and a "sense of place". As a result, although this approach to zoning demonstrated that it is a powerful tool for prohibiting negative outcomes, such as incompatible uses, it did not contribute to contemporary expectations of a desirable built form.

Over the last several decades, communities have been placing a greater emphasis on their neighbourhood's character and built form. As a result, zoning tools have been re-examined and re-purposed to place a greater emphasis on achieving positive built-form outcomes. New zoning by-laws are, in general, placing less emphasis on land use and concentrating on creating livable, mixed-use "places", wherein people can live, work, and play and move around using a variety of transportation modes including walking, cycling, and transit. These built form outcomes echo those sought by *The London Plan*. A number of zoning tools that can be used to achieve such positive outcomes are discussed in Sections 3, 4, and 5..

1.5 Methodology

In creating this discussion paper, the Consultant Team undertook several activities (see [Appendix B1. Methodology](#)).



2.0 **ASPIRATIONS AND ISSUES**

2.1 Overview

Between 2015 and 2035, the City of London is forecasted to grow by over 77,000 people and to add 43,000 new jobs to the economy (LP 6). To support this population and economic growth, the City of London will be required to support new development. Much of this development will be concentrated within the city's built up area boundary and materialize through intensification strategies. *The London Plan* reflects on the positive aspirations of growth and intensification while cautioning against its potential negative impacts.

With respect to aspirations, *The London Plan* states that future development in the city is to foster a well-designed built form that will be compatible within its context. New development is to support a positive pedestrian environment with high-quality public spaces that are safe, accessible, attractive, and vibrant. All types of active mobility are to be supported and neighbourhoods are to be universally accessible. Buildings are to be designed to have a "sense of place" and distinct character that is consistent with *The London Plan's* vision for each Place Type.

Critical to the successful implementation of the Plan's Place Type policies is minimizing the potential negative impacts of new development, particularly where larger, more intense buildings are introduced into, or adjacent to, areas of lower intensity. In these areas, various impacts must be considered and mitigated (e.g., shadowing; loss of privacy, trees, and canopy cover; visual impact; traffic and parking; and noise).

2.2 Aspirations: Encouraging Positive Outcomes

The London Plan places a lot of emphasis on growing “inward and upward” to achieve a compact form of development that will fit in with and reinforce the character of the surrounding context. While the Plan still permits limited new development on previously undeveloped land in some locations, it actively encourages and supports higher intensity forms of development within the existing built-up areas of the city. The Plan also promotes intensification in appropriate locations in a way that is sensitive to existing neighbourhoods and represents a good fit. This section provides more details on *The London Plan*’s policy guidance for what constitutes appropriate forms of intensification that are context sensitive and a “good fit”.

To manage intensification in a manner that will achieve *The London Plan*’s vision, the City’s past planning successes must be blended with a new approach (LP 54). This new approach is defined in the key directions of the Our Strategy section of the Plan, wherein planning strategies that serve as a foundation to the policies of the Plan are presented. As these strategies will guide London’s development to 2035, it is critical that they encourage positive outcomes while mitigating the potential adverse effects of growth and intensification.

The London Plan’s Key Direction #5 directs that the City “build a mixed-use compact city” (LP 59). Inherent to this direction are policies pertaining to the intensity and form of development across London, including the following:

1. *Implement a city structure plan that focuses high-intensity, mixed-use development to strategic locations – along Rapid Transit Corridors and within the Primary Transit Area;*
2. *Plan to achieve a compact, contiguous pattern of growth – looking “inward and upward”;*
3. *Sustain, enhance, and revitalize [the] Downtown, Main Streets, and Urban Neighborhoods; and*
4. *Plan for infill and intensification of various types and forms, to take advantage of existing services and facilities and to reduce [the] need to grow outward.*

The following reviews tools that can be employed to encourage the city to grow in alignment with these policies.

2.2.1 Residential Intensification

The London Plan supports intensification in residential areas in the following forms:

- The introduction of additional dwelling units;
- The expansion of existing buildings;
- The adaptive re-use of existing, non-residential buildings, for residential use;
- Infill development of vacant and underutilized lots;
- The creation of new lots through the severance of existing lots; and
- Redevelopment on developed lands at a higher than existing density (LP 80).

Residential intensification is fundamentally important to achieving the vision and key directions of *The London Plan* (LP 937). Intensification within existing neighbourhoods is encouraged to help realize the City's vision for aging in place, diversity of built form, affordability, vibrancy, and the effective use of land in neighbourhoods. Such intensification is intended to add value to neighbourhoods by adding to their planned and existing character, quality, and sustainability.

An important consideration is the size of lots created through the intensification process. When lots are too small, additional servicing challenges arise. For instance, challenges are met in meeting the required minimum separation distances between services and locating utilities and other infrastructure, such as streetlights, hydro transformers, and fire hydrants. Further, lot drainage challenges emerge as more land is covered by impervious building footprints. This in turn may require the introduction of additional stormwater management interventions.

2.2.2 Non-Residential Intensification

In non-residential areas, a greater intensity of use is encouraged, where appropriate, within mixed-use, commercial, industrial, and institutional areas (LP 85). Place Type policies encourage intensification and the more efficient use of land and resources through various strategies, including:

- The elimination of minimum parking requirements;
- The establishment of minimum density targets;
- The encouragement of lot assembly to create comprehensive developments that reduce vehicular accesses to the street and allow for coordinated parking facilities (LP 840);
- The re-purposing and reformatting of existing, non-residential buildings;
- Infill development and intensification of existing, non-residential buildings; and
- Redevelopment on developed lands at a higher than existing density.

See [Appendix A2. Non-Residential Intensification Strategies](#).

2.2.3 Intensification Balanced by Public Benefits

Since the adoption of *The London Plan*, Section 37 of the *Planning Act* has been altered to provide a new tool: community benefits charges (CBC). Municipalities will need to develop a CBC strategy and by-law to outline the details of how CBCs will be implemented; however, it will no longer tie public benefits to additional height and density. The intention of CBCs is to provide a method for municipalities to obtain capital costs for facilities, services, and matters incurred from development and population growth, capped at 4% of the land value. Although the mechanism for providing public benefits will change, the intent of *The London Plan* is clear: greater intensity should be balanced by community benefits.



2.2.4 Further Goals for Place Types

In addition to the above, zoning regulations may support the achievement of other Place Type-specific intensification policies, as detailed in [Appendix B2](#), [Appendix C1](#) and [Appendix C2](#). Each Place Type has a unique role in the city's structure and distinct range of permitted uses, intensity of development, and envisioned built form (LP 748 and LP 749). Zoning regulations can advance the implementation of such policies.

2.2.5 Implementing the Vision and Key Directions

In controlling how growth is managed by regulating the intensity and form of development, zoning by-laws implement the vision, values, key directions, and policies of official plans. The potential positive outcomes of intensification that may be achieved through effective zoning regulations include:

- A more compact, mixed-use form of development that improves London's accessibility and walkability and encourages pedestrian activity;
- An increase in the number of jobs provided per hectare;
- An increase in the range and mix of housing options provided in the city, which in turn can improve housing affordability and support the City in meeting its housing needs;
- A shift in mobility toward more sustainable modes of travel, such as walking, cycling, and public transit;
- Reduced energy consumption and greenhouse gas and pollution emissions;
- Reduced costs associated with infrastructure, operating costs, and vehicular congestion; and
- Preservation of prime agricultural lands and natural resources.

See [Appendix C3. How the New Zoning By-law Can Support *The London Plan*](#).

2.2.6 The Importance of City Design

The London Plan outlines several city building policies that establish a framework for how the city will grow, and the shape, character, and form that new development will take over the next couple of decades. The first set of policies in the City Building section of the Plan deal with city design. Within this section of the Plan, it is stated that the design of the city is shaped by both its natural setting and its built form, including the city's streets, streetscapes, public spaces, landscapes, and buildings. The intention of city design is to support the creation of a built form that fosters positive relationships amongst these elements and the development of pedestrian and transit-oriented environments, which in turn support the integration of mobility and land use (LP 189).

Further, the Plan states that the planning and development the City of London manages over the coming decades will foster, amongst other things:

- A well-designed built form throughout the city;
- Development that is designed to be a good fit and compatible within its context;
- A high-quality, distinctive, and memorable city image;
- Development that supports a positive pedestrian environment;
- A built form that is supportive of all types of active mobility and universal accessibility; and
- High-quality public spaces that are safe, accessible, attractive, and vibrant (LP 193).

To achieve the City's design objectives, *The London Plan* requires that all planning and development applications, public projects, and all relevant by-laws shall conform with the City's design policies relating to:

- Character;
- Street Network;
- Streetscapes;
- Public Space;
- Site Layout; and
- Buildings (LP 194).

As zoning only deals directly with individual properties, not the public realm, the headings relevant to this discussion paper are limited to character, site layout, and buildings. See [Appendix C4. *The London Plan and Character*](#).

2.2.7 Contextual Fit

The London Plan emphasizes the importance of new development fitting into and supporting the character of the surrounding context. This aspiration is stated clearly in the Our Tools chapter of the Plan, under the subheading Evaluation Criteria for Planning and Development Applications (LP 1578). See [Appendix C5. Evaluation Criteria for Planning and Development Applications](#).

Many elements listed in LP 1578 are within the purview of a zoning by-law, including: street wall; height; density; massing; scale; placement of building; setback and step back; relationship to adjacent buildings; and, coordination of access points and connections. Zoning tools can play an important role in ensuring contextual fit, particularly with respect to building form, as outlined later in this paper.

2.2.8 Transitions

The term “transition” is often used to describe how a proposed building that is typically more intense and different in form than the buildings around it, relates to its neighbours. A building that transitions well to its neighbours usually employs several different design strategies that help to manage contrasts in intensity (i.e., height and density) and form (i.e., massing, bulk, location, and orientation on the site) to allow the building to fit more comfortably, and relate more harmoniously, to its surroundings.

The London Plan requires appropriate transitions between buildings and areas of different intensity. It states that design measures relating to building height, scale, and massing should be used to provide a transition between development of significantly different intensities, while considering the existing and planned context (LP 293). For example, an intensification area abutting an established neighbourhood may be required to concentrate density away from the established neighbourhood and ensure an appropriate transition down in scale in the direction of the lower scale area.

The new London zoning by-law can include regulations to ensure the intensity of development is appropriate for an individual site, and a desirable built form that is compatible with the scale of the neighbourhood is achieved. Appropriate transitions can be accommodated by managing both building intensity and building form. Intensity related zoning tools that can be used to provide appropriate transition between different Place Types and uses include:

- Height;
- Lot coverage;
- FAR;
- Units per hectare;
- Setbacks and stepbacks;
- Separation distances;
- Angular planes; and
- Landscape buffering.

2.3 Issues: Minimizing Negative Impacts

There are a variety of negative issues and impacts that are often associated with intensification and growth. As larger, more intense buildings, clusters of buildings, and new neighbourhoods are introduced into, or adjacent to, areas of lower intensity there are bound to be issues associated with the new development and how it “fits” into the surrounding context. London’s new zoning by-law will play a crucial role in establishing rules for each Place Type that will shape new development to be contextually appropriate and minimize potential negative impacts. Before examining how zoning can be best used to achieve this goal it is important to understand and define these potential issues and impacts.

With respect to impacts, the Our Tools chapter of *The London Plan* emphasizes that identifying and managing the potential impacts of new buildings is a crucial part of the development application and review process. The Plan states (LP 1578):

All planning and development applications will be evaluated with consideration of the use, intensity, and form that is being proposed. The following criteria will be used to evaluate all planning and development applications:

... 6. Potential impacts on adjacent and nearby properties in the area and the degree to which such impacts can be managed and mitigated. Considering the type of application under review, and its context, an analysis of potential impacts on nearby properties may include such things as:

- 1. Privacy;*
- 2. Shadowing;*
- 3. Visual Impact (neighbourhood character);*
- 4. Trees and Canopy Cover;*
- 5. Traffic and Access Management;*
- 6. Parking; and*
- 7. Noise, Emissions, Lighting, and Garbage.*

Additional relevant issues and impacts related to intensity and built form that are not specifically itemized in *The London Plan* include:

- Impacts on servicing, infrastructure and community facilities;
- Land needs management;
- Loss of light (ambient and direct);
- Safety (“eyes on the street”);
- Blocked views and skyviews; and
- Wind.

See [Appendix A3. Issues and Impacts Associated with the Form of New Development](#). Zoning tools that can be used to address these issues and lessen or eliminate their impacts are presented in Sections 3, 4, and 5.

2.4 Form-Based Codes and the Transect

To ensure that the right forms of intensification occur in the right places, all lands within the City have been assigned a Place Type. Each has corresponding policies that regulate the development that is permitted. With an emphasis on Place Types and development that will fit within and reinforce the character of the surrounding context, *The London Plan* promotes the creation of a form-based zoning by-law (or form-based code (FBC) as it is referred to in the United States). The Form-Based Code Institute defines a FBC as: “...a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code”.

Conventional Zoning

Density use, FAR (floor area ratio), setbacks, parking requirements, maximum building heights specified



Zoning Design Guidelines

Conventional zoning requirements, plus frequency of openings and surface articulation specified



Form-Based Codes

Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.

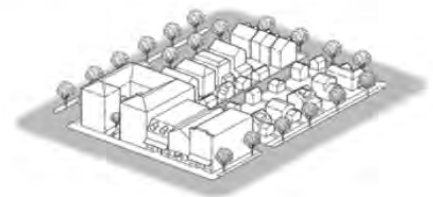


Figure 2. Comparison of Zoning Approaches (Source: Form-Based Code Institute, 2022)

Many form-based zoning by-laws are organized using a “transect” approach. This approach is similar to what naturalists use to describe the natural environment and the transition from one ecosystem to another. A rural-to-urban transect (see Figure 3) is an ordering system that places all of the elements of the built environment in an easy-to-understand hierarchy that progresses from the most rural areas through to the most urban areas. Typical rural-to-urban transects are divided into six zones:

- Natural (T1);
- Rural (T2);
- Sub-urban (T3);
- General urban (T4);
- Centre (T5); and
- Core (T6).

Special Districts are used to capture parts of the built environment that do not fit within the traditional zones, such as industrial areas.

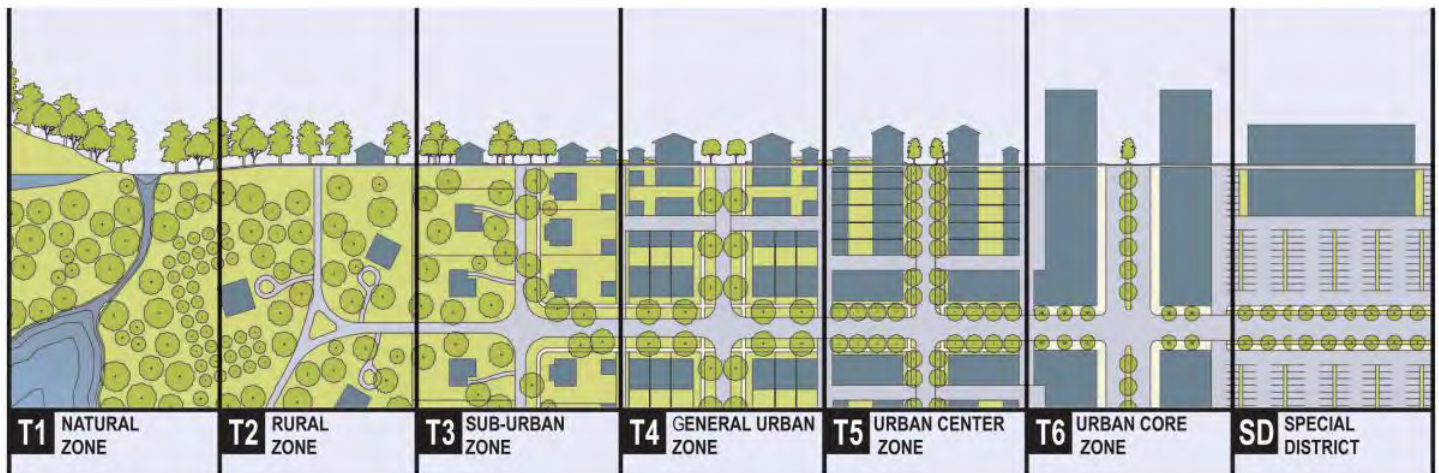


Figure 3. A Version of the Original Transect Diagram with Six Successional Zones (Source: DPZ Partners, 2022)



PART I – ZONING AND INTENSITY

3.0

POTENTIAL ZONING FOR INTENSITY SOLUTIONS

This section considers the specific zoning tools and approaches that can be used to support the City of London in achieving its intensity goals and aspirations while minimizing the potential negative impacts of growth and development. This section builds on the work completed in the ReThink Zoning Background Papers (2021).

3.1 Key Questions

The London Plan calls for a compact, contiguous pattern of growth, looking “inward and upward”. The amount and location of intensity will be a key tool in achieving a wide variety of goals related to sustainability, neighbourhood character, and the economy. To achieve the goals of *The London Plan*, the new zoning by-law will need to provide regulations that effectively control and direct intensity. Key questions related to how to zone for intensity include:

- What level of intensity, in terms of height and density, should be permitted as-of-right by the zoning by-law?
- What zoning regulations would be most effective in achieving the “right” level of intensity within each Place Type and mitigating the potential negative impacts of growth and intensification?

3.2 Conventional Zoning Tools

The following conventional zoning tools, as detailed in Table 1 below, regulate intensity in Ontario:

Table 1. Conventional Zoning Tools

Conventional Zoning Tools		
Tool	Description	Use
Units Per Hectare/Jobs Per Hectare	<ul style="list-style-type: none"> Means the ratio between the number of dwelling units or jobs located on a lot to one (1) hectare of lot area. It is calculated by dividing the number of units by the area of the lot in hectares. Units per hectare is a measure of density based on the potential number of units that a specific lot can accommodate. It can be used to limit activity intensity and building intensity by controlling the number of people occupying a building and the size of the building. Similarly, jobs per hectare is a measure of the employment density for a specific lot. 	<ul style="list-style-type: none"> Key tool in achieving residential and non-residential intensification goals. Influences the type of development in a given area (i.e., compact or mixed-use). Provides sufficient intensity to encourage multiple modes of transportation (i.e., ridership for transit and active transportation). Different levels of density support different levels of transit service. <i>The London Plan</i> identifies residential density targets for different types of Protected Major Transit Station Areas (PMTSAs) through units per hectare. Form will be a primary driver of intensity, however, the zoning by-law will need to implement the minimum density targets of <i>The London Plan</i>.
Floor Area Ratio (FAR)	<ul style="list-style-type: none"> Means the ratio of a building's total floor area to the size of the piece of land on which it is built. It is calculated by dividing the GFA in square metres by the area of the lot in square metres. FAR is a measure of building intensity used to limit the size of a building based on the area of a lot. 	<ul style="list-style-type: none"> Appropriate for regulating higher intensity development, particularly mixed-use and commercial uses. Mitigates potential negative impacts on servicing; infrastructure and community facilities; access and traffic management; visual impact; and other issues resulting from excessive building intensity and the corresponding activity intensity.

<p>Gross Floor Area (GFA)</p>	<ul style="list-style-type: none"> Means the sum of the total floor area of each storey of a building or buildings on a lot, measured from the exterior faces of the exterior walls or from the centerline of the common wall separating two buildings. GFA is a measure of building intensity which can be used to limit urban density. It is used to calculate the FAR. 	<ul style="list-style-type: none"> Used in a similar context as FAR. However, as GFA regulates floor area unrelated to the area of the lot, it is more effective at regulating activity intensity in areas with minimal site constraints (i.e., mixed-use and commercial uses in low density areas with large lots). Can be used to regulate the activity intensity of specific uses in higher intensity mixed-use contexts.
<p>Lot Coverage</p>	<ul style="list-style-type: none"> Means the percentage of a lot covered by the first storey of all buildings and structures on the lot. Lot coverage can control both building intensity and activity intensity by limiting the amount of the lot that is occupied by buildings and the uses contained within them. 	<ul style="list-style-type: none"> Most effective in regulating ground-related residential uses in neighbourhoods. In other contexts, lot coverage can limit activity and building intensity to mitigate potential issues related to the functionality of the site. The amount of impervious area on a site impacts stormwater runoff. Lands with increased lot coverage may require additional stormwater management strategies.
<p>Building Height</p>	<ul style="list-style-type: none"> Means the height of a building measured in either storeys or metres. Height controls both activity and building intensity by limiting the number of floors that can be used for a specific use or uses. 	<ul style="list-style-type: none"> Primary tool for regulating intensity in <i>The London Plan</i>. Building height will play a key role in regulating intensity in the zoning by-law by directing greater or lesser intensity to specific areas to achieve the goals for each Place Type. In lower intensity areas, regulating building height will assist in preventing potential negative outcomes.
<p>Number of Bedrooms</p>	<ul style="list-style-type: none"> Means the number of bedrooms contained in a specific building type. 	<ul style="list-style-type: none"> Used to control activity intensity in neighbourhoods by limiting the number of potential permanent occupants of residential buildings. Not considered a primary tool in regulating density; however, it is included in specific areas within <i>The London Plan</i>, such as Near Campus Neighbourhoods (LP 970).
<p>Parking</p>	<ul style="list-style-type: none"> The intensity of use on the site impacts necessary parking which, depending on the form it takes, can represent a physical constraint on the intensity that can feasibly be supported on the site. 	<ul style="list-style-type: none"> Not considered effective as a primary tool in regulating intensity. However, the impact of parking on intensity should be considered in all Place Types.

These tools can be used in combination to limit activity and building intensity where needed. Many of the tools have been effectively used in London's Zoning By-law Z.-1 and may be appropriate to continue using in the new zoning by-law.

3.3 Other Tools

There are several other tools that may be used in combination with or in place of the conventional zoning tools outlined in the previous section. These tools include:

- Site plan approval;
- Holding provisions;
- Form-based zoning; and
- Design guidelines.

See [Appendix D1. Other Tools to Regulate Intensity](#).

3.4 Approaches

3.4.1 Levels of Regulation

Approaches to implementing zoning regulations related to intensity fall within a spectrum. Some approaches are more stringent than others.

Stringent Approach

One approach to zoning for intensity is to create a by-law with lower as-of-right permissions that require a zoning by-law amendment (ZBA) to achieve the upper limit of the land's development potential.

This approach mitigates potential negative impacts of intensity through the development approvals process and a thorough review of supporting studies by City staff. In some instances, tools unrelated to intensity could be the limiting factor on the intensity of the development, such as zoning tools primarily used to control the form of a building.

Low as-of-right intensity permissions throughout a city can have unintended consequences. Limiting as-of-right intensity can:

- Discourage redevelopment in areas where intensity is desired,
- Create uncertainty in what will be permitted, and
- Erode a planning framework if numerous amendments and appeals become the way in which intensity is created.

However, used sparingly in specific areas especially prone to adverse impacts, it can be an effective method of ensuring a thorough review and requirement to meet higher level planning policies.

Allowing Greater Intensity Where Regulations are Met

Another approach to answering the question of what level of intensity should be permitted as-of-right is allowing greater intensity where specific criteria are met.

For instance, the new zoning by-law could set a lower as-of-right height than currently permitted and specify requirements to reach a higher as-of-right height limit without the need for a ZBA. This option can direct higher intensity to specific areas to achieve the goals of *The London Plan* and create certainty by defining expectations for applicants and the community.

There are several potential issues with tying greater height and density to community services and facilities or other public benefits, including the following:

- Linking additional height and density with objectives that are not design-related can increase the risk that additional height and density results in a building that is no longer appropriate in terms of intensity and form.
- Multiple intensity limits for a specific site or area can be difficult to justify. If an upper height is permitted through provisions unrelated to building design, it undermines the rationale for why a similar site could not exceed the lower height limit. In this case, there is limited planning justification to distinguish the two permissions. Intensity regulations are less effective if another height has already been deemed an appropriate level of intensity.
- A critical element of the success of this approach is the base density permitted prior to additional height or density being considered. If the base density is too high, there may not be enough incentive to provide community facilities or services. Conversely, there is a risk that the achievement of public benefits in return for density might drive up density beyond what would normally be supported or considered appropriate.

The following tools can be deployed to ensure intensity is contextually appropriate and results in sufficient public benefits:

- A robust zoning by-law will provide intensity, use, and form regulations to encourage positive outcomes and avoid potential negative impacts.
- A CBC strategy and by-law, alongside development charges and parkland dedication, can ensure appropriate funding for community services and facilities.
- Non-zoning tools such as site plan approval, holding provisions, and design guidelines can be employed to achieve desired goals for new developments.

The upper height limits specified as achievable in *The London Plan* have been deemed appropriate in specific instances where there are sufficient community services and facilities to support the proposed intensity. Alongside other tools, it may not be necessary or appropriate to link intensity regulations with public benefits.

Pre-Zoning

Pre-zoning, as it pertains to intensity, is the application of zoning regulations that mirror the permissions of the corresponding official plan. In the context of *The London Plan*, pre-zoning could permit the maximum possible height achievable within a Place Type, requiring only site plan approval for developments that comply with the Plan's intensity limits.

Many municipalities in Ontario have pre-zoned specific areas to facilitate and direct intensity to those areas. For example, the Cities of Markham, Mississauga, and Vaughan have used pre-zoning to encourage development in designated downtown areas and along avenues connecting with the City of Toronto to ensure that serviced sites are available for development in response to increased market demand. By permitting higher densities as-of-right, developers and residents are more likely to build in and move to those areas offering more certainty and faster approvals through the development approvals process.

Similar to the City of Vaughan's pre-zoning of the Vaughan Metropolitan Centre to align with the City's Secondary Plan, the City of London could pre-zone areas consistent with *The London Plan*. Pre-zoning areas such as the Downtown, Transit Villages, and Rapid Transit Corridors can be utilized to encourage and direct intensity to achieve city building policies. *The London Plan* applies an as-of-right height and a height achievable through the Type 2 Bonus Zoning, as detailed in the Our Tools policies of the Plan. Pre-zoning could apply the upper limit to permit intensity where it is appropriate and desired alongside other tools to achieve the facilities, services, or other matters detailed under the Type 2 Bonus Zoning policies (LP 1652).

However, there are potential risks involved with pre-zoning. Building permits can be issued based on compliance with "applicable law", which includes zoning by-laws but not official plans. If a building permit is issued absent of a ZBA, it removes the opportunity for policy-driven review and public engagement. If land is pre-zoned for intensity, it is critical that there are robust provisions regulating form, or design guidelines that can be enforced through site plan approval.

A potential solution to the risks associated with pre-zoning is pre-zoning with a holding (H) symbol. Under the *Planning Act*, holding symbols may be applied to lands to prohibit development in the underlying zone until such time as certain conditions are met. Conditions attached to a holding symbol could prevent the potential negative impacts of intensity by requiring supporting studies, such as traffic impact studies or servicing studies.

This page intentionally left blank.

3.4.2 Intensity Controls

Within the broader strategies for regulating intensity, zoning tools can be employed to control activity and building intensity in specific contexts.

Activity Intensity Through Performance Standards

Zoning tools specific to intensity can be used alongside use regulations to regulate activity intensity. Although a specific use may be appropriate within a given Place Type or zone, the intensity of the activity may cause negative impacts.

For example, although office space may be permitted in a Rapid Transit Corridor, if activity intensity is not regulated, it may be desirable for companies to move out of Downtown to locations where they can occupy land with fewer area limitations. This could result in a negative outcome for the City as it may weaken the demand for office space Downtown. Similar issues could arise for different uses such as retail, where unlimited activity intensity has a range of potentially adverse outcomes. These adverse outcomes may include elevated levels of noise and/or traffic in areas with high activity intensity.

A solution to this potential issue, first identified in the ReThink Zoning Background Paper (2021) and mentioned in *Discussion Paper #3: Zoning in on Existing Uses*, is limiting the activity intensity of specific uses in different zones through zoning tools such as GFA, FAR, or lot coverage. By limiting the maximum floor area of a land use within a specific zone, increased or decreased activity intensity can be directed to particular areas of the city or within neighbourhoods to encourage positive outcomes.

There are instances of these regulations built into *The London Plan* that should be carried over to the new zoning by-law. Additional opportunities to use this approach will be explored through *Discussion Paper #6: Zoning in on Place Types*. However, caution should be taken regarding the quantity of performance standards to avoid an overly complicated zoning by-law. In some instances, non-zoning performance standards, such as demonstrating satisfactory shadow, traffic, or servicing impacts, can be used to mitigate potential adverse impacts through site plan approval or holding provisions.

Intensity Variations

Intensity variations within zones can be utilized to encourage positive outcomes and avoid potential negative impacts. Intensity variation creates subsets within each zone, each with its own intensity regulations. The level of desirable intensity within a zone varies depending on its location, such as proximity to infrastructure and services or other zones.

Examples of where intensity variations could be used are the Transit Village and Rapid Transit Corridor Place Types. These Place Types and their corresponding zones are centred around the provision of transit and will form Protected Major Transit Station Areas (PMTSAs). The PMTSAs could be broken down based on intensity, with the core of the PMTSA zoned to allow for the greatest level of intensity and the outer area zoned for lower intensity. This approach would achieve the goal of providing

appropriate transitions in scale from higher density areas to lower density neighbourhoods.

Form-Based Zoning

Form-based zoning, as discussed above, is an alternative to traditional zoning that focuses on achieving a certain built form that addresses the relationship of buildings to the street and adjacent uses. Form-based codes are discussed in more detail in Part II – Zoning and Form. It is mentioned briefly in this context as a method of regulating intensity where there is heightened concern related to contextual fit or community character.

By focusing on the specific form a building takes, form-based zoning inherently includes restrictions on building intensity. Part II – Zoning and Form provides the example of Neighbourhoods as areas where form-based zoning would be effective at regulating intensity. *The London Plan* encourages contextually appropriate intensification in all Urban Place Types, which can be accomplished through a variety of building forms. However, there is often concern related to intensification and its potential to adversely impact established neighbourhoods. In this instance, form-based zoning is an effective approach to regulating intensity. Activity and building intensity are regulated and limited by the form in which it is introduced, thereby addressing potential negative outcomes.

3.5 Recommended Tools

The desired positive outcomes of growth and intensification outlined in Section 2 can be achieved by utilizing a combination of conventional and non-conventional zoning tools. Likewise, specific tools can be employed where needed to avoid potential undesired outcomes.

The London Plan contemplates that conventional zoning tools such as height, GFA, floor plate area, and density may be used to implement Place Type policies. It is recommended that the conventional zoning tools referenced in *The London Plan* for each Place Type be included as regulations for each Place Type's corresponding zone in the new zoning by-law. Further, it is recommended that other conventional zoning tools such as FAR and coverage be introduced where appropriate.

Form-based zoning is an example of a non-conventional zoning tool that can be used effectively alongside conventional tools (see Part II – Zoning and Form).

The approaches discussed herein require consideration on a place-by-place basis. For example, pre-zoning could be implemented to encourage investment in areas where challenges exist that may dissuade development activity, and form-based zoning can be utilized where the character of a community is of particular importance.

Depending on the level of regulation decided upon for the new zoning by-law, other types of non-zoning tools can be used to achieve positive outcomes. Site plan approval, design guidelines, and holding provisions can be used in combination with traditional zoning tools to achieve the positive outcomes of

growth and intensification.

3.6 Tools and Place Types

Each Place Type and the uses found within them have specific goals and potential challenges that will require tailored approaches. Therefore, zoning tools should be customized and adapted for use in each Place Type. *Discussion Paper #6: Zoning in on Place Types* and *Discussion Paper #7: Implementing the New Zoning By-law* explore the most appropriate zoning approach to respond to each Place Type's specific challenges.



Source: The London Plan

PART II – ZONING AND FORM

4.0

POTENTIAL FORM- BASED ZONING SOLUTIONS

This section considers the specific zoning tools and approaches that can be used to assist the City of London in achieving its form-based goals and aspirations, while minimizing the potential negative impacts of growth and development. This section builds on the work completed in the ReThink Zoning Background Papers (2021).

4.1 Key Questions

The London Plan calls for a compact, contiguous pattern of growth, looking “inward and upward”. Zoning is a key tool that may be used to control the built form and siting of new buildings to achieve the goals of *The London Plan*. The new zoning by-law will need to provide regulations that effectively control and direct building form. Key questions related to how to zone for form include:

- To what degree should form considerations be a part of zoning considerations?
- To what degree should form considerations be based on the surrounding context?
- How much should “built form” be a site plan control matter?
- What zoning regulations are effective in ensuring the right form of development is achieved within each Place Type?
- How can an appropriate form be ensured when increases in intensity, specifically height or density, are permitted?

4.2 Zoning for Form (Building and Site Layout)

Zoning tools can be used to ensure that new development fits appropriately within and reinforces the existing and/or planned context of an area or neighbourhood, while minimizing the potential negative impacts of new development on nearby properties, buildings, and the public realm.

An important preliminary question is how prescriptive built form zoning provisions should be in order to effectively implement *The London Plan's* policies. The greater the number of built form type provisions within the new zoning by-law, the greater the ability of the by-law to precisely shape a building's massing and control the location and orientation of it on a site. However, if there are too many form-based provisions, or if provisions are too prescriptive, it can potentially hamper or stifle design creativity and lead to an increased number of zoning by-law amendment applications. It is important to strike the right balance.

Set out below are a series of form-based zoning tools or provisions that may be considered by the Consultant Team for inclusion in the new London zoning by-law. These tools will be re-examined and refined within the forthcoming *Discussion Paper #6: Zoning in on Place Types*.

4.3 Zoning Tools and Site Layout

The following zoning tools may be used to control site design and the location of buildings on a site.

4.3.1 Setbacks and Build-To Lines

Setbacks require that the face of a building must be located no closer to a property line than the minimum distance specified (see Figure 4). Typically, the bigger the contrast in built form and intensity, the greater the setback that is required. Setbacks on either side of a mutual property line ensure proper building spacing distances between neighbouring sites. Building spacing will vary among Place Types, with smaller separation distances being appropriate in the more intense Place Types such as the Downtown, Transit Villages, and along Rapid Transit Corridors.

Setbacks are an extremely effective tool for limiting the location of a building on a site and for ensuring that buildings maintain minimum separation distances from neighbouring properties and the public realm, which helps to mitigate light, view, and privacy issues. Setbacks can also maintain standard yard sizes and shapes, which in many residential areas can be particularly important for maintaining neighbourhood character and providing adequate space for the conveyance of rainwater surface runoff.

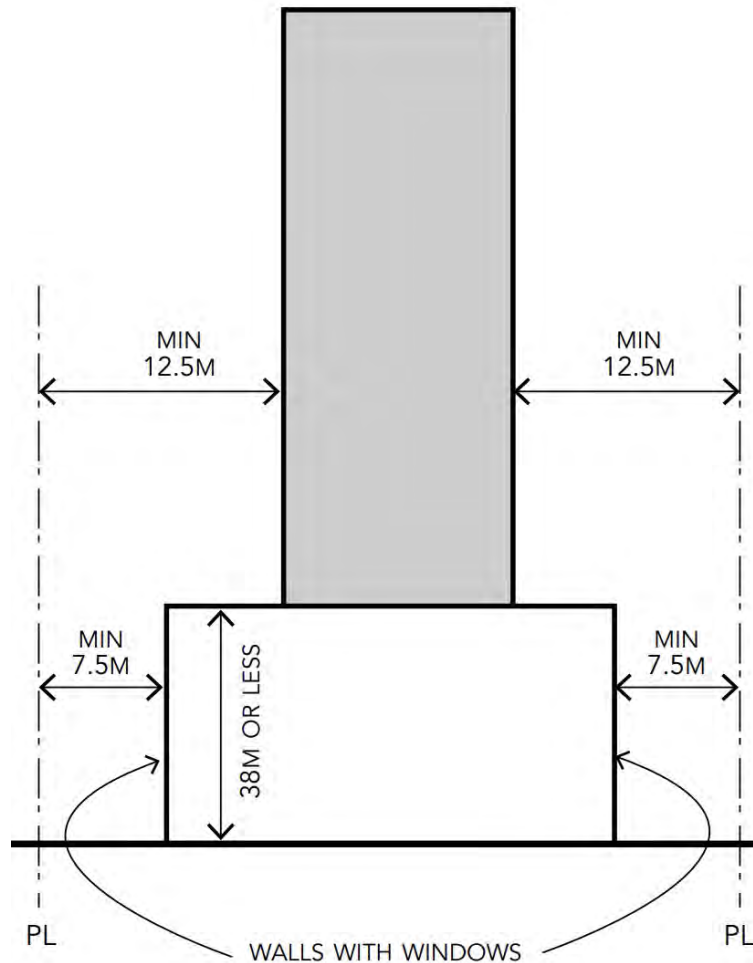


Figure 4. Setback Diagram 1 (Source: Newmarket Zoning By-law 2019-06, 2019)

Using Setbacks to Discourage Towers on Small Sites

Establishing minimum tower setbacks is one of the most effective tools for controlling tall buildings on small sites. For example, many Ontario municipalities have created guidelines or zoning by-laws that recommend or require the tower portion of a tall building to be setback 12.5 m from side and rear property lines (or the midpoint of a rear lane), and 3 m from the front property line (see Figure 5). The setbacks are used to determine the resultant tower floorplate. At a certain point, adhering to the minimum setbacks will result in a tower floorplate that is too small to be viable (typically below 400 m² to 450 m²), as the ratio of saleable or rentable space to circulation space becomes too small.

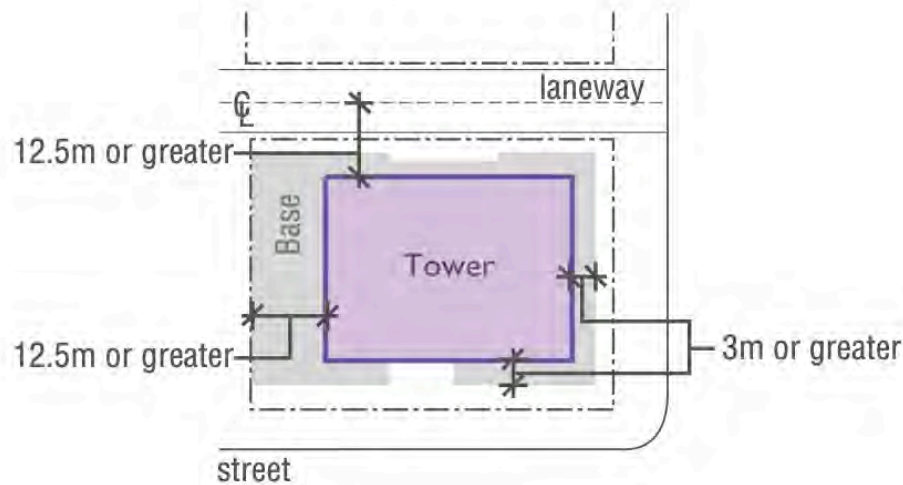


Figure 5. Setback Diagram 2 (Source: City of Toronto Tall Building Design Guidelines, 2013)

Build-To Lines

Minimum setbacks are sometimes replaced by “build-to lines”, which require that the façade or a certain percentage of a façade must be built either at the property line or a specified distance from the property line. This is common on residential streets that have a consistent street wall and front-yard area. It is also common on retail Main Streets where a consistent street wall provides a strong sense of place, and the building walls work together to frame the street.

4.3.2 Orientation

Another important tool to help ensure good contextual fit is building orientation. Zoning tools that can be used to control orientation include:

- Build-to lines, which state that a certain percentage of the façade must be built on or at a specified distance from the property line;
- Rules which require the long or short axis of a building to be oriented adjacent or parallel to the front property line; and
- Rules which require only a certain percentage of the façade be located at the build-to line.

See [Appendix B3. Building Orientation](#).

4.3.3 Landscaping, Open Space, and Buffering Tools

Another very important way to help new development fit into the surrounding context is to ensure that the amount of space on a site that is devoted to landscaping and open space is consistent with the prevailing patterns in the area, or the patterns that are being encouraged in a particular Place Type. See [Appendix B4. Landscaping, Open Space, and Buffering Tools](#) for additional information on how landscaping, open space, and buffering tools may be used to help control site design and the location of buildings on a site.

4.3.4 Vehicular Access and Parking Location Tools

How vehicles are permitted to access a site can have a significant impact on a new development's contextual fit. See [Appendix B5. Vehicular Access and Parking Location Tools](#) for additional information on potential zoning tools and how they may be used to control vehicle access and parking location and size on a site.

4.4 Zoning Tools and Building Form

As discussed, zoning for form considers both site layout and building form, which are the focus of this section. When zoning for building form, it is important to understand that many zoning tools often work together to regulate the final form of a building. As a result, it may not be possible for a building's form, as envisioned by a developer, to comply with every zoning tool's set minimum and/or maximum provisions. For instance, in a specified area zoning regulations may establish a maximum height of 20 storeys, FAR of 7, and floorplate size of 750 m², with a requirement for interior setbacks to be 12.5 m. While designing a tall building that complies with these regulations, it may be realized that the maximum floorplate size and FAR are achieved at a height of 15 storeys. If the developer wishes to pursue the maximum building height allowed by the zoning by-law on-site (20 storeys), they may need to reduce the floorplate size to ensure they meet the maximum FAR zoning provision.

The following section examines zoning tools used to control building form.

4.4.1 Height

While height on its own is a measure of a building's intensity, using height restrictions in combination with other zoning tools can control the built form and contextual fit of a development. For example, in low-rise residential areas height restrictions can provide a good degree of control over a building's envelope and overall massing when combined with setbacks, maximum GFA, building width and depth, and first floor height above ground provisions. This in turn regulates a structure, regardless of the type of building it is, to fit within the surrounding neighbourhood's context.

4.4.2 Density

When density is combined with other zoning tools like setbacks, stepbacks, and floorplate limits, it can effectively shape and sculpt a building's form. Often, density provisions are perceived as regulating the amount of "clay" that can be molded into various forms through the use of other zoning tools. Further, density provisions can provide important insights to a development's overall building mass that other zoning tools alone cannot achieve.

In areas of the city where large mid-rise or high-rise buildings are permitted on relatively small sites, such as the Downtown, Transit Villages, and Rapid Transit Corridors, density (in the form of FAR) can provide a high degree of control over the "bulkiness" of a proposed building when combined with other zoning tools. As FAR can be used to override other built form-related zoning tools, establishing realistic FAR maximums based on the specific attributes of a neighbourhood is critical.

4.4.3 Stepbacks

Stepbacks are one of the simplest and most effective tools that can be used to shape the overall form of a building. A stepback describes the distance a portion of a building is to "stepback" from the edge of a lower level of the building. In part, stepback provisions are utilized to ensure larger buildings stepdown in scale as they approach lower scale buildings in order to avoid abrupt changes in built form and massing. Further, stepbacks help to establish greater distances between buildings of different scales to reduce shadowing and overlook. See [Appendix B6. Stepbacks and Building Scales](#).

4.4.4 Angular Planes

An angular plane is a theoretical "height ceiling" extending from a lot line or a specific distance from a lot line. The plane is projected over a lot at a specified angle, measured up from the horizontal, through which no part of a structure on the lot may penetrate. Angular planes typically have their highest point in the middle of the site then slope downwards toward a lot's property lines. This forces a building's scale and massing to transition down as they approach the edge of a lot, thus ensuring neighbouring properties reflect a similar built form. Figures 6, 7, and 8 illustrate angular planes. In certain locations, such as along Main Streets or where mid-rise buildings are permitted adjacent to low-rise residential areas, angular planes may be used to establish performance standards related to light and shadowing.

Adherence to angular plane provisions is sometimes achieved by using sloped building surfaces. However, more commonly these provisions are met through a stepped back building design. In recent years, design and development communities have pushed back against the requirement for angular planes, expressing that the stepped back design reflects a “wedding cake” form that is expensive to build and difficult to maintain, insulate, and make water-tight. To mitigate the impacts of a “wedding cake” form, the number of steps a building may include before reaching its maximum height can be regulated by the provisions of a zoning by-law.

It is important to reinforce that angular planes are a zoning tool that may help to ensure appropriate transitions in the scale and massing of buildings on neighbouring properties. Angular planes are not height provisions.

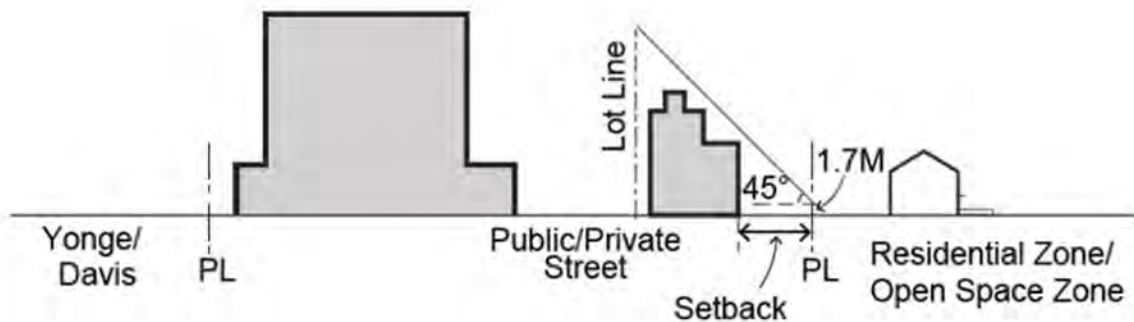


Figure 6. Angular Plane Diagram 1 (Source: Newmarket Zoning By-law 2019-06, 2019)

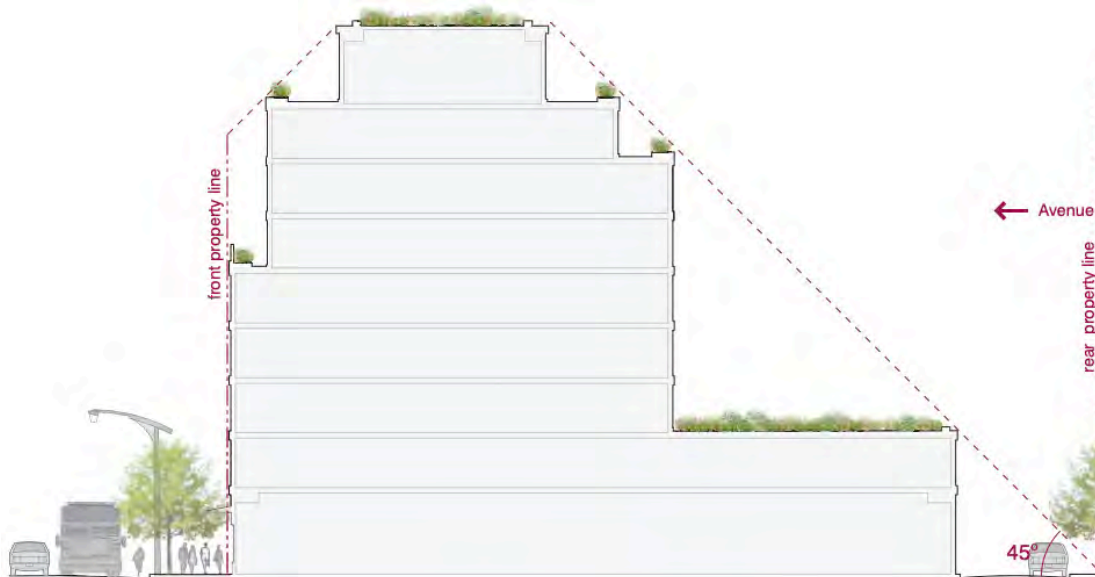


Figure 7. Angular Plane Diagram 2 (Source: City of Toronto Performance Standards for Mid-Rise Buildings, 2010)

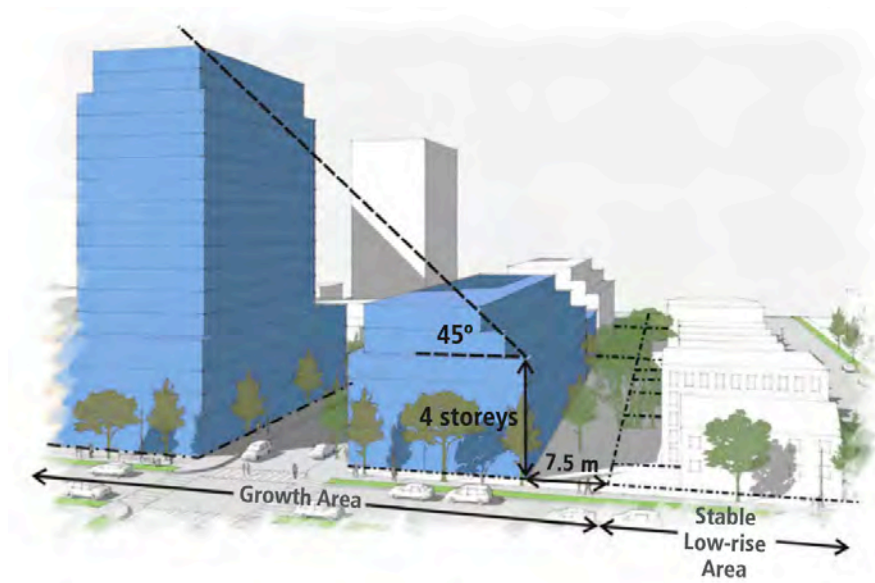


Figure 8. Angular Plane Diagram 3 (Source: City of Ottawa Urban Design Guidelines for High-Rise Buildings, 2018)

4.4.5 Floorplate Size and Shape

In recent years, one of the most effective means of controlling the form of buildings is to specify a maximum floorplate size in square metres (m^2). The objective of this provision is to encourage a “point-tower” form, which is often square in shape and/or designed in such a way that the building’s depth is no more than twice its width. This form reduces shadow impacts on neighbouring properties as slender towers create thinner shadows that move more quickly over an area as the sun angle changes throughout the day. “Slab-form” buildings cast wider shadows than “point-tower” buildings, resulting in greater shadowing impacts.

Moreover, zoning by-laws can specify maximum wall dimensions, or a maximum floorplate radius for circular buildings, to control a floorplate’s shape. As the primary objective of regulating floorplates is to mitigate potential shadowing impacts resulting from a building’s massing, the most effective means to measure floorplate size is by gross construction area (i.e., outside wall to outside wall, with no deductions or exclusions for elements such as balconies). Gross construction area provisions may be provided by a zoning by-law. Other potential zoning tools that can be used to control the size and shapes of floorplates include:

- Specifying a maximum floorplate size (e.g., $750 m^2$) or using a “floorplate circle” of a specified diameter within which a floorplate must fit (see Figure 9),
- Establishing a tower width to depth ratio (e.g., 2:1), and
- Establishing rules regarding the projection of balconies, especially wraparound balconies, which contribute to the perceived bulk of a building.

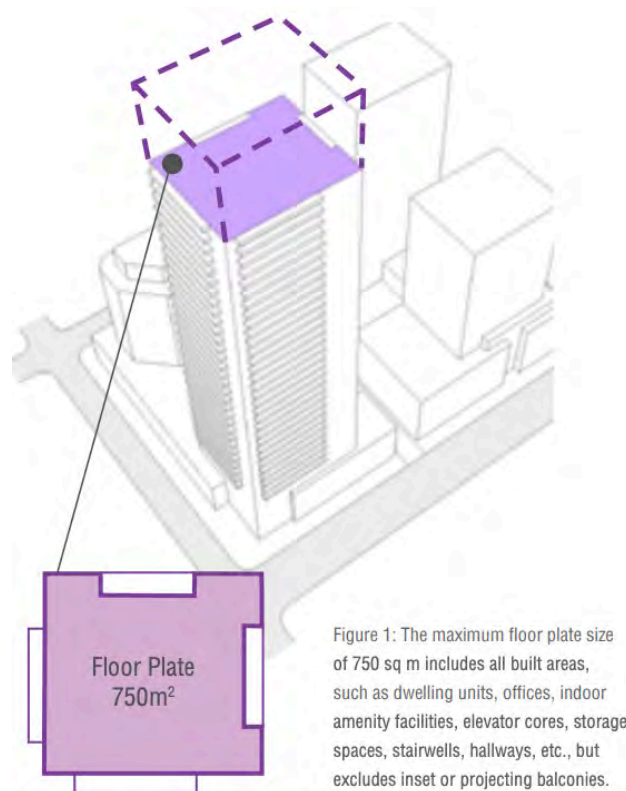


Figure 9. Floor Plate Size and Shape Diagram (Source: City of Toronto Tall Building Design Guidelines, 2013)

4.4.6 Roof Pitch and Design

For low-rise areas, roof pitch and design can play an important role in contextual fit. *The London Plan* makes it clear that contextual fit does not require new buildings to mimic or copy the design or architectural style of existing buildings, including the pitch and design of the roof. Nonetheless, there are several elements of roof design that can help ensure different roof forms and pitches work together to create a consistent neighbourhood character or sense of place. These elements include the height of eaves, the overall height of the roof (and where overall height is measured from), and the location and size of dormers or windows located above the eaves. Some zoning by-laws utilize complicated formulas to define regulations pertaining to roof pitch and design. However, these formulas are often misused and result in the creation of awkward roof forms that do not reinforce the character of an area. As such, it is recommended that these formulas be avoided in the new zoning by-law.

See [Appendix B7. Roof Pitch and Design](#).

4.4.7 Parking Garages

Zoning by-law provisions that control parking garages and structures can be used in several different ways to influence building form and ensure new buildings fit into the surrounding context. Several zoning tools may be used to control parking including establishing minimum garage setbacks and/or maximum garage and garage door widths, eliminating the requirement for garages, allowing on-street, permitted parking, and requiring mid-rise and high-rise buildings with above grade parking to screen the parking with commercial, residential, or institutional uses (see Figure 10). See [Appendix B8. Parking Garages](#).

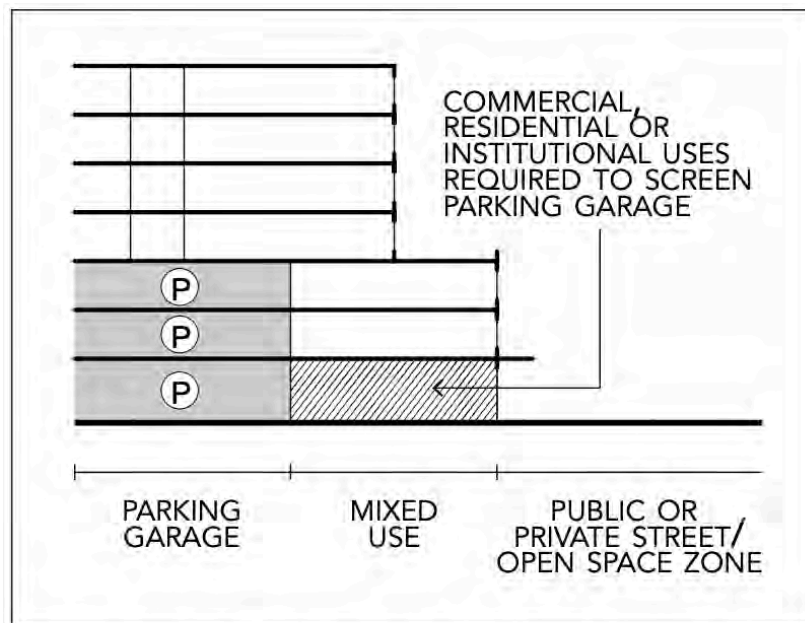


Illustration 6-1. Above Grade Parking Garage

Figure 10. Parking Garage Diagram (Source: Newmarket Urban Centres Zoning By-law 2018-48, 2018)

4.4.8 Building Frontage

The most important way a building engages with its surroundings and contributes to an existing neighbourhood's character and public realm is through its level of transparency at-grade. In particular, the number of doors and windows a building has facing the street influences how the surrounding pedestrian-environment is perceived. The use of glass and other transparent materials at-grade help to create a more pedestrian-oriented environment by increasing opportunities for casual surveillance ("eyes on the street") (see Figure 11 and Figure 12). This in turn increases perceptions of safety, thus making the public realm feel more welcoming.

While traditional zoning by-laws did not typically control aspects like a building's glazing or fenestration, newer form-based zoning by-laws utilize a number of tools to ensure a desirable built form is achieved. For instance the following zoning tools have been employed in form-based by-laws:

For Retail and Commercial Place Types:

- Requiring a certain percentage of the ground floor of a building that fronts a street to be composed of transparent glazing and feature active uses and living spaces at grade,
- Establishing a minimum solid to void ratio for front façades or any façade visible from the street, and
- Prohibiting street-facing blank walls.

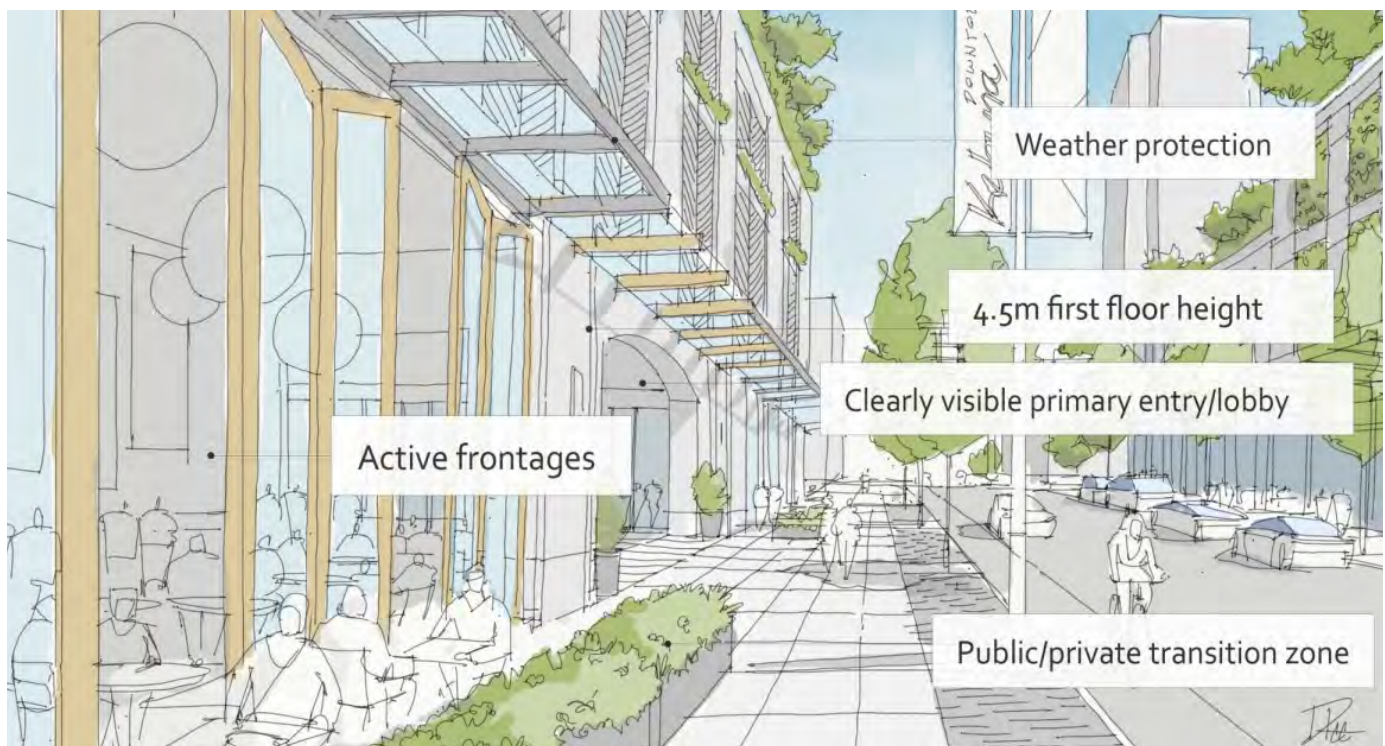


Figure 11. Relationship to the Street Diagram (Source: City of Kelowna 2040 Official Community Plan, 2021)

For Neighbourhood Place Types:

- Requiring a certain percentage of the ground floor of a building that fronts a street to be composed of transparent glazing and feature active uses and living spaces at grade, and,
- Requiring ground floor garages to occupy less than a certain percentage of a building's façade (e.g., 50%).



Figure 1: Treatment of the transition space between the public sidewalk and building interior reflects the differing needs for access and privacy between residential and commercial frontages.

Figure 12. Private-Public Transition Diagram (Source: City of Toronto Tall Building Design Guidelines 2013)

This page intentionally left blank.

PART III

5.0

THE NEW ZONING BY-LAW

The London Plan focuses on creating and reinforcing Place Types and on growing “inward and upward” to achieve a compact form of development. London’s new zoning by-law is moving towards a new structure that places more emphasis on building form and contextual fit than building use. This form-based zoning approach will ensure zoning tools are utilized to create desirable public spaces, a high-quality public realm, and predictable buildings that shape and reinforce *The London Plan’s* vision for each Place Type.

5.1 Form-Based Zoning

The London Plan supports the creation of a zoning by-law that uses physical form as the main organizing principle. The new London zoning by-law will therefore be conceived as a method for regulating development in a manner that achieves a specific urban form, based on the policies and aspirations of *The London Plan*.

The Consultant Team is recommending the use of a rural-to-urban transect to organize the new London zoning by-law (see Figure 13). A rural-to-urban transect is an ordering system that places all of the elements of the built environment in an easy-to-understand hierarchy that progresses from the most rural areas through to the most urban areas. Special Districts are used to capture parts of the built environment that do not fit within the traditional zones, such as industrial areas.



Figure 13. Transect Application to London's Place Types (Draft)

5.2 Zoning Tools and Place Types

Within this paper, an array of potential zoning tools that can be used to control the form of new development have been discussed. Other non-zoning tools to consider are detailed in [Appendix D2](#) and other form-related tools are provided in [Appendix D3](#). The majority of the zoning tools that were explored in this paper can be customized to shape new developments in any of London's 15 Place Types. However, identifying the most appropriate zoning tools to achieve each Place Type's specific intensity and form-related results requires additional study and fine-tuning. *Discussion Paper #6: Zoning in on Place Types* explores the most appropriate zoning approach to respond to each Place Type's specific challenges.

5.3 Building Types and Place Types

Permitted building types for each Place Type, independent of the uses within them, will need to be identified and prioritized. Following this, zoning provisions and tools will then be applied to each building type to ensure they are fine-tuned to reflect *The London Plan's* built form vision for each Place Type area.

This approach differs from a traditional zoning by-law where, for example, there might be a dozen or more distinct and separate residential use areas (i.e., R1, R2, R3). Herein, each residential use area may support a particular building type. In contrast, in a form-based by-law most transects permit a mix of uses and building types within a specified area. For instance, in a form-based by-law a permitted use may be defined as a "residential dwelling unit". As the form of a "residential dwelling unit" can vary, diverse building types may manifest within a designated area to support this use, including single detached, semi-detached, duplex, townhouse, stacked townhouse, fourplex, low-rise apartment, and mixed-use buildings. To ensure buildings fit within the context of the surrounding area, each building's appearance is regulated by the zoning by-law through intensity and form provisions.

At this stage of the ReThink Zoning project, it is important to begin to consider broad building type categories and how they relate to each Place Type. Amongst other elements, within many form-based codes the following are defined per building type:

- Lot size (i.e., minimum lot width and depth);
- Pedestrian access (i.e., where and how pedestrians exit and enter the building);
- Frontage;
- Vehicle access and parking;
- Intensity; and
- Form.

See [Appendix E1. Building Types and Place Types](#).

This page intentionally left blank.

6.0 **NEXT STEPS**

As the City of London continues to grow over the next several decades, ensuring that new development fits appropriately into the existing and planned context will require a careful balancing of three development-related elements: use, intensity, and form. *Discussion Paper #3: Zoning in on Existing Uses* examines use, and this discussion paper, *Zoning in on Intensification* has explored the relationships between zoning, intensity, and form.

In order to achieve the right balance among these elements, the next step for the Consultant Team is to gather feedback from the public on the discussion papers and further study each Place Type to test how various zoning tools can be used and calibrated to help create the places that are envisioned in *The London Plan*. The Transect approach will help to organize the testing and calibration, and will allow for fine-tuning of each tool to suit the specific needs of each Place Type.

Within the forthcoming *Discussion Paper #6: Zoning in on Place Types*, a specific approach to linking density permissions to community benefits will be identified, and the most appropriate approach to zoning for intensity in each Place Type will be determined. Further, following a comprehensive analysis, recommendations pertaining to which zoning tools should be adopted in each Place Type will be provided.

APPENDICES

Appendix A. Current State: Existing Conditions, Issues, and Strategies

Appendix A1. Existing Conditions

London's 1989 Official Plan applies intensity measures to land uses in defined geographic areas; it directs higher levels of intensity to the Downtown and areas designated as Multi-Family High Density Residential areas. Greater intensity is considered to be appropriate when specific criteria are met, such as frontage on a major road, proximity to major shopping areas, or institutional uses.

The 1989 Official Plan also addresses the issue of appropriate transitions by encouraging a "continuity and harmony with adjacent uses that are distinct and attractive". In higher density residential areas, applicants are required to "take into account surrounding land uses in terms of height, scale, and setback" and provide adequate buffering to protect lower density residential uses. Transitions in scale are encouraged, including decreases in intensity further from an activity node.

The City's Zoning By-law No. Z.-1 implements the policies of the 1989 Official Plan through site-specific zoning regulations. Intensity is primarily regulated through density (units per hectare) and building height (metres or storeys). The zoning by-law also utilizes lot coverage and gross floor area in certain base zones and often applies these policies to specific uses.

The 1989 Official Plan contemplates bonus zoning. However, due to recent changes to Ontario's *Planning Act*, this approach should be reassessed and reconsidered in the development of the new zoning by-law.

Appendix A2. Non-Residential Intensification Strategies

Reducing parking requirements can lead to a more efficient use of land and an improved urban landscape. For example, within London's Downtown, which is envisioned to have the tallest buildings and highest densities in the city, there are no minimum parking requirements for residential developments (LP 802). London's Zoning By-law Z.-1 does not require parking for existing and new residential developments in the Downtown, and this zoning tool may be appropriate to continue using in the new, comprehensive zoning by-law to encourage a compact, highly urban environment. As a result, land that may have been utilized for a surface parking lot or parking garage may be developed to include additional residential units, which has direct implications on the City's housing stock and housing affordability.

Density targets, which refers to either the minimum number of residents and jobs combined per hectare, units per hectare for residential uses, or a floor area ratio (FAR) for non-residential uses, encourage the more efficient use of land, resources, and infrastructure in new developments. By requiring a minimum level of intensity, a more compact form of growth is fostered. This in turn has the potential to help preserve more prime agricultural lands and reduce energy consumption, emissions, and other costs traditionally associated with sprawling development patterns.

For example, within the City of London, density targets have been established for Protected Major Transit Station Areas (PMTSAs). These areas are either serviced or planned to be serviced in the future by high quality and frequent transit that can provide convenient transportation to a large number of residents. For PMTSAs that are located in Transit Villages (which are planned to be developed as mixed-use neighbourhoods that support a healthy lifestyle and encourage the use of public transit), a minimum of 150 residents and jobs combined per hectare (LP 815B) and 45 units per hectare for residential uses, or a FAR of 0.5 for non-residential uses (LP 815D), is to be achieved. Due to the Transit Village's planned higher development intensity, residents can potentially live, work, and play in close proximity, reducing the need for travel by private car and reducing transportation-related emissions and congestion. Similarly, to ensure land is utilized efficiently within Industrial Place Types, high employment densities may be sought (LP 1124).

Regeneration strategies that encourage the re-purposing, reformatting, infill, and intensification of existing, non-residential buildings, in addition to the redevelopment of land at a higher than existing density, have many benefits. In *The London Plan*, the City recognizes the significant supply of sites that can accommodate commercial uses. To support a more efficient use of these lands, the Plan encourages Shopping Areas to be intensified through redevelopment, expansion, and/or the introduction of residential development (LP 876 and LP 878). In addition to seeking the benefits that come with intensification, the Plan encourages mid-rise residential development in Shopping Areas to promote activity outside of shopping hours and strengthen the Shopping Area's role as a neighbourhood centre (LP 876).

Appendix A3. Issues and Impacts Associated with the Form of New Development

Privacy

When larger, more intense forms of development are located next to smaller-scale buildings and properties, there is the potential that the larger building, because of its height, depth, location, and design features, will provide opportunities for overlook into neighbouring properties and have a negative impact on privacy.

The extent of this issue depends on the context and expectations. That is, in an area of detached, low-rise houses – outside of the Built Area Boundary – there is a higher expectation of privacy than there is within or close to the Downtown or a Transit Village where a detached house may be located adjacent to a site that is zoned for a higher intensity building.

Shadowing

The potential negative impact of larger developments casting shadows on adjacent properties is often separated into two categories: the shadowing of public spaces (such as parks and schoolyards) and the shadowing of private properties. Since shadows can be measured using computer modelling, they may be controlled using zoning tools such as maximum heights, stepbacks, and angular planes.

The London Plan does not include extensive policies dealing with shadows, but it does require high-rise buildings to be designed to minimize shadowing (LP 293): *High-rise buildings should be designed to minimize massing, shadowing, visual impact, and the obstruction of views from the street, public spaces, and neighbouring properties. To achieve these objectives, high-rise buildings should take the form of slender towers. High-rise buildings should not be designed with long axes where they create an overwhelming building mass.*

Visual Impact (Neighbourhood Character)

Visual impact can be a difficult concept to define, but it is typically used to describe a negative impact associated with a new building that does not visually fit in with, or reinforce, the character of the surrounding buildings. It is very closely related to the issue of “neighbourhood character” and contextual fit. If a new development is contextually appropriate, it can also be said that it does not have a negative visual impact on the area.

In relation to intensity, negative visual impact can result when building intensity is excessive, meaning the height, width, or scale is too large relative to the surrounding buildings. Excessive building intensity can result in a loss of human scale and cause buildings to be overwhelming when experienced at pedestrian level or from adjacent uses. With respect to built form, new buildings that have a different massing, roof-type, or relationship to the street can also have a negative impact on the surrounding context even if they are not substantially different from the surrounding buildings in terms of density or height.

With respect to the goal of having new development fit within the prevailing neighbourhood character, *The London Plan* emphasizes that new development does not have to mimic or be the same as development in the surrounding context. Rather, the intent is for the new development to be sensitive to, and compatible with, its context. It should be recognized that the context consists of existing development as well as the planning policy goals for the site and surrounding area (LP 1578).

The London Plan also states that built form will be designed to have a “sense of place” and “character consistent with the planned vision of the Place Type”, and that all proposals for new neighbourhoods will be required to establish a vision to guide planning for their character and sense of place. With respect to individual development proposals – both within existing and new neighbourhoods – the Plan requires that they articulate the neighbourhood’s character and demonstrate how the proposal has been designed to fit within that context.

Trees and Canopy Cover

As areas of the city intensify, new, larger buildings tend to occupy more of a development site, which in turn reduces the area of the site that is suitable for trees and landscaping. While zoning does not deal directly with trees, zoning tools can be used indirectly to help ensure that there is appropriate room on a development site to accommodate trees (including for example, appropriate soil depth over an underground parking garage).

Traffic and Access Management

Another set of potential intensification-related issues and impacts have to do with increased traffic and congestion, and the danger (or perception of danger) to pedestrians caused by increased traffic volumes. Of particular concern are increased numbers of vehicles crossing the public sidewalk to access parking and loading and garbage areas. Limiting the maximum gross floor area (GFA) for a specific development can limit activity intensity for a given use, and in turn, limit the traffic generated by the use. Reduced parking ratios or maximum parking provisions can limit the potential for traffic and access management issues by encouraging different modes of transportation and discouraging excess vehicles in and around a site.

Parking

The negative impacts associated with parking can be categorized under several different headings, including visual impacts of surface parking lots and driveways, safety impacts associated with both mid-rise and tall buildings that include above-grade parking with blank walls facing the public realm (no casual surveillance), and traffic impacts caused by overflow street-parking when on-site parking is not meeting the parking needs of the development.

In low-rise residential neighbourhoods, the main parking-related issues and impacts are often associated with the location and size of the parking garage in relation to the size of the lot and the house. Many older, established neighbourhoods have wider lots (35-50 ft or 10.7-15.2 m) and garages

were often located as detached structures to the side or the rear of the house, accessed either from a driveway along the side of the house or from a rear lane. With this pattern, parking was tucked away, out of site from the street, and therefore had minimal negative impacts. When larger lots are subdivided into two or more narrower lots for houses or townhouses, a number of parking-related issues arise that must be carefully controlled in order to meet landscape objectives and to ensure that new houses are not dominated by garage doors, which eliminate casual surveillance and “eyes on the street.” Allowing shared driveways between two abutting lots and/or mandating side-yard driveways (with appropriate setbacks) have the potential to prevent driveways and garages from dominating the front lawns and façades of low-rise neighbourhoods.

For larger townhouse and mid-rise developments, there is often a desire (for cost reasons) to locate parking at grade. Surface parking lots, according to *The London Plan*, should be located behind buildings and either not visible or screened from view from the street. For parking that is included within townhouse structures, a site layout issue occurs when parking is accessed via separate driveways for each unit. For narrow townhouses this can result in the front yards being devoted almost entirely to driveways, with little or no room for landscaping or trees.

With mid-rise and high-rise buildings, negative impacts can occur when London’s high water table makes the cost of underground parking prohibitive and all or some of the parking is therefore proposed to be located within a building, above grade. *The London Plan* requires above-grade parking to be screened from public view.

In Commercial and Industrial Place Types, zoning can be used to control the location of parking areas by, for example, requiring it to be located to the rear or side of buildings and to requiring setbacks to be met to ensure there is adequate room for landscaping and buffering where needed.

In summary, zoning deals with parking-related issues by establishing vehicle parking space provisions, including the number, type, and dimensions of spaces, the location of parking areas on the site or within a building, and how parking areas and garages are accessed. Controlling parking through zoning can effectively manage and shape site layout and building form to mitigate a number of intensification-related issues and impacts.

Noise, Emissions, Lighting, and Garbage

Industrial and commercial uses are often associated with heavy vehicles, waste generation, and other operational factors that cause excessive noise, odour, and garbage. Similarly, in dense, residential areas, these same issues may materialize due to a high population concentration. While zoning cannot directly regulate noise, emissions, lighting, and/or garage, there are several tools that can be used to mitigate their potential impacts, including setbacks (to provide separation distance), and landscaped open space, buffering, and fencing requirements. In addition, by regulating activity intensity through zoning tools like gross floor area (GFA) and floor area ratio (FAR), the adverse impacts of heavy operations can be further mitigated.

Impact on Servicing, Infrastructure, and Community Facilities

High levels of activity and building intensity may put pressure on the existing services, infrastructure, and community facilities of an area. This is especially true as the City of London intensifies “inward and upward” in support of the goals and aspirations of *The London Plan*.

Prior to approving new development, the City must be certain infrastructure and servicing have the capacity to cope with higher levels of intensification or that funds are available to undertake the necessary growth work. Additionally, sufficient community facilities such as recreation areas, schools, and health services need to be available for use by both new and existing residents. Both activity and building intensity can be managed through zoning tools to ensure adequate servicing and facilities are available. These zoning tools include: units per hectare, gross floor area (GFA), and floor area ratio (FAR). Non-zoning tools, such as site plan approval and holding provisions, can be utilized alongside the aforementioned zoning tools to ensure the population’s needs are met prior to final approvals.

Lands Needs Management

Intensity levels can influence where and how a city grows. Encouraging intensity at strategic locations within the existing built-up area, such as within Transit Village Place Types and along Rapid Transit Corridors, can limit the need for horizontal expansion, decreasing pressure on a city to expand its urban boundaries. Zoning tools, such as units per hectare, height, and FAR can be employed to direct intensity to specific places, per *The London Plan*, to avoid the potential undesirable expansion of the urban boundary in the future.

Accommodating additional intensity in strategic locations will also assist in managing issues related to housing affordability. Housing affordability issues can arise where there is a limited supply of new housing, often resulting from a lack of intensity (see *Discussion Paper #4: Zoning in on Housing Affordability*).

Loss of Light (ambient and direct)

In areas of the city that are intensifying, there is an increased chance that a proposed, more intense development may reduce the amount of light reaching the windows and entering the interior of adjacent and nearby buildings. This is not just a shadow-related issue dealing with direct access to sunlight, but also an ambient light issue.

More intense Place Types, which anticipate larger mid-rise and high-rise buildings in close proximity to one another, are more likely to experience access to light issues. While many municipalities include access to light as a policy objective of their official plan, very few have attempted to measure and quantify exactly what light levels are acceptable and how they should be measured. Modelling tools are now being developed to measure the ambient light impacts of new development on adjacent buildings. Access to these types of studies, and their associated parameters, is expected to increase in the near future.

Safety (“Eyes on the Street”)

The London Plan states that all new development will support pedestrian activity and safety by, for example, prohibiting large expanses of blank walls along the street edge, achieving human-scale relationships that are comfortable for pedestrians, and having active frontages (LP 284-300). Intensification, however, can sometimes result in new development that creates unsafe conditions due to a lack of casual surveillance opportunities. For example, when houses or townhouses are permitted on narrow lots with front-facing garages, the garage may occupy most of the front façade of the home that faces the street. As a result, visibility of the street from the home is limited, thereby preventing casual surveillance (i.e., “eyes on the street”).

Blocked Views and Skyviews

It is generally accepted that residents have no right to a view from a private building or structure unless a municipality’s official plan specifically identifies a protected view corridor. Although *The London Plan* does not establish protected view corridors, it does indicate that preserving certain views should be considered, such as those of natural features and/or landmarks (LP 204 and 257) and those of a designated heritage attribute (LP 559). Although private views cannot be explicitly protected by the zoning by-law, zoning tools can be used to ensure adequate building separation as a means of preserving access to what is often referred to as “skyview” (the ability to see views of the sky between buildings).

Wind

High-rise towers, depending on their location, height, and orientation, have the potential to “catch” strong wind gusts and redirect them down the face of the building. This in turn impacts pedestrian comfort at street level. Wind impacts may be tested through physical context models in a wind tunnel or through computer modeling. The form of a building can influence wind conditions in its immediate area and thus it is important that zoning tools be used to mitigate negative wind impacts. Tools such as building setbacks can prevent wind from travelling straight down a building face, while landscaping and tree requirements can help weaken wind gusts at-grade.

Appendix B. Methodology and the Role of Zoning in Intensification

Appendix B1. Methodology

In creating this discussion paper, the Consultant Team undertook the following steps:

- Participated in virtual and in-person tours of London to gain a deeper understanding of the city's layout, existing built form and intensity of development, and *The London Plan's* Place Types;
- Reviewed *The London Plan's* intensification and form-related policies;
- Identified and defined the main intensification-related issues and impacts affecting development in London;
- Reviewed recent developments and development applications, with an awareness of The London Plan's Place Type boundaries, to get a sense of contextual fit and transition, and to assess what is working and what is not;
- Reviewed the zoning tools used by the City of London to control intensification and built form to assess which tools are effective and which are not;
- Analyzed zoning tools that are being used in other jurisdictions in Ontario to regulate intensification;
- Reviewed traditional and non-traditional zoning concepts and tools that may be used in London;
- Identified the most effective zoning tools that the City of London can use to achieve a contextual fit for built form in all Place Types;
- Identified other potential tools (e.g., severances, plans of subdivision) that facilitate increased intensity and tools (e.g., policies, guidelines, programs) that can be used to help ensure a contextual fit for built form where zoning tools are not feasible or appropriate; and
- Explored ways to fine-tune zoning tools so they can be used in an effective and efficient manner to achieve the goals for the Place Types in *The London Plan*.

Appendix B2. Understanding the Role of Zoning in Intensification

The London Plan provides several planning measures to help implement its Place Type policies. Intensity measures, which include height, gross floor area (GFA), coverage, floor plate area, density in units per hectare, number of bedrooms, parking, and floor area ratio (FAR) (LP 753), shape development (to manage growth) in pursuit of fulfilling the City of London's vision and key directions (LP 789).

Minimum heights are identified in *The London Plan* for reasons of function and form as follows:

1. Function, to ensure that development is of an intensity that will support *The London Plan's* goals, including rapid transit, efficient use of land, infrastructure, and services, and promoting a mixed-use form of development, and
2. Form, to create an urban form that is supportive of each Place Type's vision and to set the physical context for more intense forms of development. The street edge of the highest-order streets are to be prioritized for height (LP 792).

Permitted Intensity

- Among the Urban Place Types defined in *The London Plan*, the tallest buildings and highest densities are permitted first in the Downtown, followed by Transit Villages (which include PMTSAs with minimum residential and non-residential density targets).
-
- Rapid Transit Corridors, which connect the Downtown and Transit Villages, and the Institutional Place Type, which encompasses major institutions (i.e., universities, colleges, hospitals, and research centres), support moderate intensity.
-
- Urban Corridors, Shopping Areas, and Main Streets, which often act as neighbourhood hubs and contain a mix of residential and commercial uses, permit less intensity.
-
- Among all of the Place Types, the Industrial Place Type is planned to have the lowest intensity of development.
-
- For Neighbourhoods and the High Density residential overlay, the permitted intensity varies, dependent upon the street classification that the property fronts onto, as well as other factors (LP 789).

To support *The London Plan's* target of achieving a minimum of 45% of all new residential development within the city's Built-Area Boundary (LP 81), intensification is permitted in all Place Types that allow for residential uses (LP 84). To ensure intensification is facilitated in a manner that implements the key directions of *The London Plan* while maximizing positive outcomes, intensification is promoted in appropriate locations and in a way that is sensitive to existing neighbourhoods and represents a "good fit" (LP 83).

The London Plan allows for intensification through:

- Additional residential units;
- Building expansion (i.e., accommodating greater residential intensity);
- Adaptive re-use (i.e., converting existing non-residential buildings for residential use);
- Infill development (i.e., building new development on vacant and underutilized lots);
- Severance (i.e., subdividing existing lots); and,
- Higher density redevelopment (i.e., building new development at a higher than existing density on developed lands).

Informed by the Place Types chapter of *The London Plan* (and particularly Tables 8, 11, and 12), permitted height and intensity policies for each Urban Place Type are summarized in [Appendix C1](#), with the exception of the Neighbourhoods Place Type, which is provided in [Appendix C2](#). Please note that several of *The London Plan's* policies are currently under appeal and subject to change (Local Planning Appeal Tribunal (now the Ontario Land Tribunal), Appeal PL170100).

Appendix B3. Building Orientation

In low-rise areas, building orientation primarily concerns how buildings address the street. For instance, front façades may be arranged parallel to the street and front property line or at a specific angle. In low-rise residential neighbourhoods, requiring new buildings to maintain the prevailing building orientation is important for establishing good contextual fit. For mid-rise buildings, and the base of high-rise buildings, building orientation also considers whether the longer façade is arranged parallel or perpendicular to the front property line. For high-rise buildings, tower orientation is another important consideration. As a rule of thumb, reinforcing the prevailing building orientation pattern in an area helps with contextual fit, while introducing a new orientation typically only works for landmark buildings, which are intended to stand out from the prevailing pattern.

Appendix B4. Landscaping, Open Space, and Buffering Tools

In low-rise residential areas, the lawns and gardens surrounding individual houses often work together to create a “neighbourhood landscape”. To control the amount of landscaped area on a lot, a combination of zoning tools may be used including setback, coverage, and minimum landscape requirements. Other zoning tools can also be used to reserve areas of a site for landscaping and to restrict the total area of a site that can be paved (e.g., for driveways, walkways, and hard-surface patios). In doing so, proper drainage and groundwater infiltration on-site can be secured to meet flood protection and/or wet weather flow standards.

In mid-rise and high-rise areas, depending on the Place Type and the level of intensity that is permitted, the amount of required landscaping and open space can vary widely. In areas that are intensifying and where buildings are permitted to occupy a large percentage of the site, it is extremely important to make a distinction between “softscaped” areas, which support plantings (e.g., grass, flowers, shrubs, and trees), and “hardscaped” open space areas, which are reserved for patios and courtyards. Amongst other things, zoning tools can be used to set soil depth and volume requirements, and regulate the percentage of a site that cannot be paved or the area of a site that must be landscaped. Often, minimum required landscape area provisions for a site are of a size that supports buffer landscaping like canopy trees and shrubs; in supporting plantings of this size, issues pertaining to privacy and overlook may be easily mitigated through natural interventions.

It should be noted that within older neighbourhoods, buildings and their associated parking and loading areas often occupy a large percentage of their site. As a result, little room is reserved for landscaping and open space, resulting in drainage challenges. Green roof regulations may be established by a municipality to help combat these challenges; however, these types of regulations are not typically a component of a zoning by-law. Nonetheless, they can aid the City in meeting environmental and sustainability objectives, such as lowering the heat island effect.

All in all, there are several zoning tools that may be used to control landscaping and open space allocations on a site including:

- Setbacks and build-to lines that require a certain percentage of a building’s façade to be built on, or a specified distance from, property lines;
- Building coverage maximums;
- Landscaping or open space minimums (i.e., as a percentage of lot size);
- Established tree planting areas with minimum soil volumes;
- Perimeter landscape buffering requirements; and,
- Setting maximum driveway dimensions (i.e., maximum width limit of a paved area as a percentage of lot size).

Appendix B5. Vehicular Access and Parking Location Tools

In low-rise residential neighbourhoods, the location of garages and driveways, as well as driveway width and length, have an impact on the look and feel of the site and the surrounding area. As sites become narrower, garages and driveways tend to dominate the front yards and the front façades of houses, which in turn negatively impacts neighbourhood character. In some areas of London, garage access is via a rear laneway. This can solve many parking-related issues; however, London does not have an extensive rear laneway network. Additionally, in many cases the laneways are unassumed and consequently not maintained or plowed in the winter. Encouraging rear lanes as part of new neighbourhood developments and improving existing laneway networks can help reduce parking and access challenges in low-rise neighbourhoods.

In mid-rise and high-rise areas, the location and size of driveways that provide access to parking, pick-up, drop-off, and loading areas impact the look and feel of a development. *The London Plan* speaks to creating a sense of place and reinforcing neighbourhood character in part by requiring vehicles to access a site from less busy streets (e.g., from a local street rather than an arterial roadway). Using zoning tools, the widths of parking entrances and garage door heights can be regulated, and limitations on the types of loading spaces and way in which garbage is stored on-site can be established to better control parking and vehicle access. Additionally, with the growth of the online economy and ecommerce resulting in more home deliveries, on-site solutions to increase short-term parking provisions are important. For instance, temporary parking spaces for delivery vehicles and ride-hail services may be set by the zoning by-law.

Potential zoning tools that can be used to control vehicle access include:

- Restrictions on the number of permitted curb cuts;
- Restrictions on driveway width and location;
- Restrictions on underground garage parking openings;
- Clear rules about the type of loading spaces required and how large they can be;
- Pick-up and drop-off area requirements;
- Bicycle access regulations; and,
- Requiring lots with rear lanes to provide parking access from the rear lane.

Potential zoning tools that can be used to control parking location and size on a site include:

- Requiring minimum setbacks for parking areas to ensure parking is located behind or beside buildings;
- Requiring a minimum percentage of the lot to be landscaped open space;
- Requiring landscape buffering and screening around parking areas;
- Requiring new developments to provide parking access from a centralized driveway;
- Limiting the number of curb cuts and access points; and,
- Establishing maximum building coverage provisions.

Appendix B6. Stepbacks and Building Scales

Stepbacks can be employed effectively at all building scales. In low-rise residential neighbourhoods that are intensifying and beginning to permit more intense housing types, stepbacks may be used to ensure appropriate transitions between higher and lower intensity areas. This results in the scale of new development reflecting that of existing development on the other side of a shared property line. In turn, this reduces the potential shadowing and overlook impacts of the new development.

For mid-rise buildings, stepbacks can be employed along front property lines, especially along commercial streets, to assist with meeting performance measures such as those that ensure sunlight touches the sidewalk on the opposite side of the street for a specified period of time during a day (e.g., between 11 a.m. and 3 p.m. from March 1st to June 21st). Further, as with low-rise residential neighbourhoods, along side and rear property lines stepbacks can be used to ensure the scale of buildings on adjacent properties are similar to reduce shadowing and overlook impacts.

High-rise buildings may use stepbacks at their base in the same way stepbacks are used by mid-rise buildings. The tower portion of a high-rise building may be required to have large stepbacks from the walls of the tower's base that abut lower intensity developments. In doing so, a good transition in built form can be achieved and a tall building's "hover factor" can be reduced (i.e., by increasing the separation distance between a lower intensity development and a tower, the tower will have less perceived presence and subsequently not appear to "hover" over an existing development).

In regard to tower-podium tall buildings, many municipalities require the tower portion of the building to stepback from the front property line and rear or side property line at a minimum of 1.5 m to 5 m and 10 m to 20 m, respectively, adjacent to low-rise residential areas. Specific setback distances are calibrated to suit the site's context. Generally, the greater the difference in building intensity and massing on either side of a property line, the greater the stepback required to achieve a good transition in built form.

Appendix B7. Roof Pitch and Design

For low-rise areas, the most important aspect of roof design is the massing of the area between the eaves line and the top of the roof. It is possible for flat roof buildings to be located harmoniously next to pitched roof buildings, so long as the eaves lines and top of roof height closely match, and the livable area above the eaves line is setback the same distance from the property lines. For example, it is possible for a 2½-storey pitched roof house with dormer windows to be compatible with a 3-storey flat roof house where the livable area above the eaves line stepsback and occupies the same area as the top story of the pitched roof house. In this example the roof design differs, but the overall bulk, massing, and height of the two structures are very similar.

To allow for different roof designs that can fit harmoniously together, it is important to establish the following using a variety of zoning tools:

- An overall building height limit that is measured to the top of the eaves line, not the top of the roof;
- A required stepback and floorplate size, based on a percentage of the floor below (e.g., 50%), where partial storeys are permitted above the eaves line;
- A clear rule pertaining to where height is measured from (e.g., average grade at the midpoint of the front property line) to prevent developers from manipulating the grading of a site to secure additional building height; and,
- Setbacks for dormers or walls above the eaves line.

Appendix B8. Parking Garages

As areas intensify, lots and buildings tend to become narrower. Due to space restrictions, on narrower lots, garages become a part of the main structure of a building. As a result, large portions of the main floor of a building may be occupied by a garage, which then forces active living spaces to higher levels. Zoning tools may be used to regulate parking garage design to ensure new buildings reflect the existing context. These tools include, but are not limited to:

- Establishing minimum garage setbacks (e.g., expressed as a minimum number in metres behind the front façade of a house);
- Establishing maximum garage and garage door widths (e.g., expressed as a maximum number in metres or as a percentage of the front façade);
- Establishing a maximum percentage of the ground floor that can be occupied by a garage;
- Ensuring garage areas are included as part of a building's GFA;
- Eliminating the requirement for garages (i.e., remove parking requirements);
- Allow on-street, permitted parking, combined with a no on-site parking requirement;
- Require parking to be accessed from a rear lane when one exists;
- Require above-grade parking within a building to be lined with active uses where it is visible from the public realm; and,
- Ensuring above-grade parking is included within a building's envelope and included as part of the building's GFA.

Appendix C. *The London Plan* and Zoning

Appendix C1. Permitted Height and Density within each Urban Place Type.

This appendix presents the permitted heights and densities for each Urban Place Type in *The London Plan*. The Urban Place Types include the Downtown, Transit Village, Rapid Transit Corridor, Urban Corridor, Shopping Area, Main Street, High Density Residential Overlay, Institutional, and Industrial Place Types. Table C1 presents the minimum height (in storeys and/or metres); the standard minimum height (in storeys); any height conditions; minimum density policies for Protected Major Transit Station Areas (PMTSAs); and the general intensity-related policies for each Urban Place Type.

Table C1. Permitted Height and Density within each Urban Place Type

Permitted Height and Density within each Urban Place Type					
Place Type	Min. Height	Standard Min. Height	Height Conditions	PMTSA Min. Density	Intensity Policies in <i>The London Plan</i>
Downtown	3 storeys or 9 m	20 storeys		280 residents and jobs combined per hectare. 60 units per hectare for residential uses or a FAR of 0.6 for non-residential uses.	LP 802: The Downtown will permit the tallest buildings and the highest densities in the city. The following intensity policies apply within the Downtown Place Type: <ol style="list-style-type: none"> 1. Buildings within the Downtown Place Type will be a minimum of either three storeys or nine metres in height and will not exceed 20 storeys in height. 2. Tall buildings will be permitted only where they achieve a high level of design excellence in conformity with the City Design policies and in accordance with associated guidelines of this Plan. 3. The evaluation of height and built form will consider access to sunlight by adjacent properties, wind impacts, view corridors, visual impacts on the Thames Valley Corridor, and potential impacts on public spaces and heritage properties located in close proximity to proposed development. 4. There will be no minimum parking required for Downtown residential development. 5. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 6. The full extent of intensity described above will not necessarily be permitted on all sites within the Downtown Place Type.

<p>Transit Village</p>	<p>2 storeys or 8 m</p>	<p>15 storeys</p>		<p>150 residents and jobs combined per hectare.</p> <p>45 units per hectare for residential uses or a FAR of 0.5 for non-residential uses.</p>	<p>LP 810*: The following intensity policies apply within the Transit Village Place Type:</p> <ol style="list-style-type: none"> 1. Buildings within the Transit Village Place Type will be a minimum of either two storeys or eight metres in height and will not exceed 15 storeys in height. 2. Planning and development applications within the Transit Village Place Type will be evaluated to ensure that they provide for an adequate level of intensity to support the goals of the Place Type, including supporting rapid transit, efficiently utilizing infrastructure and services, ensuring that the limited amount of land within this Place Type is fully utilized, and promoting mixed-use forms of development. 3. Permitted building heights will step down from the core of the Transit Village to any adjacent Neighbourhoods Place Types. 4. For larger scale projects on deep lots, a grid-based internal road network should be established to facilitate further development/redevelopment over time. 5. In aggregate, no more than 20,000 m² of office space will be permitted within any Transit Village Place Type. Individual buildings will not contain more than 5,000 m² of office space. 6. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 7. The full extent of intensity described above will not necessarily be permitted on all sites within the Transit Village Place Type. <p>*Policy subject to LPAT Appeal PL170100.</p>
------------------------	-------------------------	-------------------	--	--	---

Rapid Transit Corridor	2 storeys or 8 m	8 storeys	Properties located on a Rapid Transit Corridor.		<p>LP 840*: The following intensity policies apply within the Rapid Transit and Urban Corridor Place Types unless otherwise identified:</p> <ol style="list-style-type: none"> 1. Development within Corridors will be sensitive to adjacent land uses and employ such methods as transitioning building heights or providing sufficient buffers to ensure compatibility. 2. Commercial buildings should not exceed 6,000 m² in size within Corridors. 3. Lot assembly is encouraged within the Corridor Place Types to create comprehensive developments that reduce vehicular accesses to the street and to allow for coordinated parking facilities. 4. Lots will be of sufficient size and configuration to accommodate the proposed development and to help mitigate planning impacts on adjacent uses. 5. Individual buildings will not contain more than 2,000 m² of office space, except within 100 metres of rapid transit stations where buildings may contain up to 5,000 m² of office space. An aggregate total of no more than 5,000 m² will be allowed within 100 metres of a rapid transit station. 6. As shown on Table 9, greater residential intensity may be permitted within the Rapid Transit Corridor Place Type on sites that are located within 100 metres of a rapid transit station. 7. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 8. The full extent of intensity described above will not necessarily be permitted on all sites within the Rapid Transit and Urban Corridor Place Types. <p>*Policy subject to LPAT Appeal PL170100.</p> <p>Note that intensity policies differ for Main Street, Preservation, and Transitional Urban Corridors, as outlined in <i>The London Plan</i>.</p>
	2 storeys or 8 m	12 storeys	Properties located on a Rapid Transit Corridor within 100 m of rapid transit stations or properties at the intersection of the Rapid Transit Corridor and Civic Boulevard or Urban Thoroughfare.	<p>120 residents and jobs combined per hectare.</p> <p>45 units per hectare for residential uses or a FAR of 0.5 for non-residential uses.</p>	
Urban Corridor	2 storeys or 8 m	6 storeys			

Shopping Area	1 storey	4 storeys			<p>LP 878: The following intensity policies apply within the Shopping Area Place Type:</p> <ol style="list-style-type: none"> 1. It is the intent of this Plan to allow for the more intense and efficient use of Shopping Area sites through redevelopment, expansion, and the introduction of residential development. 2. Buildings within the Shopping Area Place Type will not exceed four storeys in height. 3. Adequate off-street parking will be provided to ensure there are no negative impacts on adjacent streets. Underground parking will be encouraged. 4. Development within the Shopping Area Place Type will be sensitive to adjacent land uses and employ such methods as transitioning building heights and providing sufficient buffers to ensure compatibility. 5. Lots will be of sufficient size and configuration to accommodate the proposed development and to help mitigate planning impacts on adjacent uses. 6. Total aggregate office uses will not exceed 2,000 m² within a Shopping Area Place Type. 7. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 8. The full extent of intensity described above will not necessarily be permitted on all sites within the Shopping Area Place Type.
---------------	----------	-----------	--	--	---

Main Street	2 storeys or 8 m	4 storeys			<p>LP 910: The following intensity policies will apply within the Main Street Place Type:</p> <ol style="list-style-type: none"> 1. Buildings in Main Street Place Types will be designed to fit in scale and character with the surrounding streetscape, while allowing for appropriate infill and redevelopment. 2. Buildings in the Main Street Place Types that are in new neighbourhoods will fit in with the planned vision, scale, and character of the area. 3. Large floor plate commercial buildings will not be permitted. 4. Buildings will be a minimum of either two storeys or eight metres in height and will not exceed four storeys in height. 5. Individual buildings will not contain any more than 2,000 m² of office space. 6. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 7. The full extent of intensity described above will not necessarily be permitted on all sites within the Main Street Place Type.
-------------	------------------	-----------	--	--	--

Neighbourhood	See Appendix F			<p>LP 935: The following intensity policies will apply within the Neighbourhoods Place Type:</p> <ol style="list-style-type: none"> 1. Table 11 – Range of Permitted Heights in Neighbourhoods Place Type, provides the range of permitted heights in the Neighbourhoods Place Type, based on street classification. 2. Floor area limits for retail, services, and offices uses are shown on Table 12 -Retail, Service, and Office Floor Area Permitted in Neighbourhoods Place Type. 3. Zoning will be applied to ensure an intensity of development that is appropriate to the neighbourhood context, utilizing regulations for such things as height, density, GFA, coverage, frontage, minimum parking, setback, and landscaped open space. 4. The full extent of intensity described above and shown on Table 11 will not necessarily be permitted on all sites within the Neighbourhoods Place Type. 5. Specific Policies for the Neighbourhoods Place Type, at the end of this chapter, may not permit the full range of intensity.
High Density Residential Overlay (from 1989 Official Plan)	2 storeys	12 storeys	See High Density Residential Overlay (from 1989 Official Plan) policies for greater detail.	<p>LP 958*: Notwithstanding the height and intensity policies of the underlying Place Type, the following overlay policies may be applied:</p> <ol style="list-style-type: none"> 1. Inside the Primary Transit Area, residential development may be permitted up to 12 storeys in height within the High Density Residential Overlay (from 1989 Official Plan). 2. Outside the Primary Transit Area residential development may be permitted up to 12 storeys in height and at a density of up to 150 units per

				<ol style="list-style-type: none"> 3. On large sites or areas within the High Density Residential Overlay (from 1989 Official Plan), capable of accommodating multiple buildings, a diversity of housing forms such as mid-rise and low-rise apartments and multiple attached dwellings will be required. 4. Zoning may not allow for the full range of height and density identified in these policies. 5. Where Specific Policies are established for lands within the High Density Residential Overlay (from 1989 Official Plan), and there is a conflict between those policies and the parent High Density Residential Overlay (from 1989 Official Plan) policies, the Specific Policies shall prevail. 6. New or expanded High Density Residential Overlay (from 1989 Official Plan) designations will not be permitted. <p>*Policy subject to LPAT Appeal PL170100.</p>
Institutional	2 storeys or 8 m	12 storeys		<p>LP 1086: The following intensity policies will apply within the Institutional Place Type:</p> <ol style="list-style-type: none"> 1. Buildings within the Institutional Place Type will be a minimum of either two storeys or eight metres in height and will not exceed 12 storeys in height. 2. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 3. The full extent of intensity described above will not necessarily be permitted on all sites within the Institutional Place Type.

Industrial	1 storey	2 storeys	Commercial Industrial Place Type only.		<p>LP 1124: The following intensity policies apply within all Industrial Place Types:</p> <ol style="list-style-type: none"> 1. Industrial uses will be encouraged to utilize land efficiently. High building coverage ratios and high employment densities will be sought wherever possible. 2. The intensity of industrial uses may be moderated by zoning regulations, where appropriate, to limit the extent of their noise, vibration, dust, and odour emissions. 3. Height within the Commercial Industrial Place Type will not exceed two storeys. 4. Accessory office uses will not be limited in size provided they meet the definition of accessory office. 5. Service offices will be no larger than 2,000 m². 6. The Zoning By-law will include regulations to ensure that the intensity of development is appropriate for individual sites. 7. The full extent of intensity described above will not necessarily be permitted on all sites within the applicable Industrial Place Type.
------------	----------	-----------	--	--	--

Notes:

- Primarily informed by Table 8 of *The London Plan*.
- The heights and intensity measures shown in the above table will not necessarily be permitted on all sites within the relevant Place Type as site-specific policies may be in-force.
- Where more specific policies exist in *The London Plan* relating to height or intensity for an area or specific site, the more specific policies prevail.

Appendix C2. Permitted Intensity for the Neighbourhood Place Type

This appendix presents a summary of the intensity that is permitted in the Neighbourhoods Place Type. Table C2 presents the range of permitted heights and retail, service, and office floor area permissions for a property, conditional upon the classification of the street the property has frontage on, the classification of the intersecting street, and whether the property fronts onto a park.

Table C2. Permitted Intensity for the Neighbourhood Place Type

Permitted Intensity for the Neighbourhood Place Type							
	Street onto which Property has Frontage	Minimum and Maximum Height (storeys) that may be permitted along this Classification of Street (base condition)	Minimum and Maximum Height (storeys) that may be permitted conditional upon Classification of Intersecting Street				Minimum and Maximum Height (storeys) that may be permitted conditional upon Fronting onto Park
			Neighbourhood Street	Neighbourhood Connector	Civic Boulevard	Urban Throughfare	Fronting onto Park
Range of Permitted Heights	Neighbourhood Street	Min. 1 Max. 2.5	Same as base				
	Neighbourhood Connector	Min. 1 Max. 2.5	Same as base		Min. 2 Max. 3		
	Civic Boulevard	Min. 2 Max. 4	Same as base				
	Urban Throughfare	Min. 2 Max. 4	Same as base				

Permitted Intensity for the Neighbourhood Place Type							
	Street onto which Property has Frontage	Maximum Floor Area that may be permitted along this Classification of Street	Maximum Floor Space Area that may be permitted conditional upon Classification of Intersecting Street				Maximum Floor Area that may be permitted conditional upon Fronting onto Park
			Neighbourhood Street	Neighbourhood Connector	Civic Boulevard	Urban Throughfare	Fronting onto Park
Retail, Service, and Office Floor Area Permissions	Neighbourhood Street	N/A	N/A				
	Neighbourhood Connector	N/A	N/A	Total at intersection: 200 m ²		200 m ²	
	Civic Boulevard	N/A	N/A	Total at intersection: 200 m ²	Total at intersection: 2000 m ²	N/A	
	Urban Throughfare	N/A	N/A	Total at intersection: 200 m ²	Total at intersection: 2000 m ²	N/A	

Notes:

- Reproduction of Table 11 and Table 12 from *The London Plan*, currently under appeal.
- The heights and intensity measures shown in the above table will not necessarily be permitted on all sites within the relevant Place Type, as site-specific policies may be in-force.
- Where more specific policies exist in *The London Plan* relating to height or intensity for an area or a specific site, the more specific policies prevail.

Appendix C3. How the New Zoning By-law Can Support *The London Plan*

As per *The London Plan*, the City's new zoning by-law may be used to regulate the type of construction and the height, bulk, location, size, floor area, spacing, character and use of buildings or structures to be erected, the minimum frontage and depth of the parcel of land, and the proportion of the area thereof that any building or structure may occupy (LP 1635.7). It may also regulate the minimum area of the parcel of land, the minimum and maximum density, and the minimum and maximum height of development (LP 1635.10). Amendments to the zoning by-law may be made, such as in the case that it is determined that the assumptions and conditions on which the regulations are based have changed to the extent that regulations are no longer appropriate, or existing regulations need to be refined as a result of further study (LP 1636).

Critical to the success of the London zoning by-law's regulations is their ability to encourage the positive outcomes associated with growth and development. The intensification policies of *The London Plan* direct the City to achieve a compact, contiguous pattern of growth that looks inward and upward (LP 59.2) to:

- Foster the development of vibrant, connected, and walkable neighbourhoods that are designed to support healthy lifestyles;
- Revitalize existing urban neighbourhoods and business areas;
- Protect prime agricultural lands; and
- Increase accessibility to mobility alternatives and affordable housing.

Further, a very compact form of growth has the potential to reduce infrastructure and annual operating costs, and lower greenhouse gas emissions and energy consumption. This is achieved through a development approach that plans for infill and intensification of various types and forms to efficiently use existing land, services, and facilities, and reduce the need to grow outward (LP 59.4). Importantly, to enhance the walkability of a neighbourhood and generate pedestrian activity, a mix of uses in close proximity to one another should be supported (LP 59.6) and a range of housing types should be provided (LP 59.5).

In concentrating high-intensity, mixed-use development in strategic locations that are well-served and supported by higher-order transit, such as Transit Villages and along Rapid Transit Corridors, dependence on private automobile use is decreased. This in turn encourages the use of alternative forms of transportation, such as public transit, walking, and cycling. In reducing automobile dependence, and consequently use, significant economic, health, and environmental benefits are gained by individuals and the region as a whole. Lower vehicular congestion and pollution emissions improve the health and well-being of the community and reduce costs associated with energy and fuel use and consumption. Further, in neighbourhoods where automobiles are not the dominant form of transport, space that is traditionally reserved for auto-oriented infrastructure, such as parking lots or additional

lanes of traffic, may be reallocated to the public realm and/or other uses. As a result, establishing density targets and reduced minimum parking requirements supports the achievement of the City's intensification goals.

Moreover, buildings with a more compact shape and massing than other built forms have the potential to reduce energy loads. Consequently, the range of proportions for high-rise buildings is an important consideration for the City's new zoning by-law from an environmental design and climate mitigation and adaptation perspective.

Appendix C4. *The London Plan* and Character

The London Plan states that buildings will be designed to have a sense of place and character consistent with the planned vision of the Place Type (LP 197). The Plan goes on to state that all planning and development proposals within existing and new neighbourhoods will be required to articulate the neighbourhood's character and demonstrate how the proposal has been designed to fit within that context (LP 199).

In terms of site layout aspirations that can be controlled either directly or indirectly using a variety of zoning tools, *The London Plan* promotes sites that are designed to, amongst other things:

- Respond to the context of the existing and planned character of the surrounding area;
- Minimize and mitigate impacts on adjacent properties;
- Locate and configure parking areas to support the planned vision of the Place Type and enhance the experience of pedestrians, transit-users, cyclists, and drivers (LP 270-283); and
- Locate buildings to:
 - Maintain and reinforce the prevailing street wall or street line of existing buildings,
 - Provide minimal setbacks from public streets and public spaces to create an inviting, active, and comfortable pedestrian environment, and
 - Minimize the visual exposure of parking areas to the street (LP 252-269).

In terms of building design and built form issues that can be controlled either directly or indirectly using a variety of zoning tools, *The London Plan* promotes buildings that are designed to, amongst other things:

- Support the planned vision of the Place Type and establish character and a sense of place for the surrounding area;
- Support pedestrian activity and safety (e.g., prohibiting large expanses of blank wall along the street edge);
- Achieve human-scale relationships that are comfortable for pedestrians;
- Have heights that have a proportional relationship to the width of the abutting public right-of-way to achieve a sense of enclosure;
- Establish an edge, definition, and a sense of enclosure to public spaces;
- For mid-rise and high-rise buildings, express three defined components: a base, middle, and top;
- Incorporate a podium at the building base of high-rise buildings to reduce the apparent height and mass of the building on the pedestrian environment;
- Have slender towers to minimize massing, shadowing, visual impact, and the obstruction of views from the street, public spaces, and neighbouring properties;
- Have active frontages;
- Minimize the impact of parking facilities on the public realm; and,
- Incorporate design measures relating to building height, scale, and massing to provide a transition between development of significantly different intensities while considering the existing and planned context (LP 284-300).

Appendix C5. Evaluation Criteria for Planning and Development Applications

The London Plan provides evaluation criteria for planning and development applications (LP 1578), as follows:

All planning and development applications will be evaluated with consideration of the use, intensity, and form that is being proposed. The following criteria will be used to evaluate all planning and development applications:

... 7. The degree to which the proposal fits within its context. It must be clear that this is not intended to mean that a proposal must be the same as development in the surrounding context. Rather, it will need to be shown that the proposal is sensitive to, and compatible with, its context. It should be recognized that the context consists of existing development as well as the planning policy goals for the site and surrounding area. Considering the type of application under review, and its context, an analysis of fit may include such things as:

- a. Policy goals and objectives for the Place Type;*
- b. Policy goals and objectives expressed in the City Design chapter of the Plan;*
- c. Neighbourhood character;*
- d. Streetscape character;*
- e. Street wall;*
- f. Height;*
- g. Density;*
- h. Massing;*
- i. Scale;*
- j. Placement of building;*
- k. Setback and stepback;*
- l. Relationship to adjacent buildings;*
- m. Proposed architectural attributes such as windows, doors, and rooflines;*
- n. Materials;*
- o. Relationship to cultural heritage resources on the site and adjacent to it;*
- p. Landscaping and trees;*
- q. Coordination of access points and connections; and*
- r. Other relevant matters related to use, intensity, and form.*

Appendix D. Zoning and Non-Zoning Tools

Appendix D1. Other Tools to Regulate Intensity

The following tools can be used in combination or in place of conventional zoning tools:

- **Site plan approval** is a planning approval process that reviews the location and design of buildings and structures and determines their compliance with urban and landscape design guidelines and sustainable design standards. Site plan approval may be used in addition to a zoning by-law amendment to ensure certain standards are met. Through the site plan approval process, the City can request reports and studies to determine whether a level of intensity or building form is appropriate within a given context. Studies on shadows, traffic impacts, or servicing can alert the City to potential issues associated with excessive building intensity.
- **Holding provisions** are a tool used by municipalities to ensure additional requirements are met before a final approval for a development is provided. Holding provisions may be applied to ensure adequate infrastructure, services, and community services and facilities are or will be available, and the measures to mitigate negative impacts or satisfy policies of an official plan are adopted.
- **Form-based zoning** is a form of zoning that is primarily focused on the relationship between a building and the street or its adjacent uses. Although form-based zoning is primarily focused on building form, it inherently regulates intensity by regulating the size and shape of a development (see Part II – Zoning and Form).
- **Design guidelines** act as a guide for desirable built form that can be used to achieve specific design outcomes and implement policies contained in an official plan. Design guidelines generally do not have statutory power but can be used in combination with site plan approval to achieve positive design outcomes. In the event that a proposal exceeds intensity regulations, urban design can be the limiting factor for a proposed development; where a building does not satisfy the design guidelines it may limit achievable intensity.

Appendix D2. Other Non-Zoning Tools to Consider

This discussion paper has explored a series of zoning tools that can be used to ensure the form of new development will be context appropriate and the potential negative impacts of intensification will be minimized. It is important to note, however, that not all of the built form aspirations outlined in *The London Plan* can be implemented using zoning tools. Zoning can be very effective in establishing the building envelope, its basic shape and form, as well as the location and orientation of the building on a site. However, when striving to ensure that new development fits into the surrounding context, there are some aspects of built form that are beyond the purview of zoning. To deal with these built form issues it is necessary to turn to other kinds of tools, including site plan controls, design guidelines, and urban design peer review panels, awards and competitions, and public realm standards.

Site Plan Control

Site plan control is an optional tool under Section 41 of the *Planning Act* that allows a municipality to evaluate certain site elements of a proposed development, such as access for pedestrians and vehicles, walkways, lighting, waste facilities, landscaping, and exterior design. This control over site-specific matters is meant to ensure that a development proposal is well-designed, fits in with surrounding uses, and minimizes potential negative impacts of new development. Through the site plan process, applicants are required to submit plans and drawings displaying detailed building matters, such as the location of structures, landscaping, traffic and pedestrian access, and exterior design.

With respect to design controls, site plan control can influence building design details that are beyond the reach of zoning tools; however, the *Planning Act* limits a municipality's site plan approval power to the "exterior design" of a building, which may include "character, scale, appearance, and the design features of buildings". Site plan control can be used to regulate the look and character of a building, but it cannot be used to establish requirements for the physical construction or materials of a building. For example, to maintain the exterior architectural character of an area, a municipality may, through site plan control, require the colours of a new building to be consistent with that of the brick on buildings in the surrounding area. However, the municipality cannot require that the new building be constructed of bricks.

Design Guidelines

Urban design guidelines are a series of statements and diagrams that establish and communicate the desired design and qualities of new developments. Urban design guidelines are holistic in their approach and address elements beyond the scope of zoning tools. The guidelines represent built environment design best practices and use language that is free of command verbs. For instance, guidelines use words like "recommend" and "suggest" in place of "shall" or "must", which are traditionally found in a municipality's official plan and zoning by-law. While compliance with the guidelines is not required and the guidelines do not hold the same weight as an official plan or zoning by-law at the Ontario Land Tribunal, they influence building design by illustrating in great detail, through the use of drawings, diagrams, and photos, how a municipality's official plan built form policies are to be interpreted.

Municipalities often create area specific design guidelines in addition to city-wide design guidelines to illustrate the desirable form of particular building types, such as low-rise buildings (up to 4 storeys), mid-rise buildings (4 to 8 storeys), and high-rise buildings (9 or more storeys). In relation to London, area specific design guidelines could be developed for each Place Type or neighbourhood.

Urban Design Peer Review Panels

Like many municipalities across Ontario, the City of London has an Urban Design Peer Review Panel (UDPRP). The UDPRP is an additional tool that may be used by the City to ensure new development fits within the existing and planned context of an area. As per LP 306:

City Council may appoint an Urban Design Peer Review Panel, made up of urban design experts, who will provide advice to development applicants, Planning Staff, and Council through the evaluation of planning and development applications. Such evaluation will be based upon the policies of this Plan and any relevant guideline documents that have been adopted by Council.

The UDPRP's scope of work is outlined in the City's Terms of Reference (February 2020):

The UDPRP provides advice to City staff on applicable planning applications, including Official Plan Amendments, Zoning By-law Amendments, Subdivision Applications, and Site Plan Applications pertaining to urban design, as well as advice on urban designed-focused policy amendments and other initiatives. The advice of the UDPRP will be included in the applicable staff reports to the appropriate Committee of Council and/or to the applicable Approval Authority.

The UDPRP will evaluate applications related to their potential role in fostering:

- *A well-designed built form;*
- *Development that is compatible and a good fit within its context;*
- *A high-quality, distinctive and memorable city image;*
- *Development that supports a positive pedestrian environment;*
- *All types of active mobility and universal accessibility;*
- *High-quality public spaces that are safe, accessible, attractive and vibrant;*
- *A mix of housing types;*
- *Sustainability; and,*
- *A sense of place and character through healthy, diverse, and vibrant neighbourhoods.*

As previously discussed, zoning provisions that require exact compliance are not always the most appropriate for guiding the built form of new development as design is a creative field that thrives in an environment where alternative designs can be considered. In situations where design leeway is appropriate, the application of broad polices and urban design guidelines, as defined by the UDPRP in their review of proposals, can result in a built form that supports the aspirations of *The London Plan* while enhancing the public realm and providing a new, distinct sense of place.

Urban Design Award Programs and Competitions

Another tool for promoting built form design excellence is a City-sponsored urban design awards program. In 2018, the City of London created an awards program with the following mandate:

The City of London Urban Design Awards Program is intended to recognize, celebrate, and inspire design excellence in the City of London. Awards will be granted for exceptional projects that represent visionary thinking and “raise the bar” for design excellence in London. Urban Design Awards will be granted once every two years. City Planning will be responsible for administering this program in accordance with the Terms of Reference.

Many categories in the awards program reinforce the built form goals and aspirations of *The London Plan*. Several categories are detailed below:

- **Buildings:** an individual building, or a composition of buildings, which achieves urban design excellence through its relationship to the public realm, its massing, detailing, and pedestrian amenities;
- **Buildings (Small Scale Residential):** a residential building, which achieves urban design excellence through its relationship to the surrounding neighbourhood, its massing, siting, and detailing;
- **Large Places and Neighbourhoods:** new or renovated large-scale areas of the city; and,
- **Restoration, Rehabilitation and Adaptive Reuse:** renovated, restored, and adaptively reused buildings and groups of buildings.

Celebrating and awarding new and rehabilitated buildings that meet *The London Plan*'s objective of promoting urban design excellence is an effective tool the City should continue to use to ensure existing and new development fits within the context of its surrounding area. Given the importance and varying effects of different building forms on perspectives of the built environment, it may be worth considering adding separate categories for mid-rise and high-rise buildings to the urban design awards program. In doing so, the best examples of each building type category will have a fair opportunity to receive an award and model London's vision of a desirable built form.

Public Realm Standards

As the character of parks, plazas, open spaces, and streets have a profound impact on the look and feel of a community, Form-Based Codes often include zoning provisions that regulate the public realm. In regard to streets, the City of London has already created a series of standards (see the [*Complete Streets Design Manual*](#)). While this document is not considered part of the current zoning by-law, the standards work with the policies of *The London Plan* to ensure the design of public streets reinforce the characteristics of each Place Type and the built form aspirations of the Plan. The new zoning by-law would provide further support for these standards.

Appendix D3. Other Form-Related Tools to Consider

Design Competitions

The objective of a design competition is to deliver a high standard of architectural, urban, and landscape design, generally above and beyond that which is expected of a traditional development proposal. Design competitions seek to push the envelop of urban design and foster development that improves urban spaces by positively contributing to the public domain in a new and creative way.

Design Charrettes

For key development sites where there is a willing landowner, or on City-owned lands, organizing a design charrette can be a great way to ensure the City achieves its desired Place Type built form objectives. A design charrette typically involves bringing all parties whom will be affected by a new development together, on or near the development site, to work collaboratively on a design proposal. As a successful design charrette process requires the cooperation of the applicant as well as the willingness of surrounding landowners and area residents, it is not feasible for every development site. However, where it is feasible the design charrette can be one of the most powerful and effective tools for achieving context appropriate development that is supported by the community. Since all stakeholders are brought together and able to communicate feedback to one another directly, a successful design charette process has the potential to speed up the development review process as well.

Enhanced Budgets for Streetscaping Initiatives

As many of *The London Plan's* Place Type policies are tied to specific street types, the intensity and form of new developments are heavily influenced by the design, look, and feel of abutting street corridors. For example, within Urban Corridor Place Types the width of the right-of-way is often planned with future road widenings in mind. As a result, there are large swaths of public land on both sides of the road as new development is required to be built at or close to the front property line, which is significantly setback from the existing street. In these areas, to better fulfill the design objectives of *The London Plan*, the public lands can receive enhanced landscaping and/or improved streetscaping, including new street furniture and amenities. Alternatively, public lands may be reallocated for other temporary uses, such as sidewalk cafes or galleries, to activate the street and support a more vibrant and engaging public realm. The City of London could support such initiatives by establishing a budget for public realm improvements within specific Place Types.

Appendix E. Other Considerations for the New Zoning By-Law

Appendix E1. Building Types and Place Types

Low-Rise Building Types

As *The London Plan* emphasizes the importance of regulating form and contextual fit over use, a great variety of low-rise building types (1 to 3 storeys) are permitted to locate in close proximity to one another within certain Place Types - as long as each building type's form-based provisions are followed. To ensure different building types fit harmoniously with one another and reinforce the existing neighbourhood's character, a series of design goals are outlined in *The London Plan*. These goals include, amongst other things, the realization of:

- Appropriate transitions between different building heights;
- Clearly visible front entrances;
- Consistent setbacks;
- Consistent eaves lines, first floor elevation heights, and floor to floor heights;
- Appropriate relationships between a building's front façade and/or frontage and the street;
- Active living spaces at-grade to facilitate casual surveillance of the street; and,
- Reserved space in the front yard for landscaping.

To illustrate how form-based zoning provisions may help ensure various low-rise building types co-exist harmoniously, picture a residential street on which there are single detached houses, townhouses, and a fourplex building. All these building types are comprised of the same use – residential dwelling units – but each takes a different form. The single detached houses may have side driveways and garages located at the rear of the property, while the townhouses may have separate, street-facing garages and individual amenity areas. The fourplex may have a central driveway that leads to a parking garage at the rear of the building, and a shared amenity area that is used by all residents. If each of these three building types meet the design goals of *The London Plan* such that they are all oriented to the street and have identifiable front entrances, and consistent setbacks, floor to floor heights, and eaves line heights, then there is a very good chance that these buildings can exist in harmony and reinforce their neighbourhood's character – despite being of different building types.

Mid-Rise Building Types

Mid-rise buildings are 4 to 8 storeys (approximately 15 m to 28 m) in height. These buildings often take the form of stacked townhouses, stacked back-to-back townhouses, mansion apartments, garden apartments, Main Street mixed-use buildings, and Corridor mixed-use buildings. *The London Plan* states that mid-rise buildings should be designed to have three components: a base, middle, and top (LP 288).

The most important design goals for mid-rise buildings include achieving:

- Appropriate transitions, setbacks, and facing distances between buildings of different heights and densities on adjacent properties;
- Clearly visible front entrances;
- Consistent setbacks and build-to lines;
- Appropriate relationships between a building's front façade and/or frontage and the street;

- Active spaces at-grade on retail streets to facilitate casual surveillance of the street;
- Appropriate landscaping and buffering at-grade;
- Parking and loading access from side streets and/or rear lanes; and,
- Locating parking garages underground or when located above ground, ensuring parking areas are lined with active uses where they may be visible from the public realm.

High-Rise Building Types

High-rise buildings are taller than 8 storeys (approximately 28 m) and/or taller than the street right-of-way on which they are located. Like mid-rise buildings, *The London Plan* states that high-rise buildings should be designed to express three defined components, a base, middle, and top, but adds that alternative design solutions that address the following intentions of *The London Plan* may also be permitted (LP 289):

1. *The base should establish a human-scale façade with active frontages including, where appropriate, windows with transparent glass, forecourts, patios, awnings, lighting, and the use of materials that reinforce a human scale.*
2. *The middle (i.e., the tower) should be visually cohesive with, but distinct from, the base and top.*
3. *The top should provide a finishing treatment, such as a roof or a cornice treatment, to hide and integrate mechanical penthouses into the overall building design.*

High-rise developments are supported in Place Types with higher levels of intensification, such as Transit Villages and in the Downtown. Where high-rise developments are permitted, several design goals are intended to be achieved through the use of zoning tools. Zoning tools may be uniquely applied to the base, middle, and top of a high-rise development, as outlined below.

Base (Podium):

- Clearly visible, at-grade front entrances and active uses on retail streets;
- Comfortable street proportions that create a human scale;
- Consistent setbacks and build-to lines on retail streets;
- An appropriate frontage to street relationship, with clearly identifiable street-oriented entrances and setbacks for landscaping and buffering where residential uses are permitted and planned at grade; and,
- At-grade parking hidden from view by linear uses.

Middle (Tower):

- Appropriate transitions between different building heights and intensities, particularly across interior property lines abutted by mid-rise and low-rise developments (e.g., a minimum 15 m setback from a mid-rise tower face to a low-rise residential property line);
- Minimum tower-facing distances;
- Minimum tower stepback requirements from the street (or streets on corner lots) and/or public spaces to ensure the tower does not overwhelm the public realm; and,
- Maximum tower floorplate sizes (e.g., 750 m²).

Top:

- Establishing reasonable height exemptions for elements such as mechanical penthouses, elevator overruns, and stair access enclosures so they stepback from the edge of the tower (e.g., by 3 or 5 m) to reduce their visibility from the public realm.

Utility Building Types

Utility buildings are typically stand-alone, simple structures that can accommodate a mix of uses or exclusively commercial, retail, institutional, or industrial uses. Like the building types outlined above, utility buildings may be grouped by intensity. When located along Corridors, utility building types may become more visible than when they are located within Heavy Industrial, Light Industrial, or Commercial Industrial Place Type areas. In the next phase of the ReThink Zoning project, utility building types will be more thoroughly explored and articulated.

Other Considerations

As per *The London Plan*, buildings located within Rapid Transit Corridors, Urban Corridors, and Shopping Area Place Types are required to orient towards the street. In instances where these buildings are located on large plaza sites that feature interior parking areas, the layout of the buildings should be designed so the front entrances and windows of establishments face the street, rather than the interior parking area. Appropriate zoning tools must be incorporated into the new zoning by-law to support policies such as these, as outlined in *The London Plan*.



RETHINK ZONING DISCUSSION PAPERS

3 ZONING IN ON EXISTING USES

JUNE 2022

Sajecki →
Planning

**R.E. MILLWARD +
ASSOCIATES LTD**
planning and development services

FUSL
FRESHMAN URBAN SOLUTIONS LTD.

POSAD MAXWAN
strategy x design

Scribe
TECHNICAL PARTNERS & DESIGNERS



Land Acknowledgement

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.





Executive Summary

This paper introduces the modern concept of considering land use, intensity, and form in the new zoning by-law for London. This approach can help London achieve its goal of growing “inward and upward” over the long-term.

Conventional zoning by-laws, or Euclidean zoning, are the most common form of zoning and regulate land based on how it is to be used. In recent years, municipalities have introduced alternative zoning systems including “form-based zoning” which can support the implementation of *The London Plan* by placing a balanced emphasis on form, intensity, and use. This paper will assess the functionality and efficacy of existing land uses and definitions in the existing Zoning By-law (Z.-1), analyze minor variance data, and build on the completed ReThink Zoning Background Papers (2021) by examining approaches to zoning by-law regulations across Ontario.

Z.-1 has 46 land use zones that are further subdivided into more than 169 zone variations. Each zone has a section that identifies permitted uses, variations (where applicable), regulations, and special provisions. Within the zone variations, there are nearly 300 discrete land uses. The greatest challenges to Z.-1 pertaining to land uses include the substantial number of zones and zone variations; multiple sections in the Zoning By-law that contain direction on land use; duplication between permitted uses in zone variations; permitted uses that include regulations; land uses that function as discrete zones; and overall inconsistency in formatting of zone labels.

Section 2 (Definitions) of Z.-1 presents a catalogue of more than 540 terms that are defined, or partially defined, of which three-quarters are land use definitions and the remaining terms are general definitions that do not relate to land uses. 38 defined uses have definitions that point to yet other definitions. The biggest challenges of the existing Zoning By-law pertaining to definitions include missing definitions; overly prescriptive definitions; inconsistent terminology for permitted use definitions in zone variations; overly complex cross-referencing of several definitions; defined terms that are not differentiated from undefined terms; several definitions that include regulations; and special provisions that include definitions.

The majority of minor variances over the last 10 years occurred in the residential sub-type, with the most common variance categories being “yard setbacks”, followed by “lot and yard requirements”. This data will inform the regulations of the new zoning by-law in a future phase of the project.

The analysis set out in this paper distilled the lengthy and complex list of existing uses into a simplified list of 35 land uses. These uses serve as a guide between the transect model, Place Types, and the specific uses to be identified in the new zoning by-law. The general land use categories can be aligned with Place Type policies to guide the appropriate deployment of permitted uses in zones to implement *The London Plan*. Appropriate definitions will be used to ensure consistency and clarity in interpreting uses in the new zoning by-law. Defined land use terms and general definitions will be established in future steps of the project as the zoning by-law develops.

TABLE OF CONTENTS

鍋底香
POTATO NOODLE
米線 涼皮 刀削面 土豆粉 肉夾饃
LEVEL UP BARBER SHOP
226-700-1175 519-667-40

NOW LEASING COMMERCIAL
WESTDELL
DEVELOPMENT
INFO@WESTDELLCORP.COM
519-850-0000

AUTHORIZED PARKING ONLY
CUSTOMER PARKING ONLY WHILE ON PREMISES. NO OVERNIGHT PARKING. Unauthorized vehicles may be towed at owner's expense. City of London Traffic and Parking

WARNING
This Premises Is Under Video Surveillance

Wharncliffe Health Centre
MyHealth CENTRE
LANSBURY
Dr. Samim
UHUNT
Wharncliffe
LifeLabs
MEDICAL SERVICES

Dr. Samim
COMING SOON

279 WHARNCLIFFE

FOR LEASE

50 km/h

1.0 INTRODUCTION	10
1.1 Purpose	12
1.2 Guiding Principles	13
2.0 EXAMINATION OF CURRENT APPROACH	14
2.1 Uses	15
2.2 Definitions	19
2.3 Minor Variances	22
3.0 OPTIONS FOR A NEW ZONING BY-LAW	24
3.1 Conventional Zoning Tools on Use	25
3.2 Unconventional Zoning Tools on Use	27
4.0 RECOMMENDATIONS	28
4.1 Refining Land Uses and Definitions	29
4.2 Determining Appropriate Land Use by Transect	32
4.3 Recommended Land Uses by Place Type	33
4.4 Recommended Definitions	34
5.0 CONCLUSIONS	36
APPENDICES	38
Appendix A. Methodology	39
Appendix B. Existing Zoning By-law Zone Abbreviations	40
Appendix C. Minor Variance Analysis by Variance Category	42
Appendix D. Use Categories and Permitted Uses	45
Appendix E. Master List of Existing Land Uses Aligned with Simplified List of Uses	48
LIST OF FIGURES	
Figure 1. Mid-Rise Office Development in London	15
Figure 2. Sample Residential Neighbourhood with Varying Dwelling Forms and Intensities	15

Figure 3. Former Industrial Building in Transition 18
Figure 4. Definitions in the existing Zoning By-law Z.-1 19
Figure 5. Fluctuating Trends in the Volume of Minor Variance Applications 22
Figure 6. London City Hall 27
Figure 7. Transect Application to London’s Place Types (Draft) 32

LIST OF TABLES

Table 1. Z.-1 Zone and Zone Variations Classification 17
Table 2. Z.-1 Minor Variations Between 2012-2021 by Variance Category and Sub-Type 23
Table 3. Examples of Defined Retail Uses 26
Table 4. Simplified Land Use Terms (Preliminary) 30



1.0 INTRODUCTION

In a conventional zoning by-law, land use is the fundamental driver that establishes zoning districts and associated regulations to guide permissible and desirable development within a municipality. In other words, conventional zoning, also known as Euclidean zoning, regulates land based on how it is to be used. Common land use-based zoning districts or categories employed in a Euclidean zoning system include residential, office, commercial, industrial, and institutional zones.

Euclidean zoning systems have been used in land use planning for nearly a century and are arguably the most common approach to implementing planning policy in North America. In recent years, however, municipalities have introduced several alternative zoning systems, including “form-based zoning” and “SmartCodes”. Form-based zoning considers many forms of regulation and moves away from placing an emphasis on land uses; it is principally concerned with the role that built form regulations and performance standards play in establishing a zoning framework with predictable outcomes. The New Urbanist planning model known as “SmartCode” also moves away from land use as the primary regulation tool; it is focused on “place-making”, the relationship between built and natural environments, and the desirable physical form, placement, and scale of buildings within each environment.

This shift away from conventional zoning complements the intent of *The London Plan (2016)* and introduces a London-specific rethinking of the approach and tools that are used to regulate planning permissions in the city. For example, *The London Plan* (the Plan) places a balanced emphasis on form, intensity, and use-based policies. A form-based zoning approach would align with and support implementation of the Plan’s policies.

This paper focuses on how the City of London’s new zoning by-law can achieve desirable outcomes, the lessons that can be learned from the existing Zoning By-law (Z.-1), and the zoning tools that can be

used to implement the new zoning by-law. Fundamentally, this paper introduces the modern concept of considering land use, intensity, and form in the new zoning by-law for London. This approach can help London achieve its goal of growing “inward and upward” over the long-term.

1.1 Purpose

The term “land use” encompasses the full range of activities that are permitted to occur within each zone in London (see the ReThink Zoning Background Papers (2021)). Although the new zoning by-law’s approach will place more emphasis than Z.-1 currently does on regulating form, in addition to intensity and use, land use permissions can assist in addressing the City’s fundamental planning objectives, based on the Plan’s principles, for achieving desired built form outcomes over the coming decades. As such, regulations for land use will continue to be an important consideration in planning for the “highly-functional, connected, and desirable places” envisioned by the Plan, consistent with *The London Plan’s* goals of “creating complete communities” and “setting the stage for a vibrancy that comes with variety and diversity” (LP 748-749).

This paper builds on the findings of the ReThink Zoning Background Papers (2021), which explored land use regulations and approaches of zoning by-laws across Ontario. Further, this paper will assess the functionality and efficacy of existing land uses and definitions in Z.-1. This evaluation will recommend a potential approach to zoning for use that will inform the development of the new zoning by-law based on *The London Plan*, which will be flexible, predictable, and context-specific to the City of London.

It is important to understand that the role of land use regulations may differ by Place Type. In some cases, regulating land use will continue to be instrumental in mitigating or reducing conflicts between Place Types (e. g., Industrial and Neighbourhoods). Throughout the development of the new zoning by-law, these roles will be comprehensively examined and careful direction will be provided for transition areas between Place Types. This approach will ensure the successful implementation of the governing policies of *The London Plan* and support the creation of a “mosaic of outstanding places” needed for London to be “exciting, exceptional, and connected” in 2035 (LP 746).

1.2 Guiding Principles

Recommendations proposed in this discussion paper are based on a series of guiding principles developed by the Consultant Team in consultation with the City of London and the City's preliminary work on ReThink Zoning. The guiding principles are as follows:

1. Establish a shorter, broader, and less prescriptive list of permitted uses.
2. Determine what definitions are needed and ensuring they are consistent, clear, concise, and written in plain language.
3. Provide clarity about the role of land use regulations, performance standards, and definitions, without overlap on how each tool functions.
4. Shift thinking about the role of land use regulations in London's new zoning by-law.

The methodology for this approach is provided in [Appendix A](#).

2.0 **EXAMINATION OF CURRENT APPROACH**

This paper is comprised of two sections: Uses and Definitions. Each section provides a summary of the Consultant Team’s review of the approach used in the existing Zoning By-law (Z.-1) and of the issues identified and analyzed. The results of the review and analysis inform this paper’s preliminary recommendations.

This analysis considered land uses and definitions together for the purpose of this paper, as they are interrelated and share many similarities in terms of current challenges, opportunities, and intended outcomes, to increase the usability and clarity of the new zoning by-law.

2.1 Uses

To understand the nature of each zone variation and the permitted uses in each, the Consultant Team conducted an examination of uses listed in Z.-1. The function and appropriateness of each were assessed in the context of the current planning regime, with the goal of curating a refined and simplified list of permitted uses to ensure ease and consistency in interpretation. From this analysis, a master table of all permitted uses for each zone variation was prepared and issues or challenges were identified, providing an overview of undesirable outcomes related to land use.

Current Approach to Uses

Z.-1 has 46 land use zones that are further subdivided into 169 zone variations¹, excluding the residential zone variations found in the “Special Provisions” sections. Each zone has a section that identifies permitted uses, variations (where applicable), regulations, and special provisions. Within all of the 169 zone variations, there are 294 discrete land uses² identified as being permitted uses, such as “cinemas”, “hospitals”, and “dwelling units”. The list of permitted uses differs between most zone variations.

In a conventional zoning by-law, zones can be classified into general groupings (e.g., Residential, Office, Commercial). Table 1 presents how Z.-1’s zones and zone variations are categorized. While London’s new zoning by-law is expected to move away from zoning that is based fundamentally on land uses, these categories assist in understanding the interpretation, intention, and function of each zone and zone variation. This is a necessary step in refining the new zoning by-law’s approach to use and developing more streamlined categories of uses (as proposed for the new zoning by-law in Section 3). Note that some of the zones and zone variations in Z.-1 can be classified in more than one category. For this exercise, where overlap exists, the zone’s list of permitted uses was examined to assess the intent and purpose of each zone or zone variation to determine the best classification, as presented in Table 1.



Figure 1. Mid-Rise Office Development in London



Figure 2. Sample Residential Neighbourhood with Varying Dwelling Forms and Intensities

1 Note RSA and CSA zones were listed as “RSA1-4” and CSA1-8” in Z.-1. The zone variations are subject to the same use permission but counted individually for consistency in this report.
 2 Excluding any discrete uses that appear in the residential zone variations.

Table 1. Z.-1 Zone and Zone Variations Classification*

Z.-1 Zone and Zone Variations Classification*									
Categories**	Residential ³	Office	Mixed-Use	Commercial	Institutional	Industrial	Transport/Utility	Open Space	Agricultural/Rural
Zones	R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 TGS	RO OF OB	OR OC DA BDC	RSA CSA NSA ASA AC HS RSC CC CR AGC RRC	RF CF NF DC	LI GI HI EX WRM	SS RT	OS ER	AG UR
Number of Zone Variations	R1 – (17) R2 – (6) R3 – (4) R4 – (6) R5 – (7) R6 – (5) R7 – (1) R8 – (4) R9 – (7) R10 – (5) R11 – (1)	RO – (4) OF – (9) OB – (4)	OR – (6) OC – (8) DA – (2) BDC – (3)	RSA – (4) CSA – (8) NSA – (5) ASA – (8) AC – (6) HS – (5) RSC – (6) CC – (7) CR – (2) AGC – (2) RRC – (4)	RF – (3) CF – (6) NF – (3)	LI – (10) GI – (3) HI – (4) EX – (3) WRM – (1)	SS – (5)	OS – (5)	AG – (6) UR – (6)

* Bolded text indicates zone is subject to zone variations.

** For simplicity, the zone label is abbreviated as provided in Z.-1. See [Appendix B](#) for the look-up key for each.

Issues and Challenges

In Z.-1, land use regulations are provided in multiple sections, making it difficult for the user to navigate and fully understand what is permitted. For example, each zone is presented in its own unique section, but the user is often required to also reference Section 2 (Definitions), Section 3 (Zones and Symbols), and Section 4 (General Provisions) to fully access and understand the requirements.

Further complexity arises from Z.-1’s zone variations being primarily differentiated by use. In all, 294

3 Although the zone variations in the Residential Zones appear in the “Special Provisions” section which was not reviewed as part of this exercise, they have been included for completeness. The contents of the zone variations will be reviewed and analyzed at a later stage.

discrete land uses are identified, and there is considerable duplication among them. For example, in many instances, two zone variations have an identical list of permitted uses, such as with residential R9 and R10, office OF2 and OF3, and urban reserve UR5 and UR6. Despite having different zone labels, the list of permitted uses in each of these groupings is the same. There are also some zone variations that are grouped together in the permitted uses section of Z.-1 despite different zone labels, such as commercial zones RSA1-4.

A significant contributing factor to the substantial number of uses in the Z.-1 is the presence of regulations within the land use permissions that differentiate uses which are otherwise the same. Many are differentiated as discrete uses based solely on specific performance standards that control the location, form, or intensity of development. For example, food-related retail stores, which include “supermarkets”, “food stores”, and “grocery stores”, are differentiated by scale rather than activity or primary function.

Another example is “livestock facilities”, which are considered a separate use from “livestock facilities that must be located more than a certain distance from the Urban Growth Boundary or in accordance with Minimum Distance Separation regulations”. There is no distinction between these uses from a land use perspective. The locational requirement for these uses could be addressed through provisions or associated regulations pertaining to separation distance, rather than the introduction of a new land use.

Further, many distinct dwelling types are identified, including single detached, semi-detached, duplex, triplex, and fourplex, among others. The new zoning by-law is intended to distinguish form and use. As such, there is an opportunity to simplify the terminology found in the use regulations (e.g., permitted uses may use “dwelling units” rather than “dwelling types”) and allow form-based regulations to determine appropriate built form outcomes for the various Place Types. This approach is explored in *Discussion Paper #2 Zoning in on Intensification*.

In addition to the large number of zone variations, there are several land uses that function as a zone in Z.-1. Examples of this include the Day Care Zone and the Temporary Garden Suites Zone, each of which permit a single use in the zone. However, it is redundant to provide individual zones that permit a single use. These uses are more appropriately classified as a land use within a zone, rather than as a zone in and of themselves.

Moreover, there is little consistency in the formatting of zone variations, their labels, and how permitted uses are articulated in the text of Z.-1. For example, some zone variations begin with the abbreviated zone label, while others begin with the abbreviated zone label and a number (e.g., RO, RO1, RO2 but also OC1, OC2, OC3).



Figure 3. Former Industrial Building in Transition

See [Appendix B](#) for the full list of zones and their associated zone variations. These formatting and structural considerations are further addressed in *Discussion Paper #6, Implementing the New Zoning By-law*.

As mentioned, each zone variation has a set of “Special Provisions” that allow for more finite and site-specific permissions. These were not reviewed as part of this exercise, and will be explored further through the development of the new zoning by-law. The residential zone variations have not been examined and are included in Table 1 for completeness only.

In summary, the greatest challenges to the Z.-1 as they pertain to uses include:

- A substantial number of zones and zone variations;
- A structure that presents the provisions that control land use are separated across sections;
- Several zone variations contain an identical list of permitted uses;
- Regulations are built into the permitted use section;
- Instances where land uses function as discrete zones; and
- The inconsistent formatting of zone labels.

2.2 Definitions

London’s new zoning by-law will include a series of new and/or revised definitions to ensure consistency, clarity, and simplicity in its terminology and interpretation. This section examines the current approach to defined and undefined terms and assess the issues and challenges to inform the approach in the new zoning by-law. Among other elements, this approach will recommend excluding performance standards from the Definitions.

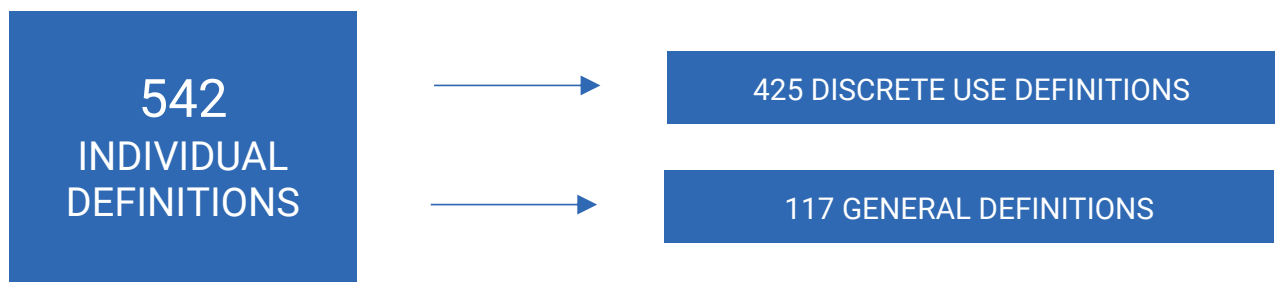


Figure 4. Definitions in the existing Zoning By-law Z.-1

Current Approach to Definitions

Section 2 (Definitions) of Z.-1 presents a catalogue of 542 terms⁴ that are defined, or partially defined, of which 425 are land use definitions and the remaining 117 are general definitions that do not relate

⁴ Excluding any discrete definitions that appear in the “Special Provisions” section for each zone.

to land uses (e.g., “lot area”, “access driveway”). Among them, there are 38 overlapping definitions. Several definitions have also been deleted from Z.-1 through amendments and were not included in this analysis but remain in the Definitions section of Z.-1.

Issues and Challenges

Overly prescriptive definitions pose a challenge to Z.-1’s interpretation and application. For example, a residential building intended exclusively for the habitation of senior citizens may be a “senior citizen’s apartment building”, “continuum-of-care facility”, “rest home”, “retirement lodge”, “retirement home”, or “nursing home”. There is little differentiation between these terms in regard to land use permissions within Z.-1. Each of the terms provide a list of permitted uses within their formal definitions that overlap or cross-reference to other provided examples. For instance, a continuum-of-care facility “means a facility which may include a Senior Citizens Apartment Building, a Nursing Home, and/or a Retirement Lodge”.

This is further complicated by the lack of consistency in the terminology used throughout Z.-1. For example, “rest home” is identified as a permitted use in specific zone variations. However, the definition of “rest home” in the Definitions defers to yet another definition: “Home for the Aged, Rest Home”. This complexity is also found for several residential and institutional uses. For example, the definition for “community college” defers to “school”. The effect is to make Z.-1 less efficient, and more challenging to interpret. The new zoning by-law would benefit from a consolidation of separate uses under a single term, providing identical definitions.

The level of specificity and overly prescriptive land uses identified in Z.-1 contribute to a substantial number of discrete uses that complicate the Zoning By-law’s interpretation. For example, the “residential” use category includes nearly 40 uses, many with identical characteristics from a land use perspective. For instance, “stacked townhouse dwellings” and “stacked townhousing” are identified as separate uses in different zones but “stacked townhouse dwelling” is formally defined and “stacked townhousing” is not formally defined in Z.-1 and therefore cannot be concretely differentiated from one another. In addition, 38 defined uses have definitions that point to yet other definitions, meaning the remaining 502 definitions are individually identified in the Zoning By-law.

Of the 294 land uses identified in the Z.-1, all but 40 terms are defined in the Definitions⁵. There are an additional 171 “uses” that are

Example: “Convenience store: means a retail store having a gross floor area of 300 square metres (3,229 square feet) or less, or as determined by the zone standards, where a variety of both household and grocery items are offered for sale primarily to serve the daily needs of people and may include the rental of videos, an automated banking machine, and/or depots for such items as film, laundry or dry cleaning and an area devoted to food preparation for consumption on or off the premises, provided the gross floor area for the sale of prepared food does not exceed 10% of the gross floor area, to a maximum of 30 square metres (323 square feet).”

⁵ It should be noted that six of the 40 land uses that are not defined are identical in nature to

defined in but not listed in any zone or zone variation's permitted use regulations. Further, there is no way to confidently identify what terms within a zone variation's regulations have definitions, as all terms have the same formatting. There are also several definitions that contain regulations.

Z.-1 provisions pertaining to scale and intensity would be better provided within the regulations, such as within the general provisions or zone provisions sections, rather than the Definitions section. Of the 425 land use definitions in the Z.-1, 58 terms contain regulations or directions to permit or restrict accessory uses. Another consideration is how commercial zones and zone variations identify each individual use as permitted only "without drive-through facilities". As *The London Plan's* policies do not support the use of drive-through facilities within certain Place Types, differentiating uses based on permissions for a drive-through facility is not required as part of the formal definition.

Special provisions will be considered through the development of the new zoning by-law. However, it should be noted that there are definitions contained within the special provisions section of Z.-1 to establish the meaning of a use, outside of the Definitions section. This approach creates inconsistency in the meaning and interpretation of a use on a specific site and should not be carried forward into the new zoning by-law.

In summary, the biggest challenges of the existing Zoning By-law as they pertain to definitions include the following:

- Missing definitions;
- Overly prescriptive definitions of land uses;
- Inconsistent terminology for permitted use definitions and zone variations;
- Overly complex cross-referencing of several definitions;
- Defined terms that are not differentiated from undefined terms;
- Several definitions that include regulations; and
- Special provisions that include definitions.

other terms that appear in the Definitions. However, they are considered as separate uses by the existing Zoning By-law.

2.3 Minor Variances

The City of London has processed an average of 170 minor variance applications each year over the last 10 years (as shown in Figure 1).

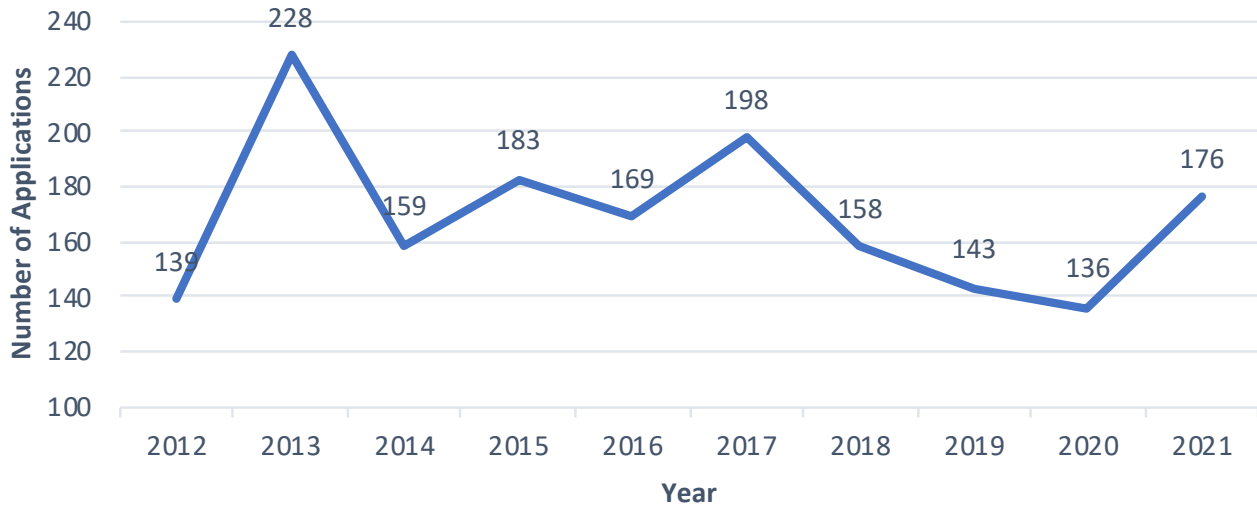


Figure 5. Fluctuating Trends in the Volume of Minor Variance Applications (Data Source: City of London, 2021)

There has not been a steady increase in the number of applications processed each year. A spike in applications was observed in 2013, and again in 2017, to a lesser extent. Unsurprisingly, the fewest number of applications was seen in 2020, which likely has a correlation to delayed development applications at the start of the COVID-19 pandemic.

An overview of the “variances categories” or types (i.e., accessory structures, legal non-conforming uses, lot/yard requirement, yard setback, and parking), land use “sub-types” (i.e., commercial, residential, institutional, industrial, and agricultural), and general trends associated with each is provided below.

The residential sub-type experienced a significantly higher proportion of minor variance application compared to any other (see Table 2). On average, the fewest number of variances was found in the institutional and agricultural sub-types (see [Appendix C](#) for a series of individual tables that present the number of variances in each sub-type by variance category, for each year).

Table 2. Z-1 Minor Variations Between 2012-2021 by Variance Category and Sub-Type

Minor Variations Between 2012-2021 by Variance Category and Sub-Type

Variance Categories	Commercial	Residential	Institutional	Industrial	Agricultural	Total
Accessory Structure	5	259	1	6	13	284
Legal Non-Conforming Uses	19	100	1	11	4	135
Lot and Yard Requirements	172	411	6	31	11	631
Yard Setbacks	41	493	7	9	7	557
Parking	43	33	4	1	0	81
Total	280	1,296	19	58	35	

Minor variances for accessory structures typically were requested for decks, patios, swimming pools, and air conditioning units. Over the last 10 years, there were 284 variances related to accessory structures, 91% of which were in the Residential land use sub-type.

Legal non-conforming use variances typically were requested for the recognition of uses, and in many cases an alteration or expansion to an existing legal non-confirming use. These use variances were much less common than other types (135 over the last 10 years). Most of these variances were found across residential, commercial, and industrial land use sub-types.

Variances to lot/yard requirements and yard setback were the most common variances requested in London over the last decade, with a combined total of 631 and 557 requested variances for all land use sub-types, respectively. Lot/yard requirement variances include a broader group of density variances (both in terms of units and gross floor area), reductions to minimum lot dimensions resulting from severances, and relief from maximum lot coverage and building height. Yard setback variances refer specifically to requests for variations to (and relief from) the minimum required front, rear, and side yard setbacks for buildings or structures. Both variance categories saw a substantial number of variances in the residential land use sub-type. A proportionally significant number of variances to lot/yard requirements was also found in the commercial sub-type, with just under 30% of the total variances being in this sub-type.

Parking variances requested relief from the minimum parking requirements for uses providing less parking than required. Parking variances were most common in the commercial sub-type. Of all variance categories, parking variances have seen the most substantial increase over the last 10 years, with a higher volume in more recent years.

A more detailed analysis of the variances requested in each sub-type will be explored and used to inform the development of appropriate regulations in the new zoning by-law.

3.0

OPTIONS FOR A NEW ZONING BY-LAW

The ReThink Zoning Background Papers (2021) considered four different conventional and unconventional zoning tools that could be used to develop a new zoning by-law. The Consultant Team’s assessment of these tools is examined in more detail below.

3.1 Conventional Zoning Tools on Use

Official plans provide direction for land use permissions at a broader and more general level than the implementing zoning by-law. Uses in Z.-1 can be classified into general land use categories, as shown in Table 1.

A conventional zoning approach considered in the ReThink Zoning Background Papers (2021) builds on these approaches, and groups uses based on “use families” or “use categories”. While use families or categories can vary between municipalities, they often include residential and non-residential, mixed use, institutional, industrial/employment, and open space classifications. This is perhaps the most common approach to a conventional zoning by-law and is used by numerous municipalities across Ontario, including the [Town of Newmarket Urban Centres Zoning By-law](#) and the [City of Vaughan Zoning By-law](#). However, it is unlikely that this approach alone will achieve the desired outcomes of *The London Plan*, given the limitations in respect to advancing a balanced approach between use, intensity, and form as outlined in the guiding principles for the new zoning by-law.

Another conventional approach proposes using fewer and more broadly defined uses to reduce the overall quantity of uses included in the new zoning by-law. This has shown to be effective in several municipalities, including the Town of Newmarket’s Urban Centres Zoning By-law and in the Town of Oakville’s Zoning By-law 2014-014. For example, the 24 retail uses that are itemized individually in Z.-1 could be collapsed into a single new retail category to improve the simplicity, efficiency, and

interpretability of the new zoning by-law (see Table 3).

The same approach could be applied to the Definitions section. For instance, to make the section more succinct, definitions should only be provided for land use terms that are not self-evident or easily understood by the general public. This will contribute to reducing susceptibility to overly prescriptive and/or non-discrete uses.

Table 3. Examples of Defined Retail Uses (Source: City of London, 2021)

Examples of Defined Retail Uses		
Existing London Zoning By-law		New Zoning By-law
<ul style="list-style-type: none"> • Convenience Store • Bake Shop • Boutique • Antique Store • Home Decorating Store • Pet Shop • Home Appliance Store • Florist Shop • Gift Shop • Duplicating Shop 	<ul style="list-style-type: none"> • Home Improvement Store • Convenience Service Establishment • Home Furnishing Store • Home and Auto Supply Store • Convenience Business Service Establishment • Video Rental Establishment • Catalogue Store • Home Improvement • Furnishing Store • Bulk Beverage Store • Pharmacy • Retail Store 	<ul style="list-style-type: none"> • Retail Store

Another conventional zoning approach seeks to integrate performance standards with permitted uses. This approach often works well when an additional layer of specificity is included in a zoning by-law to ensure its proper implementation, such as a performance standard to limit the size of an outdoor patio that abuts a residential use. While this can be useful in certain contexts, caution should be taken when determining the number of performance standards to be included in the new zoning by-law. Including too many performance standards with permitted uses can make a zoning by-law overly complicated.

It is also worth noting that the new zoning by-law will consider integrating a general provisions section, which establishes land use permissions for all zones, with each individual zone at a city-wide level. This approach reduces the number of discrete uses and regulations listed within the zone chapters of the new zoning by-law.

3.2 Unconventional Zoning Tools on Use

Another zoning approach considered in the ReThink Zoning Background Papers (2021) places a greater emphasis on zoning for built form outcomes than on land uses. Form-based zoning codes (discussed in greater detail in *Discussion Paper #6, Implementing the New Zoning By-law*), shift the primary focus of the zoning by-law from land use to physical built form outcomes. This approach encourages a zoning by-law to be context-specific and grounded in a framework that balances form, intensity, and land use.

A hybrid approach that considers these approaches will guide the development of the new zoning by-law. As discussed in the previous section, using fewer and more broadly defined uses can achieve the goal of creating a concise and consistent list of land uses that are not overly prescriptive. Form-based zoning can help to achieve the objectives of *The London Plan* and encourage the development of transit-supportive and walkable communities, with higher affordable housing provisions. Performance standards can benefit areas where an additional layer of regulation is needed to ensure consistency in the interpretation and implementation of the new zoning by-law.

Each of these approaches will be examined in greater detail in the development of the new zoning by-law.

A 'hybrid' approach combines some aspects of a traditional Euclidean zoning by-law (fundamentally use-based regulations) with form-based zoning controls (fundamentally zoning for form-based outcomes) to identify desirable elements in new development. As form-based codes often include architectural and landscaping standards that require significant expertise and public consultation, hybrid codes are increasingly being used to achieve a similar outcome.

4.0 **RECOMMENDATIONS**

4.1 Refining Land Uses and Definitions

The Consultant Team undertook a complete review of all land uses in the existing Zoning By-law (Z.-1), aligned with the ReThink Zoning guiding principles (Section 1.2) and the review of the zoning approaches (Section 3.1). As part of this exercise, a comprehensive, preliminary list of simplified land use terms recommended to guide the new zoning by-law has been developed (see Table 4). Fundamental to the exercise of creating the list of uses is balancing the objectives of providing clarity, certainty, and flexibility.

The comprehensive list of permitted uses will be presented at a more finite level for each of the individual Place Types. A similar exercise will be conducted for definitions as they relate to the comprehensive list of permitted uses.

4.1.1 Jurisdictional Scan of Uses in Comparable Form-Based Zoning By-Laws

In preparation for the exercise of synthesizing the lengthy list of permitted uses in Z.-1 to develop a refined and simplified list of uses for the new zoning by-law, a review of other zoning by-laws in comparable municipalities was undertaken. The municipalities were selected based on form-based or hybrid zoning by-laws, population, locations, and cross-sectional environments that are comparable to those found in the City of London.

This analysis provides a basis for the types of uses that are often found in form-based and hybrid zoning by-laws, and the role that land use regulations play in these zoning by-laws. In this section, zoning by-laws that will inform the discussion include Canadian case studies of the cities of Ottawa (ON), Edmonton (AB), Vaughan (ON), and the Town of High River (AB), as well as the American example of Denver (CO). Use categories and permitted uses from the case study jurisdictions that are relevant to the intent to refine uses are outlined in [Appendix D](#).

4.1.2 Refined London Zoning By-law Uses

For the purpose of developing recommendations, the Consultant Team undertook an analysis of the existing uses in Z.-1 and how they were aligned and could be simplified (see Table 4). The general land use categories and simplified land uses were informed, in part, by the Glossary of Terms in *The London Plan* and will be aligned with the Place Type land use permissions through the development of the new zoning by-law.

To understand the alignment of uses in Z.-1 and the simplified uses listed below (Table 4), an analysis was undertaken (see [Appendix E](#)).

Table 4. Simplified Land Use Terms (Preliminary)

Simplified Land Use Terms (Preliminary)	
General Land Use Categories	Simplified Land Uses
Residential	Residential Uses Accessory to Primary Residential Uses Residential Care Facilities Residential Mixed-Uses
Lodging	Short Term Accommodation Hotels / Motels
Office	Offices Medical Offices
Retail and Service	Eating and Drinking Establishments Retail Stores Personal and Business Services
Entertainment and Recreational	Arts and Culture Outdoor Recreations Places of Amusement Places of Assembly Sports and Recreational Facilities

Civic, Public, and Institutional	Community/Civic Services Educational Uses Government/Public Services Hospitals
Agricultural and Rural	Agricultural, General Agricultural, Intensive Agricultural Sales and Services
Open Space	Protected Natural Areas Parks and Open Spaces
Auto-Oriented and Transportation	Transportation Uses Vehicular Sales and Services Vehicular Repair
Industrial	General Industrial Uses Manufacturing, Processing and Production Wholesale, Storage, Warehouse and Distribution Research and Development Heavy Industrial Uses Mining and Extraction and Energy Producing Systems Waste-Related Services

Source: R.E. Millward and Associates, 2022.

4.2 Determining Appropriate Land Use by Transect

The new zoning by-law’s approach to regulating land use will be informed by a hybrid form-based zoning system. This system seeks to delineate transects rather than zones or zone categories. Common transects observable in the City of London include natural/environmental, rural/agricultural, suburban, urban, transit corridor, urban centre, and special districts which may include industrial, public, civic, and/or cultural Place Types.

In form-based zoning codes, transects are typically delineated based on intensity, from least to most intense, and form, rather than use. Figure 6 demonstrates the methodology that will be used as a starting point for aligning *The London Plan’s* Place Types with the transects of a form-based zoning approach.

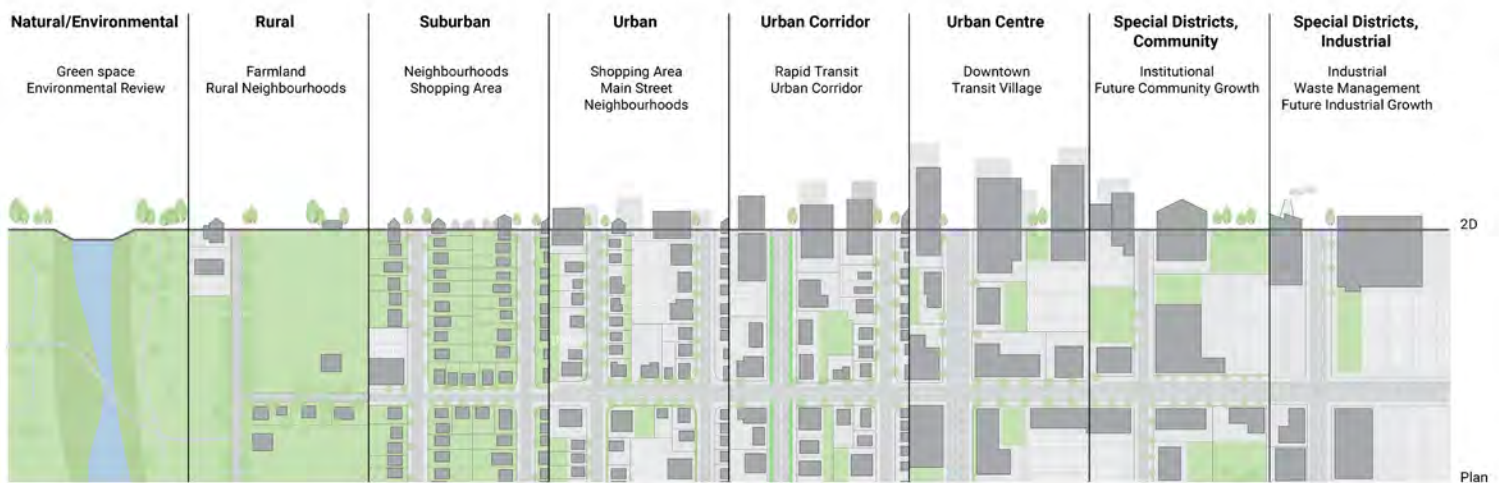


Figure 6: Transect Application to London’s Place Types (Draft)

4.3 Recommended Land Uses by Place Type

Various combinations of the simplified land uses identified in Table 5 may be appropriate for different Place Types. An analysis on the individual Place Types will be conducted at a later stage to explore the implications of the recommended land uses.

Of note, *The London Plan* has several general uses envisioned for each Place Type. These uses serve as a guide between the transects and the specific uses to be identified in the new zoning by-law. Each Place Type may implement permitted land uses differently to prevent land use conflicts. For example, in the Neighbourhoods Place Type, the list of permitted uses may be short and flexible, but regulations pertaining to form and intensity may be more stringent. Comparatively, an Industrial Place Type may require a more granular approach to regulating permitted uses, to allow for a transition between heavier industry and more noxious uses and lighter manufacturing and service-related employment uses that may be located on the periphery. Similarly, a more finite degree of regulation may be needed for institutional and civic uses, which often have a high degree of variation (i.e., from sensitive uses, such as schools and municipally owned libraries, to uses that may produce noise or odours, such as emergency services).

Where specific uses are legal, desirable, and necessary but are not discussed directly in the Place Type policies, the new zoning by-law will identify the specific locations where the use may be permitted within the appropriate Place Types. This will be done by establishing conditional use permissions, which will outline the parameters that must be satisfied in order for the use to be permitted (i.e., lot size or restricting certain uses only to corner lots). As a zoning by-law cannot prohibit legal uses, conditional use permissions may address potential land use conflicts by controlling location, quantity, and other factors more specifically than the base zoning regulations.

Additionally, uses that require special parameters to avoid adverse external impacts in some Place Types, such as commercial vehicular uses, can be addressed through a special section that may be separate from the zone regulations. A separate chapter of the new zoning by-law can be used to establish city-wide regulations for certain legal uses with additional requirements around the use, site, and context to prevent or mitigate land use conflicts and ultimately achieve the vision of *The London Plan*. If the intent of *The London Plan* is to phase out certain antiquated or undesirable uses, the new zoning by-law can remain silent, which effectively causes the use to become “legal non-conforming” under the *Planning Act*. This would allow the use to continue to exist and expand, until such time that the use no longer continues on the site. Utilizing both the conditional use permissions and legal non-conforming tools will allow the new zoning by-law to streamline the number of uses and zones based on the most important zoning parameters in individual Place Types.

4.4 Recommended Definitions

A master definitions list will be developed to offer simplicity, clarity, and certainty in the interpretation of the new zoning by-law. Definitions will be standalone and will not defer to other definitions as the existing Zoning By-law does. It will include both general definitions that are necessary for interpreting the regulations of the new zoning by-law and formal definitions for land uses. Where certainty around a use is required, a clear definition will be provided in plain language. This will likely also include uses that are permitted subject to conditions, as discussed in the previous section.

Definitions will be important to establish certainty and consistency in the interpretation and implementation of the new zoning by-law. Appropriate definitions will be developed in consultation with the City of London.

Consideration will also be given to the use of illustrations within the new Definitions section of the zoning by-law, to provide complementary visual depictions of complex terms and concepts, in alignment with the general principles of the review.



5.0 **CONCLUSIONS**

The new London zoning by-law will implement the Place Type policies of *The London Plan* using an approach that considers form, intensity, and land use. It is recommended that the new zoning by-law rethink the conventional zoning approach of land use-based zoning by-laws, where use is the primary focus of regulations.

Following an analysis of Z.-1 and the issues and challenges (which may create undesirable built form outcomes in the new zoning by-law), and an examination of conventional and unconventional zoning tools that may be used to address the role land use can play in a zoning by-law, this paper has arrived at several preliminary recommendations for consideration. These recommendations support the use of simplified and more concise land uses to be included under each of *The London Plan's* Place Types, which will be discussed in greater detail in future steps of the zoning by-law's development.

The conclusions of this discussion paper include several recommendations related to the existing Zoning By-law's uses and definitions. As a next step for this analysis, a more granular approach to deploying use permissions may be identified to create permissions for uses in certain Place Types, subject to special conditions depending on a site's relationship to the surrounding land uses and Place Types. An assessment of planning issues and/or conflicts that exist, or might exist, between uses has been initiated, with a particular focus on use and the transition between different Place Types that may produce external and quantifiable adverse impacts. Lastly, how zoning can control and mitigate potential conflicts between uses is also being considered.

The recommendations of this paper and the feedback received from stakeholders and the general public will inform the new, comprehensive zoning by-law's land uses and definitions. Specific uses will be developed for and implemented to reflect the unique conditions of each Place Type.

APPENDICES

Appendix A. Methodology

In creating this discussion paper, the Consultant Team undertook the following steps:

- Conducted virtual and in-person site visit tours to gain an understanding of the city layout, the distribution of land uses and interface between uses across various Place Types per *The London Plan*;
- Reviewed *The London Plan* use-related policies;
- Reviewed the City's background documents, with analysis of trends;
- Analyzed minor variance applications over the last 10 years in the city (see below for assumptions and methodology);
- Identified and defined the main land use-related issues and impacts affecting development in London through a workshop with City staff; and
- Reviewed traditional and non-traditional zoning concepts and tools that may be effectively used in London.

Minor variance application data was provided by the City of London for the last 10 years (2012-2021 inclusive). Each year was organized using breakdowns for "variances categories" or types (i.e., accessory structures, legal non-conforming uses, lot/yard requirement, yard setback, and parking) and land use "sub-types" (i.e., commercial, residential, institutional, industrial, and agricultural).

Starting from 2018 onwards, identification of the variance categories use a numerical identification (categories 1, 2, 3, and 4) rather than a type (as set out above). For these applications, an analysis was undertaken to classify each variance into the most appropriate variance category of the five used prior to 2017. In most cases, the alignments were not always accurate. For instance, an application described as "Category 2" may have been a request to permit an "Accessory Structure".

The typical alignments between category numbers of types are as follows:

- Category 1 aligned with Accessory Structures;
- Category 2 aligned with Yard Setbacks;
- Category 3 was often Legal Non-Conforming Uses; and
- Category 4 was a combination of Lot/Yard Requirements (which is a more general, catch-all grouping) as well as Parking.

Appendix B. Existing Zoning By-law Zone Abbreviations

Count	Zone	Zone Name	Zone Variations
1	R1	Residential R1 Zone	R1-1 - R1-17
2	R2	Residential R2 Zone	R2-1 - R2-6
3	R3	Residential R3 Zone	R3-1 - R3-4
4	R4	Residential R4 Zone	R4-1 - R4-6
5	R5	Residential R5 Zone	R5-1 - R5-7
6	R6	Residential R6 Zone	R6-1 - R6-5
7	R7	Residential R7 Zone	R7 (R7(1) - R7 (29))
8	R8	Residential R8 Zone	R8-1 - R8-4
9	R9	Residential R9 Zone	R9-1 - R9-7
10	R10	Residential R10 Zone	R10-1 - R10-5
11	R11	Residential R11 Zone	R11 (R11(1))
44	TGS	Temporary Garden Suites (TGS) Zone	-
14	RO	Restricted Office (RO) Zone	RO - RO3
15	OF	Office (OF) Zone	OF - OF8
39	OB	Office Business Park (OB) Zone	OB1 - OB4
12	OR	Office Residential (OR) Zone	OR - OR5
13	OC	Office Conversion (OC) Zone	OC1 - OC8
16	DA	Downtown Area (DA) Zone	DA1 - DA2
21	BDC	Business District Commercial (BDC) Zone	BDC - BDC2
17	RSA	Regional Shopping Area (RSA) Zone	RSA1 - RSA4
18	CSA	Community Shopping Area (CSA) Zone	CSA1 - CSA8
19	NSA	Neighbourhood Shopping Area (NSA) Zone	NSA1 - NSA5
20	ASA	Associated Shopping Area (ASA) Zone	ASA1 - ASA8
22	AC	Arterial Commercial (AC) Zone	AC - AC5
23	HS	Highway Service Commercial (HS) Zone	HS - HS4
24	RSC	Restricted Service Commercial (RSC) Zone	RSC1 - RSC6
25	CC	Convenience Commercial (CC) Zone	CC - CC6

43	RRC	Rural Settlement Commercial Uses (RRC) Zone	RRC1 – RRC4
34	CR	Commercial Recreation (CR) Zone	CR – CR1
42	AGC	Agricultural Commercial (AGC) Zone	AGC1 – AGC2
27	RF	Regional Facility (RF) Zone	RF – RF2
28	CF	Community Facility (CF) Zone	CF1 – CF6
29	NF	Neighbourhood Facility (NF) Zone	NF – NF2
31	DC	Day Care (DC) Zone	-
36	LI	Light Industrial (LI) Zone	LI1 – LI10
37	GI	General Industrial (GI) Zone	GI1 – GI3
38	HI	Heavy Industrial (HI) Zone	HI1 – HI4
39	EX	Resource Extraction (EX) Zone	EX – EX2
47	WRM	Waste and Resource Management (WRM) Zone	WRM1
26	SS	Automobile Service Station (SS) Zone	SS – SS4
40	RT	Rail Transportation (RT) Zone	-
32	OS	Open Space (OS) Zone	OS1 – OS5

Appendix C. Minor Variance Analysis by Variance Category

Accessory Structure						
	Commercial	Residential	Institutional	Industrial	Agricultural	Total
2012	0	21	0	1	0	22
2013	0	24	0	1	0	25
2014	0	23	1	2	1	27
2015	1	31	0	0	4	36
2016	2	22	0	2	5	31
2017	0	29	0	0	2	31
2018	0	34	0	0	0	34
2019	0	20	0	0	1	21
2020	0	20	0	0	0	20
2021	2	35	0	0	0	37
	5	259	1	6	13	284

Legal Non-Conforming Uses						
	Commercial	Residential	Institutional	Industrial	Agricultural	Total
2012	2	3	0	1	0	6
2013	3	17	0	4	0	24
2014	3	23	0	1	2	29
2015	0	19	0	1	0	20
2016	1	14	1	2	1	19
2017	0	6	0	1	0	7
2018	3	10	0	1	0	14
2019	2	2	0	0	1	5
2020	2	3	0	0	0	5
2021	3	3	0	0	0	6
	19	100	1	11	4	135

Parking						
	Commercial	Residential	Institutional	Industrial	Agricultural	Total
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	1	1	0	0	0	2
2017	0	0	0	0	0	0
2018	3	4	2	1	0	10
2019	13	9	0	0	0	22
2020	12	10	2	0	0	24
2021	14	9	0	0	0	23
	43	33	4	1	0	81

Lot/Yard Requirements						
	Commercial	Residential	Institutional	Industrial	Agricultural	Total
2012	25	32	0	2	0	59
2013	15	31	0	3	0	49
2014	11	42	2	3	2	60
2015	27	50	0	3	2	82
2016	18	42	0	6	1	67
2017	33	62	2	4	3	104
2018	16	41	1	3	1	62
2019	11	31	0	1	1	44
2020	7	30	0	4	0	41
2021	9	50	1	2	1	63
	172	411	6	31	11	631

Yard Setbacks						
	Commercial	Residential	Institutional	Industrial	Agricultural	Total
2012	10	43	0	0	0	53
2013	5	123	0	2	0	130
2014	2	37	0	3	0	42
2015	7	36	1	1	1	46
2016	4	40	2	2	4	52
2017	5	49	2	0	0	56
2018	1	36	0	0	0	37
2019	6	41	1	1	1	50
2020	0	44	1	0	0	45
2021	1	44	0	0	1	46
	41	493	7	9	7	557

Appendix D. Use Categories and Permitted Uses*

In a traditional Euclidean zoning by-law, permitted land uses typically appear in a list form at the start of each zone section, and in some cases are also found in a general provisions section and site-specific exceptions or special provisions. In a form-based zoning code or a hybrid approach, land use regulation is not the driving factor for establishing zoning by-law regulations, with less emphasis placed on land use compared to other controlling factors such as built form and intensity.

Ottawa, which is in the process of developing a new form-based zoning by-law, has started with outlining the primary goals and objectives of the official plan and established tools that can be implemented through zoning. For example, to determine appropriate uses in the residential designation of “Neighbourhoods”, the City has identified the goal of establishing a zoning framework that provides permissions for residential-supportive and compatible uses.

Edmonton is also in the process of developing a new zoning by-law. Available Background Papers have identified use lists by zone districts.

Across the other case study jurisdictions, zoning retains an element of land use permissions, but is no longer used as the foundation for establishing the zone regulations.

Vaughan and High River both continue to include land use permissions at the outset of the zoning district section, using tables to communicate permitted uses by zone type in a legible format. Vaughan employs use categories and provides a list of uses that is quite prescriptive (although not as detailed as London’s current Zoning By-law).

High River, which uses a transect model to delineate six “Land Use Districts” for the various environments in the Town (see Table 4), includes “use categories” (accompanied by descriptions of the intent for each), and identifies more specific “permitted uses” (see [Appendix 4](#)). Even the specific permitted uses are not as detailed as the uses contained in the current London Zoning By-law. A land use overlay map is also included in the High River Zoning By-law.

In Denver, the permitted use matrix falls at the end of each “zone district” section. Each zone district includes three layers of land use classifications that start with a short list of “primary use classifications” (which are comparable to the “use categories” found in the High River Zoning By-law), followed by a table that outlines “use categories” which are slightly more specific, and finally “specific use types” which become much more precise for the purposes of establishing parking standards (and are comparable to the level of specificity found in Z.-1). The third classification of “specific use types” are too prescriptive for the purpose of the new zoning by-law for London, but the first two classifications may be an appropriate level of detail.

Use Category	Permitted Uses	Reference Zoning By-law
Residential	<ul style="list-style-type: none"> • Dwelling Unit(s) • Additional Dwelling Unit(s) 	High River
	<ul style="list-style-type: none"> • Household Living • Residential Care • Congregate Living • Accessory to Primary Residential Uses 	Denver
	<ul style="list-style-type: none"> • Residential 	Edmonton
Lodging	<ul style="list-style-type: none"> • Bed and Breakfast • Short Term Rental • Hotel/Motel 	High River
	<ul style="list-style-type: none"> • Lodging Accommodations 	Denver
Office	<ul style="list-style-type: none"> • Major Home Occupation • Professional Office 	High River
	<ul style="list-style-type: none"> • Office • Home Occupations 	Denver
	<ul style="list-style-type: none"> • Home Based Business 	Edmonton
Retail and Entertainment	<ul style="list-style-type: none"> • Amusement Facility • Café • Drinking Establishment • Restaurant • Retail and Service, General • Retail and Service, Heavy 	High River
	<ul style="list-style-type: none"> • Adult Business • Arts, Recreation, and Entertainment • Non-Residential Uses in Existing Business Structures in Residential Zones • Eating and Drinking Establishments • Retail Sales, Service and Repair (not Including Vehicle or Equipment Sales, Service and Repair) • Vehicle/Equipment Sales, Rentals, Service and Repair 	Denver
	<ul style="list-style-type: none"> • Indoor Sales and Services • Outdoor Sales and Services • Food, Cultural, and Entertainment • Recreation 	Edmonton
Industrial, Manufacturing, and Wholesaling	<ul style="list-style-type: none"> • Light Industrial • Repair • Outdoor Storage 	High River
	<ul style="list-style-type: none"> • Communications and Information • Industrial Services 	Denver

	<ul style="list-style-type: none"> • Manufacturing And Production • Mining and Extraction, and Energy Producing Systems • Transportation Facilities • Waste-Related Services • Wholesale, Storage, Warehouse and Distribution 	
	<ul style="list-style-type: none"> • Minor Industrial • Major Industrial 	Edmonton
Civic, Public, and Institutional	<ul style="list-style-type: none"> • Active Recreation • After Life Care • Arts and Culture • Education • Government • Hospital • Human Services • Passive Recreation 	High River
	<ul style="list-style-type: none"> • Basic Utilities • Community/Public Service • Cultural • Special Purpose • Public Parks and Open Space • Education • Public and Religious Assembly 	Denver
	<ul style="list-style-type: none"> • Civic Services • Public Utility 	Edmonton
Agriculture	<ul style="list-style-type: none"> • Urban Agriculture • Rural, Intensive Agriculture • Rural, Non-Intensive Agriculture 	High River
	<ul style="list-style-type: none"> • Agriculture 	Denver
	<ul style="list-style-type: none"> • Agriculture 	Edmonton
Natural Areas	<ul style="list-style-type: none"> • Protected Natural Area 	Edmonton
Other	<ul style="list-style-type: none"> • Essential Public Utilities • Signs (associated with an approved use on the site) • Pageantry Features (in association with approved development) 	High River

*Identified in jurisdictional scan of form-based zoning by-laws.

Appendix E. Master List of Existing Land Uses Aligned with Simplified List of Uses

	Permitted Use (options for new Zoning By-law)	Associated Use (As Identified in Existing London Zoning By-law)	Typical Zones***	Planning Justification
Land Use Category: Residential				
1	Residential Uses	<ul style="list-style-type: none"> • Apartment Building* • Cluster Stacked Townhouse Dwelling** • Cluster Townhouse* • Converted Dwelling* • Duplex Dwelling* • Dwelling Unit* • Existing Dwelling* • Farm Dwelling* • Fourplex Dwelling* • Retirement Lodge* • Semi-Detached Dwelling* • Senior Citizens Apartment Buildings* • Single Detached Dwelling* • Stacked Townhouse Dwelling* • Street Townhouse Dwelling* • Townhouse Dwelling* • Triplex Dwelling* 	<ul style="list-style-type: none"> • Residential • Office Residential • Business District Commercial • Downtown Area 	Includes all uses where human habitation is accommodated. All uses in this group will be considered sensitive uses.
2	Accessory to Primary Residential Uses	<ul style="list-style-type: none"> • Accessory Dwelling Unit • Ancillary Residential and/or Hostels and Accommodations, Together with Permitted Uses in the Zone** • Garden Suite* • Secondary Farm Dwelling* 	<ul style="list-style-type: none"> • Residential • Temporary Garden Suite 	A distinct residential use to recognize permissions for additional residential uses that may be appropriate in some, but not all, residentially-zoned areas.
3	Residential Care Facility	<ul style="list-style-type: none"> • Continuum-Of-Care Facility* • Continuum-Of-Care Facility for Seniors** • Emergency Care Establishment* • Group Home Type 2* • Handicapped Persons Apartment Building** • Nursing Home* • Rest Homes* • Supervised Residence* 	<ul style="list-style-type: none"> • Residential • Regional Facility • Community Facility 	Places where human habitation is accommodated, but that may require part-time or full-time staff to assist residents. May be distinct from other residential uses in terms of applicable zoning regulations including parking, site configuration, and density.
4	Residential Mixed-Use	<ul style="list-style-type: none"> • Apartment Hotels* • Office-Apartment Buildings* 	<ul style="list-style-type: none"> • Office Residential • Downtown Area 	Sensitive in nature, involving a substantial residential component. Are likely to be in the Downtown and between residential/office areas.

Land Use Category: <i>Lodging</i>				
5	Short Term Rental	<ul style="list-style-type: none"> • Bed And Breakfast Establishment* • Hostels* • Lodging House, Class 2* 	<ul style="list-style-type: none"> • Office Residential • Business District Commercial • Downtown Area • Regional Facility 	Most likely to be found in neighbourhoods and may 'fit' with the house form.
6	Hotel/Motel	<ul style="list-style-type: none"> • Hotels* • Motels* 	<ul style="list-style-type: none"> • Office Business Park • Downtown Area 	Most likely to be found in the Downtown, near the airport, and in business areas. These are also likely to be subject to different regulations regarding scale.
Land Use Category: <i>Office</i>				
7	Office	<ul style="list-style-type: none"> • Office, Business* / Business Office* • Office* • Office, Professional* • Office, Service* • Office, Store and Business Electronic Products Industry* • Offices, Support* / Support Offices • Studio* 	<ul style="list-style-type: none"> • Office • Office Business Park • Office Residential • Office Conversion • Business District Commercial • Downtown Area 	All are variations of office uses. There is no planning issue that differentiates between these use types.
8	Medical Office	<ul style="list-style-type: none"> • Clinic, Outpatient* • Clinics* • Medical/Dental Laboratories • Medical/Dental Office* • Patient Testing Centre Laboratories* 	<ul style="list-style-type: none"> • Restricted Office • Office • Business District Commercial • Neighbourhood Shopping Area 	Likely subject to different zoning regulations than an "office" including parking. May also be required in different zones compared to "office".

Land Use Category: Retail and Service				
9	Eating and Drinking Establishments	<ul style="list-style-type: none"> • Eat-In Restaurants* / Restaurant, Eat-In* • Restaurant* • Restaurant, Outdoor Patio* • Tavern* 	<ul style="list-style-type: none"> • Business District Commercial • Downtown Area • Community Shopping Area 	Captures all uses where patrons would be served food and/or drinks.
10	Retail Store	<ul style="list-style-type: none"> • Antique Store* • Auction Establishment* • Bake Shops* • Bulk Beverage Store* • Catalogue Stores* • Convenience Stores* • Florist Shop* • Food Store* • Garden Store* • Gift Shops* • Grocery Store* • Home And Auto Supply Store* • Home Improvement and Furnishing Store* • Liquor, Beer, and Wine Store* • Retail Store* • Shopping Centres* • Supermarket* • Video Rental Establishment* 	<ul style="list-style-type: none"> • Business District Commercial • Downtown Area • Neighbourhood Shopping Area • Convenience Commercial 	Defined by their commercial nature. Support the day-to-day needs of residents and could be located in commercially-zoned areas and/or in/abutting neighbourhoods.
11	Personal and Business Service	<ul style="list-style-type: none"> • Animal Clinic* • Animal Hospital* • Business Service Establishments* • Convenience Business Service Establishment* • Duplicating Shop* • Financial Institution* • Funeral Homes* • Laundromats* • Personal Service Establishment* • Pharmacies* • Printing Establishment* 	<ul style="list-style-type: none"> • Business District Commercial • Neighbourhood Shopping Area • Highway Service Commercial • Convenience Commercial • Restricted Service Commercial 	Support the daily needs of residents but are focused on providing a service rather than a commercial function.

Land Use Category: Entertainment and Recreational Uses				
12	Arts and Culture	<ul style="list-style-type: none"> • Art Galleries • Cinemas* • Museums • Theatres* 	<ul style="list-style-type: none"> • Business District Commercial • Downtown Area 	Likely to be attractions to visitors and residents, offering culturally-enriching experiences.
13	Outdoor Recreation	<ul style="list-style-type: none"> • Campground* • Commercial Outdoor Recreation Facility* • Golf Course* • Golf Course, Recreational* / Recreational Golf Course • Golf Driving Range* • Hiking Trails* • Multi-Use Pathways* • Private Outdoor Recreation Club* 	<ul style="list-style-type: none"> • Commercial Recreation • Open Space 	Defined by their principal function occurring fully or primarily outdoors (although they may have associated buildings or structures). Often require large amounts of space and offer active or passive recreational opportunities.
14	Place of Amusement	<ul style="list-style-type: none"> • Amusement Game Establishment • Amusement Park • Entertainment Complexes • Place Of Entertainment* • Go Kart Track • Miniature Golf Course* 	<ul style="list-style-type: none"> • Downtown Area • Commercial Recreation 	Includes those uses geared toward commercial entertainment. Not recreational in nature.
15	Place of Assembly	<ul style="list-style-type: none"> • Assembly Halls • Private Club* • Stadia [Stadiums] • Places Of Worship 	<ul style="list-style-type: none"> • Business District Commercial • Downtown Area • Commercial Recreation 	Defined by their primary function as attracting and hosting members of the public, sometimes in large groups.
16	Sports and Recreation Facility	<ul style="list-style-type: none"> • Batting Cages • Passive Recreational Uses* • Public Recreational Buildings • Public Swimming Pools • Recreational Building (Indoor Sports) * • Recreational Buildings Associated with Conservation Lands and Public Parks** • Recreational Building • Riding Stable* • Sports Fields • Tennis Court 	<ul style="list-style-type: none"> • Commercial Recreation • Open Space • Urban Reserve 	All are dedicated facilities in which sports and recreational uses will be housed (may be indoors, outdoors, or a combination). Likely to be publicly-owned and/or funded and will occur in more structured forms and environments that outdoor recreational areas.

Land Use Category: Civic, Public, Institutional				
17	Community and Civic Services	<ul style="list-style-type: none"> • Community Centres* • Day Care Centres* • Institutions* • Library* • Post Offices 	<ul style="list-style-type: none"> • Office • Office Residential • Downtown Area • Neighbourhood Shopping Area 	All are intended to support residential uses and may be found along major roads/at key intersections abutting neighbourhoods.
18	Educational Uses	<ul style="list-style-type: none"> • Adult Secondary School* • Elementary School* • Private School* • School* • Secondary School* • University School* / Universities 	<ul style="list-style-type: none"> • Community Shopping Area • Regional Facility • Community Facility • Neighbourhood Facility 	A suite of educational uses that are not differentiated from a use perspective.
19	Government/Public Services	<ul style="list-style-type: none"> • Correctional And Detention Centre* • Fire Stations / Fire Halls • Police Stations 	<ul style="list-style-type: none"> • Regional Facility • Community Facility • Neighbourhood Facility 	Not designed to be destinations that are frequently visited by the public. May be located throughout the city.
20	Hospital	<ul style="list-style-type: none"> • Hospitals* 	<ul style="list-style-type: none"> • Regional Facility 	Large institutional health care centres with specific locational needs and requirements.

Land Use Category: <i>Agricultural/Rural</i>				
21	Agriculture, General	<ul style="list-style-type: none"> • Agricultural Research Station • Agricultural Uses* • Aquaculture* • Cultivation Of Land for Agricultural/Horticultural Purposes • Farms, Except For Livestock Facilities** • Forestry Use* • Greenhouse Farm* • Commercial Greenhouses* / Greenhouse, Commercial* • Nursery* 	<ul style="list-style-type: none"> • Open Space • Environmental Review • Resource Extraction • Agricultural • Urban Reserve 	Likely to be located in rural environments but may also serve as retail locations for members of the public seeking local agricultural produce. May be found closer to urban areas as they are less impactful in nature than intensive agricultural uses that are likely to emit odours and noise.
22	Agriculture, Intensive	<ul style="list-style-type: none"> • Agriculturally-Related Industrial Uses • Commercial Grain Drying, Handling, And Storage • Farm Chemical and Fertilizer Storage** • Farm Livestock Hospital** • Livestock Facilities* • Manure Storage Facilities* • Mushroom Farms* • Transfer Station for Dead Farm Livestock** 	<ul style="list-style-type: none"> • Agricultural • Agricultural Commercial 	Are expected to be more noxious in nature and likely to emit odours and noise that would be incompatible with urban uses and populated residential areas. May require more land area and be subject to specific regulations including Minimum Distance Separation requirements.
23	Agricultural Sales and Service	<ul style="list-style-type: none"> • Agricultural Service Establishment* • Agricultural Supply Establishment* • Farm Equipment Sales and Service Establishment** • Farm Gate Sales* • Farm Market* • Farm Supply** • Livestock Sales** • Retail Store Selling Agriculturally-Related Products** 	<ul style="list-style-type: none"> • Agricultural • Agricultural Commercial 	Specifically designed as commercial uses that support agricultural activities. Not designed as retail uses for the general public.
Land Use Category: <i>Natural Areas/Open Space</i>				
24	Protected Natural Area	<ul style="list-style-type: none"> • Conservation Lands* • Conservation Works* • Forest • Managed Woodlot* 	<ul style="list-style-type: none"> • Open Space • Agricultural • Urban Reserve 	Intended to be protected and conserved. Not intended for development and will likely be in significant environmental areas and rural/agricultural settings.
25	Parks and Open Space	<ul style="list-style-type: none"> • Cemeteries* • Playground • Private Park* • Public Park* 	<ul style="list-style-type: none"> • Commercial Recreation • Open Space 	Occur in open spaces and may have associated structures. Most likely to occur in urban environments.

Land Use Category: Auto-Oriented/Transportation Uses				
26	Transportation Uses	<ul style="list-style-type: none"> • RAILWAY LINES And Accessory USES** • TAXI ESTABLISHMENT* • TERMINAL CENTRE* • TRANSPORT TERMINAL* 	<ul style="list-style-type: none"> • Business District Commercial • Downtown Area, Regional Facility, Regional Shopping Area 	Defined by their primary function as a transportation use or to directly support a transportation function.
27	Vehicular Sales and Service	<ul style="list-style-type: none"> • Automobile Rental Establishment* • Automobile Sales and Service Establishment* • Automobile Sales and Service Establishment with Automobile Body Shops* • Automobile Service Station* • Automobile Supply Store* • Automotive Use, Restricted* • Gas Bar* • Sales Of Vehicles Reconditioned** • Truck Sales and Service Establishment* 	<ul style="list-style-type: none"> • Restricted Service Commercial • Automobile Service Station • Light Industrial • General Industrial 	Support the general public and provide both commercial and services uses that almost always occur together. May be associated with outdoor storage of vehicles.
28	Vehicular Repair	<ul style="list-style-type: none"> • Automobile Body Shops* • Automobile Repair Garages* • Impounding Yard* • Salvage Yard* 	<ul style="list-style-type: none"> • Restricted Service Commercial • Automobile Service Station • Light Industrial • General Industrial • Heavy Industrial 	Differentiated from sales and service as they are more noxious and require more specific geographic permissions. May be associated with outdoor storage of vehicle scarp parts.

Land Use Category: <i>Industrial</i>				
29	General Industrial Uses	<ul style="list-style-type: none"> Existing Defined Industrial Use* Existing Industrial Uses Industrial Mall* Repair And Rental Establishment* Service And Repair Establishment* Service Trade* 	<ul style="list-style-type: none"> Business District Commercial Downtown Area Neighbourhood Shopping Area Restricted Service Commercial Light Industrial General Industrial 	<p>A broad array of industrial uses that may not be classified as either "Manufacturing, Processing and Production" or "Wholesale, Storage, Warehouse and Distribution" (may include a combination or both, or may not include either uses).</p> <p>Uses are less noxious or intense and could be located at the periphery of an employment area.</p>
30	Manufacturing, Processing, and Production	<ul style="list-style-type: none"> Artisan Workshop* Bakeries* Brewing On Premises Establishment* Building Or Contracting Establishment* Craft Brewery* Custom Workshop* Dry Cleaning and Laundry Depot* Dry Cleaning and Laundry Plant* Electrical And Electronic Products Industries* Film Processing Depot* Food, Tobacco, and Beverage Processing Industries Excluding Meat Packaging** Manufacturing And Assembly Industries* Manufacturing And Assembly Industries with Related Sales** Paper And Allied Products Industries Excluding Pulp and Paper and Asphalt Roofing Industries** Pharmaceutical And Medical Products Industry* Printing, Reproduction and Data Processing Industries* Processed Goods Industry* Raw Materials Processing Industry* Textile Processing Industry* 	<ul style="list-style-type: none"> Office Business Park Light Industrial General Industrial 	<p>Includes uses that actively manufacture and produce an end product in a facility. Not geared to the general public but will attract employees on a regular basis.</p>
31	Wholesale, Storage, Warehouse and Distribution	<ul style="list-style-type: none"> Bulk Sales Establishment* Building Supply Outlet* 	<ul style="list-style-type: none"> Restricted Service Commercial Light Industrial 	<p>Involve indoor storage of goods and materials.</p>

		<ul style="list-style-type: none"> Existing Self-Storage Establishments Kennels* Post Office Depots Self-Storage Establishment* Storage Depot* Warehouse Establishment* Wholesale Establishment* 	<ul style="list-style-type: none"> General Industrial 	<p>May serve the general public more than "Manufacturing, Processing and Production" uses and are likely to be located on the periphery of an employment area.</p>
32	Research and Development	<ul style="list-style-type: none"> Laboratory* Research And Development Establishment* 	<ul style="list-style-type: none"> Office Business Park Light Industrial Agricultural 	<p>Large scale testing, research, and development that are likely to occur in large format and within or abutting employment areas.</p>
33	Heavy Industrial Uses	<ul style="list-style-type: none"> Abattoir* Leather And Fur Processing Industry, Excluding Tanning** 	<ul style="list-style-type: none"> Heavy Industrial Agricultural Commercial 	<p>Include the most noxious industrial uses. May require substantial buffering from adjacent uses and should be concentrated in certain locations within an employment area.</p>
34	Mining and Extraction, and Energy Producing Systems	<ul style="list-style-type: none"> Material Recovery Facility* Resource Excavation* Resource Extraction Operations, Including Accessory Aggregate Reprocessing, Asphalt Batching Plants, And Concrete Batching Plants** Resource Extraction Operations, Including Accessory Aggregate Reprocessing** Small Wind Energy Conversion System* Wayside Pit* 	<ul style="list-style-type: none"> Resource Extraction Agricultural Urban Reserve 	<p>Include disturbing the ground for the purposes of resource extraction relating to mining or energy. Will be noxious and are likely to be located away from urban areas.</p>
35	Waste-Related Services	<ul style="list-style-type: none"> Channel Composting Facility* Community Recycling and Drop-Off Depot* Compost Facility Construction Demolition Recycling Facility* In-Vessel Composting Facility* Leachate Pre-Treatment / Hauled Liquid Waste Facility* Municipal Waste Disposal Facility* Public Drop-Off for Municipal Hazardous or Special Waste* Specialized Recycling Facility* Waste Treatment Facility* Windrow Composting Facility* Yard Waste Composting Facility* 	<ul style="list-style-type: none"> Heavy Industrial Waste and Resource Management 	<p>Waste-related processing and recycling facilities that will likely be outdoor uses and that are likely to have noxious odours and noise emissions. Are incompatible with urban areas.</p>

* Land uses indicated with an asterisk are defined in the existing Zoning By-law Z.-1.

** Land uses indicated with a double asterisk are partially defined in the existing Zoning By-law Z.-1 (the entire land use term as captured in this table does not appear in the Definitions Section).

*** Sample zones where clustering of permissions occurs, not exclusive or comprehensive list.



RETHINK ZONING

DISCUSSION PAPERS

4

ZONING IN ON HOUSING AFFORDABILITY

JUNE 2022

Sajecki →
Planning

**R.E. MILLWARD +
ASSOCIATES LTD.**
planning and development services

FUSL
URBAN MANUFACTURING

POSAD MAXWAN
architecture + design

Scribe
TECHNICAL WRITERS & EDITORS



London
CANADA

Land Acknowledgment

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.



Source: The London Plan

This page intentionally left blank.

Executive Summary

This paper focuses on the relationship between zoning and affordable housing, as zoning determines where housing can be located, the types that can be built, and how it can be constructed. It is intended to help the City of London introduce measures to diversify and increase the City's supply of affordable housing.

Housing affordability is increasingly a challenge facing municipalities across Ontario and Canada, including in London. As the City of London (the City) is currently working on a new zoning by-law to implement *The London Plan*, which speaks to the importance of providing more, and a greater diversity of, housing options for the city's growing population, this discussion paper looks at the relationship between zoning and housing affordability.

Inclusionary zoning is a new tool available to Ontario municipalities, where developers may be required to provide affordable housing units in new developments. *The London Plan* defines affordable housing units as those that do not exceed 30% of gross annual household income for low- and moderate-income households. The City is currently working on preparing an Inclusionary Zoning By-law that will set out regulations on the type, size, tenure, and definition of affordability. Indirectly, however, zoning regulations can impact the affordability of housing by limiting where housing can be constructed (e.g., single-use zones, like "residential", further differentiated by the scale of housing that is permitted), what form housing can take (e.g., narrowly defined uses and limited use permissions), how much housing can be built (e.g., arbitrarily low density restrictions), and how much housing costs to build (e.g., parking and engineering requirements, municipal charges, and lengthy development processes).

The City's new comprehensive zoning by-law could help to diversify and increase the supply of affordable housing in London by:

- Reducing minimum lot sizes;
- Increasing density permissions;
- Permitting and ensuring flexible regulations for additional residential units in existing neighbourhoods;
- Permitting residential uses in commercial and institutional areas;
- Encouraging the development of flexible use buildings; and
- Reducing costs of development associated with out-dated parking requirements.

The new zoning by-law could also incentivize the provision of affordable housing units or cheaper housing in the form of smaller units through additional density permissions or relaxed parking, open space, or setback requirements where certain conditions are met.



TABLE OF CONTENTS

1.0 INTRODUCTION 10
1.1 Purpose 11

2.0 BACKGROUND 12
2.1 Housing Affordability in the City of London 13
2.2 Role of Zoning in Housing Affordability 17
2.3 London Plan Policies on Affordable Housing 21
2.4 Existing Zoning Related to Affordable Housing 24

3.0 PRELIMINARY RECOMMENDATIONS 26
3.1 Preliminary Directions 27
3.2 Key Recommendations 30
3.3 Additional Resources and Tools 34
3.4 Next Steps 36

APPENDICES 38
Appendix A. Methodology 39
Appendix B. Incentive Zoning in Pierce County, Washington 40
Appendix C. Complementary Resources and Tools (outside City Planning) 42

LIST OF FIGURES

Figure 1. The Housing Continuum	13
Figure 2. Three Standards of Housing Affordability	16
Figure 3. The Affordability Gap	16
Figure 4. Different Types of Residential Development	19
Figure 5. The Spectrum of Housing Types.	22
Figure 6. Flexible Housing	29
Figure 7. Transect Application to London’s Place Types	31
Figure 8. Balance between Housing Affordability and Other Priorities	33
Figure 9. Affordable Housing Development at 1045 Dundas Street in London.	36

LIST OF TABLES

Table 1. Transect Application to London’s Place Types	31
Table 2. Housing Stability for All - Actions for City Planning	35
Table B1. Summary of Bonus Housing Unit Rates	40
Table B2. Summary of Alternative Development Standards	41
Table C1. Summary of Complementary Resources and Tools	42



Source: The London Plan

1.0 INTRODUCTION

1.1 Purpose

Housing affordability has historically been seen as a challenge faced by large municipalities. Smaller municipalities, however, are some of the fastest growing communities in Canada and are now increasingly feeling the pressure to create more housing options for residents. According to Statistics Canada, the City of London's population increased 10% between 2016 and 2021, from 383,822 people to 422,324. *The London Plan*, the city's new plan for development and city-building to 2035, recognizes the importance of providing a more diversified housing stock and more affordable housing options.

The London Plan outlines 15 Place Types that together make up the City of London. This list is broken up into ten urban (Downtown, Transit Village, Rapid Transit Corridor, Urban Corridor, Shopping Area, Main Street, Neighbourhoods, Institutional, Industrial, Future Growth), three rural (Farmland, Rural Neighbourhoods, Waste Management Resource Recovery Area), and two city-wide Place Types (Green Space, Environmental Review), each with their own opportunities and constraints as they relate to the construction of affordable housing. The purpose of this discussion paper is to look at the relationship between zoning and affordable housing. Section 2.2 outlines at a high-level how zoning regulations can influence housing affordability; Section 2.3 and 2.4 speak to the London policy and regulatory context; while Section 3 identifies specific opportunities for the City of London's new zoning by-law, which will implement *The London Plan's* concept of Place Types, to address the supply and diversity of affordable housing through regulation. [Appendix A](#) describes the methodology used by the Consultant Team to develop this discussion paper, while [Appendix B](#) provides an example of incentive zoning from Pierce County, Washington for the development of affordable housing.

Affordable housing is a complex issue that involves many programs, services, funding, and partners that are beyond the scope of a zoning by-law and London's ReThink Zoning initiative, in particular. Many of these are identified in [Appendix C](#), for reference.

2.0 **BACKGROUND**

2.1 Housing Affordability in the City of London

Housing affordability has become a widespread challenge across Ontario as the cost of housing continues to rise at an exponential rate. The City of London is no exception to this trend. In order to discuss how zoning can contribute to housing affordability, we need to understand what we mean by affordable.

Defining Affordable Housing

The range of housing types available in a community is usually depicted as a continuum, one segment of which is affordable housing (see Figure 1). There are several definitions of affordable housing that are used by various governments and agencies in Canada. They can generally be broken down into income-based and market-based.



Figure 1. The Housing Continuum (Source: CMHC)



Residential Development in London's Downtown

- **Income-based:** affordable housing that costs less than 30% of pre-tax income for low-to-moderate income households. This definition is used by the Canada Mortgage and Housing Corporation (CMHC).
- **Market-based:** housing that costs less than or equal to the 'average market rent' or 'average market price' of a city. This definition is used by London's Housing Development Corporation (HDC).¹

The London Plan, which is consistent with the approach required by Ontario's *Provincial Policy Statement (PPS)*, uses the income-based approach further defining "affordable housing" relative to ownership and rental tenure:

- Affordable ownership housing is housing that does not exceed 30% of gross annual household income for LMI households, or for which the purchase price is at least 10% below the average purchase price of a comparable resale unit in the City of London.
- Affordable rental housing is defined as a unit for which the rent does not exceed 30% of gross annual household income for LMI households or is at or below the average market rent in London.

Issued under Section 3 of the *Planning Act*, the *PPS* provides policy direction for land use planning in Ontario. As required by the *Planning Act*, all decisions affecting planning matters "shall be consistent" with the *PPS*, which came into effect on May 1, 2020, and defines 'affordable' as:

- In the case of ownership housing, the least expensive of:
 - i. Housing for which the purchase price results in annual accommodation costs which do not exceed 30 percent of gross annual household income for low and moderate income households; or
 - ii. Housing for which the purchase price is at least 10 percent below the average purchase price of a resale unit in the regional market area;
- In the case of rental housing, the least expensive of:
 - i. A unit for which the rent does not exceed 30 percent of gross annual household income for low and moderate income households; or
 - ii. A unit for which the rent is at or below the average market rent of a unit in the regional market area.

1. As this second definition includes municipally-run community housing that have income-related eligibility requirements, the City of London's *Affordable Housing Community Improvement Plan (CIP)* identifies a third definition of affordable housing that gets at the 'affordability gap' between those who earn too much to qualify for income security programs and those who do not earn enough to be able to pay market rates without paying more than 30% of their pre-tax income. The *Affordable Housing CIP*, which is discussed in Section 3.3, outlines programs aimed at supporting the development of affordable housing within this range.

The Core Housing Need

In the City of London, a household is considered to be ‘core housing need’ if its housing situation does not meet one or more of the following three standards:

- **Adequate** housing that is not in need of repairs,
- **Affordable** housing that is less than 30% of the household’s pre-tax income, and
- **Suitable** housing for the size and composition of the household.



Figure 2. Three Standards of Housing Affordability

Housing affordability and the “core housing need” in London is assessed by weighing household incomes against the costs and supply of housing that can meet these households’ needs.

While the cost of ownership has been increasing year-over-year (especially in relation to single detached housing), the rental population has seen substantially worsening housing affordability conditions. The affordability gap increases with unit type as the cost of affordable monthly rent outpaces income (see Figure 3). Today, according to London’s *Housing Affordability CIP*:

- Over **40%** of renter households in bachelor/studio apartments spend more than 30% on shelter costs.
- Over **50%** of renter households in one-bedroom units and over **60%** of renters in two-bedroom units spend more than 30% on shelter costs.

This trend is most significant in three- and four-bedroom units, with over **80%** of renter households in these rental unit configurations spending more than 30% of income on rent. This is significant when considering families, the shift to working from home, and other household compositions that require additional space, or a larger unit type.

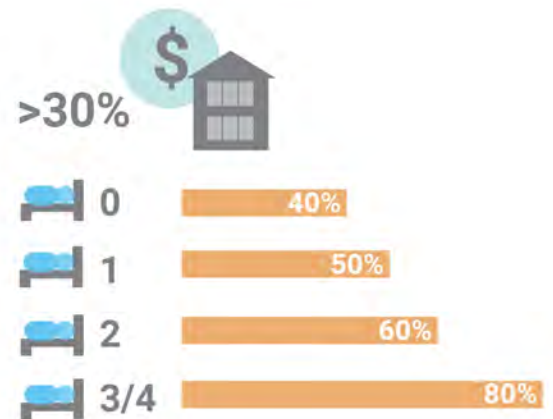


Figure 3. The Affordability Gap

According to the City of London’s *Affordable Housing Community Improvement Plan (CIP)*, the core housing need in London is highest in renter households (29.7%) compared to owner households (5.1%) and one-person households (23.8%) compared to households of two or more persons (9.6%).

For the purposes of London's new zoning by-law, this discussion paper considers affordable housing in two ways:

- The provision of 'affordable housing units' that meet the definition for affordable housing as outlined in *The London Plan* (to be refined in the City's forthcoming Inclusionary Zoning By-law [see Section 2.2]), and
- The construction of less expensive housing, whether due to smaller dwelling sizes or reduced construction costs.

2.2 Role of Zoning in Housing Affordability

Municipalities have several tools available to them to address the supply and diversity of affordable housing.

Development Charges: Based on recent legislative changes to services eligible to be covered by development charges, the City of London's 2025 development charges study will consider housing services (including affordable housing) for potential development charge recovery to encourage housing affordability in London. Regulated under the *Development Charges Act*, development charges are fees collected from developers at the time of development to help pay for the cost of providing municipal services to new development. Development charges are implemented through a development charges by-law and must be based on the findings of a development charges background study, which identifies the services to which the by-law would apply as well as the long-term capital and operating costs of each.

Inclusionary Zoning: Another tool is inclusionary zoning, which allows municipalities to require affordable housing units to be provided in new development. Inclusionary zoning was enacted through Ontario's Bill 7 as part of the *Planning Act* in 2016. Municipalities have the ability to specify requirements and standards for affordable housing units including types and sizes, affordability depth, tenure, and financial measures and incentives in the official plan and zoning by-laws. The *Planning Act* limits the implementation of inclusionary zoning to Council-approved Protected Major Transit Station Areas (PMTSAs). The City of London is in the process of developing an Inclusionary Zoning By-Law that will set out the regulations for the requirement of affordable housing units in new developments. Other initiatives that will accompany the implementation of affordable housing mandates through the Inclusionary Zoning By-Law include the Homelessness Prevention and Housing policies of *The London Plan*, an Affordable Housing Development Toolkit, and the *Housing Stability for All: The Housing Stability Action Plan for the City of London 2019-2024* (December 2019). These tools can be used collectively to regulate and encourage housing affordability in London for decades to come.

Although not directly related to the provision of affordable housing units, zoning by-laws play a

significant role in housing affordability by impacting (1) the supply of housing and (2) the cost of housing, through development regulations and associated approval processes.

2.2.1 Zoning Regulations that Limit Supply

Housing affordability is partly determined by the supply of housing in a municipality. If housing completions do not keep pace with population growth, increased demand drives up housing costs. In many ways, traditional land use zoning can limit the amount of land available for the development of housing, which has an impact on the affordability of housing.

As-of-Right Density Permissions: Many traditional zoning by-laws relegate specific forms of residential dwellings to different land use zones, limiting development in these areas to single detached, semi-detached, or multi-unit or apartment residential buildings. This serves to limit higher-density residential development to apartment neighbourhoods and mixed-use areas. Single detached dwellings, however, constitute the predominant housing form in many Canadian cities. By restricting large areas to only single detached dwellings, the housing form with the lowest residential density per lot, a significant amount of land is closed to other forms of residential development. That single detached dwellings are the most expensive form of housing has had the additional effect of excluding certain groups from living in these communities. Low as-of-right density permissions, both within established residential neighbourhoods and in areas around transit stations (i.e., areas that are often best equipped for accommodating greater residential density), result in limitations on the number of units that can be built in any given area, thereby restricting housing supply in a municipality, including affordable housing.

Location of Residential Uses: Traditional use-based zoning has historically separated residential uses from other land uses as a means of protecting residents from negative impacts of other uses (often industrial). Today, the nature of industry and work has changed, and yet residential uses remain limited to purely residential zones. Zoning regulations that do not permit residential uses in commercial or institutional areas limit the land available to residential development as part of mixed-use developments, particularly along transit corridors and on underutilized commercial plaza sites, as well as the adaptive reuse of existing non-residential buildings for residential uses.

Alternative Forms of Housing: The character of housing is not static. New technological and social innovations have resulted in increasingly economical and high-quality residential arrangements that can contribute to a broader range of housing, including modular housing and tiny homes. By limiting zoning permissions to a narrow range of housing types (most often consisting of single detached, semi-detached, rowhouse/townhouse, and multi-unit/apartment buildings), smaller, less expensive forms of housing that can provide a wider range of housing opportunities experience prohibitive barriers to construction (e.g., in the form of delays and additional costs due to additional planning approvals). Many municipalities are increasingly recognizing the benefits of permitting additional residential units as forms of gentle density in stable residential neighbourhoods. Examples include, but are not limited to, units located within same building as the main dwelling unit and in accessory buildings on the same

lot (i.e., laneway, garage, or garden suites) (see Figure 4). The additional residential units may provide housing for family members in the same household or for separate households. Other alternative forms of housing include rooming or single-occupancy housing, worker housing, and live-work units.

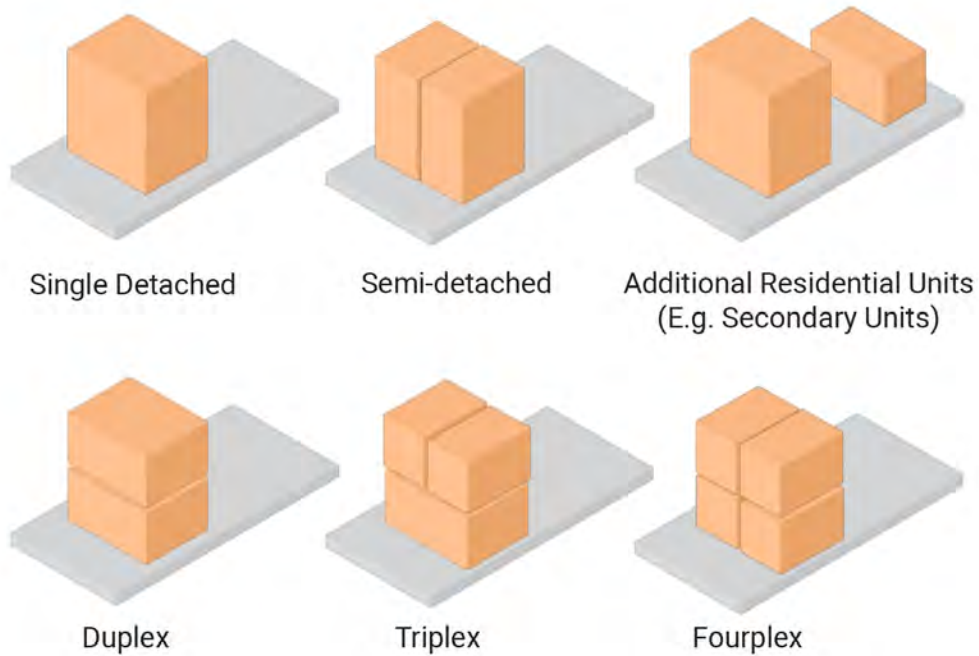


Figure 4. Different Types of Residential Development

Neighbourhood Character Policies: Many municipalities have policies and plans to protect neighbourhood character. These policies can have the unintended consequence of classifying and entrenching expectations for specific forms of housing in a given area. For example, minimum lot size and maximum lot coverage, maximum gross floor area, and maximum number of units may result in areas characterized by larger lots and fewer number of residential units.

Although *The London Plan* identifies retaining neighbourhood character as a principal tenet (e.g., including that new development should fit within the prevailing neighbourhood character of an area, *The London Plan* also emphasizes that new development does not have to mimic or be the same as development in the surrounding context to be sensitive to, and compatible with, existing built form. Permitting the conversion of single detached dwellings into multiple dwelling units, for example, is one way to provide a variety of housing choices at different price points while maintaining neighbourhood character in stable residential neighbourhoods.

2.2.2 Zoning Regulations and Factors that Increase Costs

As the costs of constructing housing are often passed onto the consumer, there are a number of municipal zoning requirements that influence the affordability of new housing.

Parking Requirements: Traditional zoning by-laws outline minimum requirements for both car and bicycle parking as part of new development. Many use-based car parking rates were developed in the late-1900s specifically to accommodate peak demand meaning they may not reflect current market factors, including increased investment in public transit. The costs of constructing and maintaining underground parking garages are significant, particularly in areas with high water tables, which are found throughout London. Moreover, as not everyone owns a vehicle, an equity issue arises as these residents are subsidizing the cost of parking for those who do. Similarly, requirements for long-term bicycle parking that must be secure and located within multi-unit residential buildings, can add additional cost to development where rates are outdated or do not reflect demand.

The City of London has initiated an Off-Street Parking Standards Review, which is exploring the possibility of reducing minimum parking standards and an open parking option whereby there is no parking standards in some Urban Place Types to allow for a more flexible and market-based approach to parking.

Engineering Standards: Municipalities have basic requirements for sanitary sewer systems, stormwater management, grading, road design, and the placement of utilities to ensure all municipal and private development projects are designed and constructed to a minimum level of performance and quality control. As the complexity of infrastructure increases, however, the design and construction costs, which are often paid for by developers, increase as well. In this way, more stringent engineering standards can increase the cost of development in the short-term (even as it decreases maintenance costs in the long-term), particularly in rural areas where existing municipal servicing is more limited.

Lengthy Development Processes: Generally speaking, the longer the municipal development approval process is, the more expensive the final development becomes due to the costs of retaining consultants. Lengthy development processes can stem from:

- Unclear expectations for the submission and review of a development application,
- A complex regulatory framework requiring additional approvals, and



Above-Grade Parking Structure in Residential Development

- Inefficiencies in the review process itself, causing delays.

While necessary, extended public consultation can create additional costs; and community opposition that leverages heritage conservation and appeal processes can also cause delays in the development review process and the construction of new housing.

Municipal Charges: Similar to development processes, municipal charges can increase the cost of development. These costs are often passed on to the consumer, thereby influencing the affordability of the resulting units. Municipal charges to developers include fees necessary for obtaining planning approvals, development charges, and parkland levies.

2.3 London Plan Policies on Affordable Housing

The housing affordability challenge in London is contextualized at the outset of *The London Plan*, with an acknowledgement that while London is one of Canada’s most affordable mid-sized cities, the steep increase in housing prices is outpacing the provision of affordable housing (LP 16).

The London Plan’s City Building policies relating to Homelessness Prevention and Housing outlines four strategic areas to meet the City’s housing goals:

- Community housing strategy;
- Creating housing opportunities;
- Affordable housing; and
- Homelessness prevention.

Policies 517-521 outline targets for the provision of affordable housing in new developments with specific reference to affordable housing to meet the housing requirements for those who need it most, and policies 505-510 speak to the importance of planning for a range of housing types and densities through infill and intensification, new neighbourhoods, the purchase of surplus lands, and brownfield rehabilitation and redevelopment. *The London Plan’s* City Building policies also stress the importance of services and other supports for those experiencing or at risk of homelessness (LP 499-501 and 524). These strategic areas will form the basis for the discussion below.

Brownfield site: Undeveloped or previously developed properties that may be contaminated. Usually, but not exclusively, former industrial or commercial properties that may be underutilized, derelict, or vacant.

The London Plan establishes guidance in support of a diverse housing landscape in London, with policies that address the need for a range of housing locations, type, size, tenure, accessibility, and density (LP 495, 505) as well as a variety of residential built form options (LP 506). Providing a diversity



Figure 5. The Spectrum of Housing Types

of housing options across the city is a fundamental objective of *The London Plan* to meet the projected requirements of current and future residents (see Figure 5).

Building on the intent of policies 505-510, further policy provides direction for affordable housing provision through new residential structures, infill, and redevelopment (LP 519). Notably, *The London Plan* establishes guidance for affordable housing provision, with the target of 25% of new housing to be affordable to low- and moderate-income households (LP 517), as defined by the PPS. It directs that this should be provided as a mix of housing types and sizes, with at least half of the affordable housing units being created for the lowest 30th percentile of household incomes in the City of London (LP 517-519). It also specifies that affordable housing should include both ownership and rental forms of housing, with a target of 50% of the rental units being available for low-income households whose annual shelter cost exceeds 50% of gross household income (LP 520). Affordable housing units may additionally be achieved through partnerships with private and/or public sector housing providers. Of note, 220 affordable housing units have been secured since 2018 through bonus zoning (a system providing additional density and height permissions in exchange for community benefits) implemented under London's 1989 Official Plan.

Furthermore, there are several opportunities identified in *The London Plan* policies as being relevant to housing affordability including: lot splitting, access to transit, conversions, revitalization, and infill development. Each is discussed below in the context of *The London Plan*.

Lot Splitting: Lot splitting, also known as a consent to sever, involves sub-dividing an existing parcel of land into multiple smaller parcels. While *The London Plan* does encourage a range and diversity of lot sizes in neighbourhoods to support housing choices, mixed uses, and accommodating a variety of ages and abilities (LP 220), it also recognizes the importance of character. Consents to sever are not permitted where they would result in undesirable changes in character and amenity of streetscapes and neighbourhoods (LP 965).

Transit Access: Because public transit is less expensive than vehicle ownership, investing in a dependable and expansive transit network of transit can help reduce housing cost burdens by reducing non-shelter costs (i.e., transportation costs). This is reinforced by the inclusionary zoning framework associated with certain higher-order transit nodes, or PMTSAs, as discussed in Section 2.2. There are opportunities created by policy and requirements from regulations for co-locating affordable housing units within and along major transit nodes and corridors.

Conversions: *The London Plan* permits the conversion of non-residential buildings to a residential use within the Neighbourhoods Place Type, in appropriate locations (LP 946). Capitalizing on underutilized buildings is a significant growth opportunity for affordable housing in London, with consideration for the intention of the Plan and the applicable zoning regulations.

Revitalization: *The London Plan* also identifies to opportunities to invest and promote affordable housing either through the redevelopment of existing public housing projects (LP 162) or revitalization efforts in neighbourhoods (LP 13). One tool that is often associated with revitalization is the Community Improvement Plan (CIP), which a municipality may introduce to identify programs and funding that will encourage improvements of the existing housing stock and the development of new housing. The City of London's *Affordable Housing CIP* is discussed in Section 3.3 of this report.

Infill Developments: Infill and intensification policies have been identified for various Place Types in *The London Plan*, including Main Streets and Neighbourhoods, as “residential intensification means the development of a property, site, or area at a higher residential density than currently exists” (LP 938). Infill and intensification limits sprawl (i.e., outward growth) while making efficient use of existing services and facilities (LP 59, 876). Various forms of intensification identified in *The London Plan* (ranging from discreet to more visibly obvious forms) include:

- Additional residential units,
- Converted dwellings,
- Adaptive re-use of non-residential buildings for new dwelling units,
- Lot creation through consent to sever (i.e., lot splitting),
- Infill, and Redevelopment (LP 939).



Residential Intensification in London

The London Plan also speaks to allowing infill development where appropriate in Rural Neighbourhood Place Types, although the extension of Rural Neighbourhood areas for residential purposes is not permitted (LP 1241).

In this way, *The London Plan* establishes a series of policies to support the provision of affordable housing and identifies a number of opportunities that may allow for increased affordable housing supply in the city over the next 20 years.

2.4 Existing Zoning Related to Affordable Housing

Although a comprehensive zoning by-law is being written to implement *The London Plan*, a number of opportunities exist in retaining or modifying features of the current London Zoning By-law (Z.-1) to support housing affordability.

Secondary dwelling units are currently permitted in a number of residential zones across the city in the form of “Accessory Dwelling Units” and “Secondary Farm Dwellings.”

Additionally, there is a discrete land use zone dedicated specifically to permit temporary and portable “Garden Suites” (the “Temporary Garden Suite Zone”). It is often understood that additional residential units, secondary suites, and garden suites are opportunities to increase housing affordability by presenting options for rental income or multi-family living arrangements that can offset the annual cost of the primary dwelling. However, permissions for these uses are currently limited across the city. Consideration for expanding zoning permissions for additional residential units, where appropriate, will be fundamental to the development of the new zoning by-law.

Z.-1 is unique in that it contains uses that recognize conversion from one use to another and a flexibility in combining discrete land uses. This is not often seen in zoning by-laws in Ontario. Alternative options to traditional dwelling units have the potential to support housing affordability in London. For example,

- “Apartment Hotels,” permitted in the Downtown Area 2 (“DA2”) zone variation, allows up to 50% of a hotel’s living accommodation to be dwelling units.
- “Converted Dwellings,” provide as-of-right permissions for an existing residential building to increase the number of dwelling units within the existing structure.

However, their applicability is limited to only a few zones across the city, and as a result, the Z.-1 permissions do not go far enough to significantly impact housing affordability. Expanding their applicability is one way London’s new zoning by-law can support housing affordability through new regulation. However, there are other factors, including provincial policy and local housing market conditions, that can promote or limit the development of affordable housing. As such, zoning must be implemented in tandem with complementary tools and initiatives (see examples in Appendix C).



Mixed Residential Density in Low-rise Form



Apartment Building near Western University Campus

3.0 **PRELIMINARY RECOMMENDATIONS**

3.1 Preliminary Directions

In February 2022, the provincial government released the report of the Ontario Housing Affordability Task Force, which aims to close the housing supply gap and improve housing affordability through a series of 55 recommendations, such as increasing density and supporting necessary infrastructure investments. Soon after, on March 30th, the provincial government introduced Bill 109, the *More Homes for Everyone Act, 2022*, which aims to reduce red tape, accelerating the development application review timelines and streamlining the approvals process. Bill 109 received Royal Assent on April 14, 2022.

Other strategies were also analyzed by the Consultant Team for how they may apply to the development of affordable housing in London, including:

Permit Smaller Development: The new zoning by-law should consider supporting smaller-scale development through possible reductions in minimum lot sizes where appropriate. This will serve to increase the number of units possible per area over the long-term by permitting the splitting of existing lots and allowing for small-lot subdivisions. Smaller lots are also more appropriate for alternative forms of housing, such as modular housing and tiny homes, which can serve to increase the diversity of housing possible in the City of London. It is recognized that an absolute minimum lot frontage exists to ensure sufficient access for servicing connections, including water, sanitary, stormwater, hydro, and gas. This and other technical design considerations, including driveway separation and on-street parking, will need to be considered when reviewing possible changes to minimum lot sizes.

Permit Greater Density Development: The new zoning by-law should permit, where possible, greater height and density permissions to increase opportunities for the provision of affordable housing. *The London Plan* creates a variety of opportunities for intensification particularly as the policies relate to the Downtown, Transit Village and Rapid Transit Corridor Place Types and Protected Major Transit

Areas. In these areas, by softening angular plane and floorspace area ratio regulations, additional units can be accommodated in areas of planned intensity. Additional opportunities for intensification also exist in stable neighbourhoods, which currently only permit single detached dwellings, by permitting a more diverse range of building types that provide for additional dwelling units on a single residential lot. As increasing residential density permissions in existing residential zones would effectively multiply occupancy in these areas, a review of the municipal servicing available in the area would be necessary to ensure sufficient infrastructure to support this level of residential intensification outside of the Downtown, Transit Villages, and at station locations along the Rapid Transit Corridors.

Allow Flexible Use of the Existing Building Stock: Regulations in the new zoning by-law should encourage the construction of additional residential units and accessory suites as a means of providing gentle density and broadening the range of housing options available to London's residents. The conversion of existing non-residential buildings to residential uses provides an additional source of housing through adaptive re-use of the existing building stock. Regulations relating to conversions should be relaxed to avoid introducing barriers to redevelopment. In the past, minimum parking requirements, which varied significantly between uses, limited the feasibility of reusing existing buildings. As the City of London looks to eliminate minimum parking standards, other zoning barriers to conversions should be considered and addressed in the new zoning by-law. In general, providing additional zoning permissions or relaxation of more restrictive regulations can encourage the revitalization of the existing housing stock, whether through the conversion of use or redevelopment of London and Middlesex Community Housing's portfolio.

Introduce More Land for Residential Development: A number of areas in the City of London are currently closed to residential development. By introducing residential permissions in commercial areas, including along arterial roads, in shopping plazas, and other greyfield sites, additional land is made available for new housing, while also encouraging the redevelopment of underutilized land with new residential mixed-use developments. Introducing residential uses on publicly owned lands, especially properties with existing community-based facilities such as schools, libraries, and community centres, could represent an immediate opportunity to co-locate new affordable housing units with community services.

As some forms of residential uses are limited to discreet parts of the city, the City could better meet the housing needs of its population by expanding the range of permitted housing forms throughout the city to include:

- Additional residential units;
- Pre-fabricated housing;
- Single-occupancy housing;
- Worker housing; and
- Live-work units.

Greyfield site: Previously developed lands that do not have any known environmental contaminants but may not be economically viable in their current state, such as declining retail plazas. This is not the same as a “brownfield site”, which has known environmental contamination that must be remediated prior to any redevelopment.

Encourage the Development of Flexible Housing: Flexible housing allows homeowners to reconfigure their house as their lifestyle changes, involving minimal modifications and expenditures (e.g., rooms could change in size, or a complete floor could change in function) (see Figure 6). Flexibility in building design can similarly facilitate the conversion between residential and non-residential uses as the nature of markets change over time. Where the market does not currently exist to require non-residential uses at-grade in higher-density developments, providing a minimum ground floor height would allow for the possibility of future conversion. Similarly, designing integrated and underground parking facilities with flat roofs, removable spiral ramps, and minimum ceiling heights could support conversion to residential or other non-residential uses in the future as travel behaviours and technological advancements reduce dependence on single passenger automobiles. The design of flexible buildings, however, will need to take into consideration servicing needs that may differ between residential and non-residential uses.

Introduce Alternative Engineering Standards: Evolving engineering standards should be taken into consideration in the drafting of a new zoning by-law to ensure outdated lot size requirements are not brought forward. Although outside the scope of a new zoning by-law, alternative development standards, or the relaxing of conventional engineering standards relating to roadway design (narrower right-of-way widths) and stormwater management (including encouraging green infrastructure), particularly in rural areas, can additionally serve to decrease development costs for projects that meet certain requirements (e.g., affordability criteria).

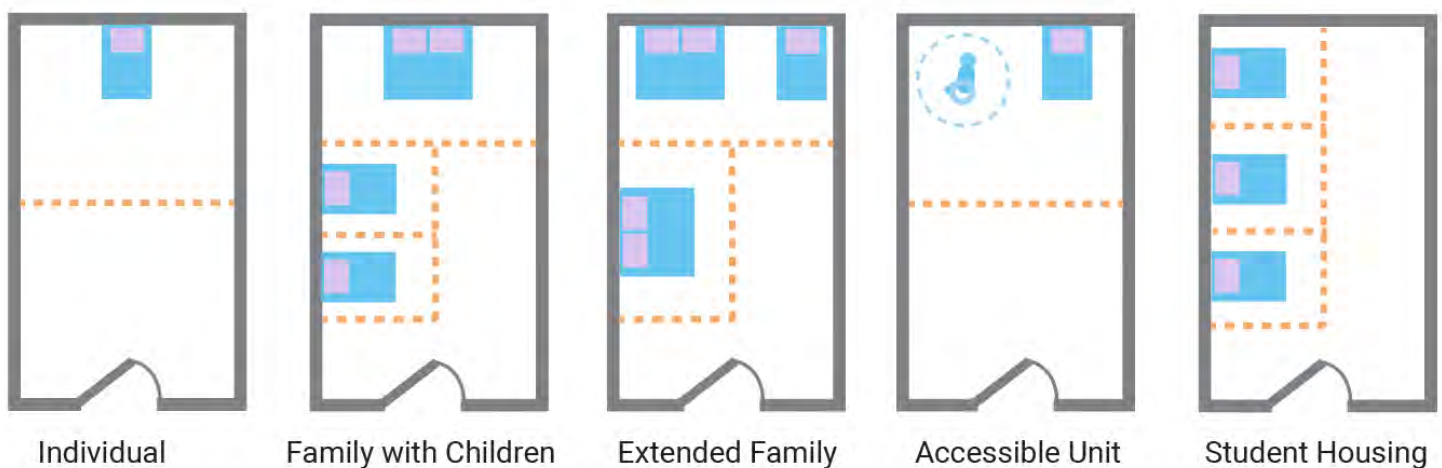


Figure 6. Flexible Housing

Reduce Costs of Development and Streamline Lengthy Development Processes: Reducing some of the more costly requirements for housing developments could encourage those who would want to develop housing in London. Reducing vehicular and long-term bicycle parking requirements, which can be costly to developers and potentially underutilized by residents, is one example of a zoning measure that could facilitate less expensive residential development.

Although outside the scope of a zoning by-law, reductions in municipal charges for projects with affordable housing components and exemptions from site plan control approvals for infill projects below a certain number of units could additionally reduce cost and time barriers to the provision of housing thereby increasing affordable housing units and housing affordability more generally in the long-run. Prioritizing the review of development applications with affordable housing components can further facilitate their construction.

3.2 Key Recommendations

The recommendations in this report are not intended to prioritize the construction of housing over other planning priorities. Nor is it the intention for all of London to become a dense urban core in the name of housing affordability. *The London Plan* already identifies where residential and employment intensification should occur; the zoning considerations explored here represent a lens through which the new zoning by-law can address housing affordability depending on the specific development challenges and opportunities of the various Place Types. The nature of regulations will depend on the vision for each Place Type and whether a certain form of development is to be encouraged (through more permissive regulations) or managed (through more stringent regulations).

Some recommendations could be applied across the City of London. The challenge will be to identify where opportunities within specific Place Types exist as they relate to permitting a greater range of residential uses in smaller development, at higher densities, and in more areas of the city. Although an in-depth analysis into each Place Type will occur at a later stage, Section 3.2.1 below describes how high-level housing related regulations could be implemented in the City's new zoning by-law.

3.2.1 Housing Affordability by Transect

As described in more detail in *Discussion Paper #7: Implementing the Zone*, the new zoning by-law's approach to balancing the regulation of use with form and intensity will be informed by a hybrid form-based zoning system. Form-based codes tend to delineate transects, or cross-sections of a municipality, illustrating the gradual change in intensity (from least to most intense) and form (also see *Discussion Paper #2: Zoning in on Intensification*) as you move from the periphery in towards the urban core. However, the transect approach can also illustrate the range and diversity of planning challenges across a municipality depending on the nature of intended development. Table 1 illustrates how the preliminary directions in Section 3.1 could be applied to groups of Place Types.

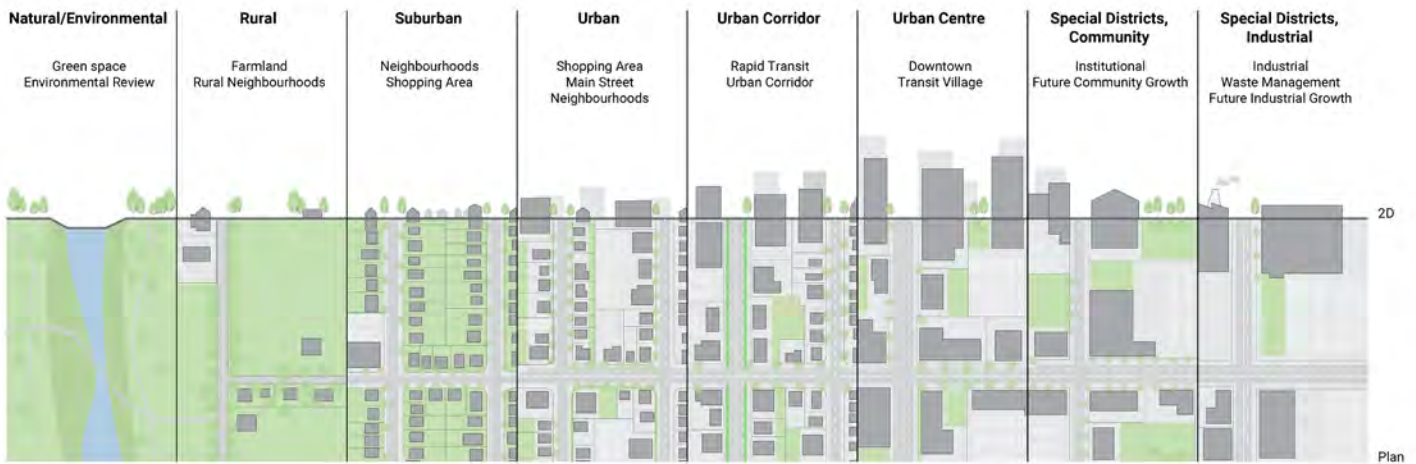


Figure 7: Transect Application to London's Place Types

3.2.2 Incentivize Affordable Housing

In years past, municipalities had the option of density bonusing under Section 37 of the *Planning Act*, where municipalities could request community benefits when a development application requires a zoning by-law amendment (i.e. is requesting additional density or height above what is permitted in the zoning by-law). Although the threshold that would trigger Section 37 provisions as well as typical benefits (including the provision of affordable housing units in the new development), are outlined in official plan policies, this process typically took the form of a negotiation with the local councillor in order to determine the magnitude and nature of the requested benefits.

Table 1. Transect Application to London's Place Types

Transect Application to London's Place Types		
Sample Transect (Place Type Districts)	London Plan Place Types	Housing Affordability Recommendations
Natural/Environmental	Green Space	N/A
	Environmental Review	
Rural	Farmland	<ul style="list-style-type: none"> • Explore alternative engineering standards • Permit a wider range of housing forms
	Rural Neighbourhoods	
Suburban	Neighbourhoods	<ul style="list-style-type: none"> • Reduce minimum lot sizes • Permit a wider range of housing forms

Urban	Shopping Area	<ul style="list-style-type: none"> • Reduce minimum lot sizes • Permit a wider range of housing forms • Permit residential uses in commercial areas • Increase density permissions • Support adaptive re-use through flexible design
	Main Street	
	Urban Corridors	
Transit Corridor	Rapid Transit Corridors	<ul style="list-style-type: none"> • Require minimum densities • Support adaptive re-use through flexible design
	Transit Village	
Urban Centre	Downtown	<ul style="list-style-type: none"> • Requirement minimum densities • Support adaptive re-use through flexible design
Special Districts, Community	Institutional	<ul style="list-style-type: none"> • Permit a range of housing forms
	Future Community Growth	
Special Districts, Industrial	Industrial	N/A
	Waste Management Resource Recovery Area	
	Future Industrial Growth	

Recent changes to provincial legislation has meant that municipalities in Ontario will no longer have this tool at their disposal as of September 18, 2022. As these changes are relatively recent (Bill 108, which introduced changes to Section 37 of the *Planning Act*, received Royal Assent on June 6, 2019), municipalities are still in the process of exploring alternatives to what remains an important revenue tool. Incentive zoning, is something that has been practiced in the United States for several decades now and could represent an opportunity to incentivize and encourage development that provides affordable housing units or less expensive forms of housing.

Typically, American municipalities use a combination of financial incentives such as fee waivers, expedited reviews, and funding programs where a certain number of affordable housing units are provided in new development. Although additional height or density permissions are the most common regulatory incentive, some municipalities offer reduced parking, open space, setback, and minimum lot area/width requirements where certain affordability conditions are met. Pierce County in Washington, for example, offers a rate of additional market rate housing units per low-income rental or owner-occupied unit provided in addition to reduced height standards, off-street parking requirements, and on-site active recreation areas depending on the percentage of affordable housing units (see Appendix B). Some of these reduced standards have locational criteria, so that they only apply in certain zone classifications or within a certain distance of a transit stop (in the case of parking) or a public park (in the case of open space). All of these measures are intended to encourage rather than require the construction of new affordable housing.

Although incentives can be used to compensate or offset the costs of mandatory affordable housing

contributions (in systems similar to the new inclusionary zoning system in Ontario), they can similarly be used as part of voluntary systems to encourage and reward developments that choose to provide them. These mechanisms, however, require clear definitions of 'affordability' (i.e., affordable for whom?) and the expected duration of affordability.

Similar performance standards can be used to incentivize the development of smaller units through the identification of a benchmark unit size, below which the difference in square footage could be provided as additional gross floor area that can then be used to construct larger units. This is different from imposing a maximum unit size, which may serve to restrict development rather than encourage a particular form of development depending on the financial feasibility of the project. The challenge with incentive zoning is identifying measures that provide sufficient incentive to developers while not undervaluing the public benefit being requested in exchange. Any performance standards introduced in London's new zoning by-law will be subject to Section 34 of the *Planning Act*, which outlines what can and cannot be regulated by a zoning by-law.

3.2.3 Balancing Housing Affordability with Other Planning Priorities

There are significant questions about trade-offs between planning (or zoning) for housing affordability and other priorities, such as urban sustainability, heritage preservation, and quality of the public realm (see Figure 8). As outlined in Section 2.3, opportunities for increasing housing supply are related to maximizing the number of units that can be constructed on a given site. However, by maximizing coverage on a residential lot, landscaping opportunities are lost, impacting the character of mature residential neighbourhoods as well as urban sustainability through reduced stormwater infiltration and fewer trees providing cooling and shading services. Reducing minimum lot sizes can have a comparable effect to increasing maximum coverage in addition to introducing design challenges as lot sizes decrease. Similarly, eliminating or scaling back regulations intended to minimize the impacts of higher-density development on surrounding lower-density areas, such as floor plate restrictions, could result in increased shadowing.

This balancing act extends to development application review processes and engineering standards. Reducing



Figure 8. Balance between Housing Affordability and Other Priorities

timelines may compromise the ability of staff to fully review individual and potentially cumulative impacts of development applications, while engineering standards exist to ensure safe and high quality servicing is provided in a fiscally responsible manner. As such, the feasibility of the recommendations made in this report will depend not only on the reconciliation of competing policy priorities but consideration for implementation and enforcement of new regulations and standards.

3.3 Additional Resources and Tools

The increased provision of affordable housing is supported by the City of London's Housing Access Centre, Housing Development Corporation, various other City departments and agencies, and City Council.

Council's Strategic Plan identifies the need to increase affordable and quality housing options and, to realize that goal, proposes to utilize innovative tools such as zoning and investments to facilitate affordable housing development. In addition to zoning, there are several resources and tools that the City has in place to accomplish this vision, including the *Affordable Housing Community Improvement Plan (CIP)*, *Housing Stability for All (2019-2024)*, and an Affordable Housing Development Toolkit.

A CIP is a tool under Section 28 of the *Planning Act* that allows municipalities to support improvements or development in a specific project area. London's *Affordable Housing CIP* includes a review of land use planning policies, zoning, and practices, analyzed housing data in London, and conducted consultation to establish a framework that would support the development of affordable housing units to meet the identified needs. The *CIP* is applied city-wide and offers financial incentives for affordable housing developments. They include an Affordable Housing Development Loan program and an Additional Residential Unit Loan program, intended to offset the costs of building affordable housing or additional residential units.

The City's *Housing Stability for All* was originally published in December 2019 with a 2020 Update and Priorities for 2021 released a year later. The plan aims to address homelessness through four strategic actions:

1. Respond to the homelessness crisis;
2. Create more housing stock;
3. Provide housing supports; and
4. Transform the service system.

Table 2, outlines the strategic focus areas that may be relevant to the new zoning by-law and commentary on the applicability to City Planning.

The City of London maintains a registry of affordable housing buildings and developments that are

Table 2. *Housing Stability for All* - Actions for City Planning

Housing Stability for All - Actions for City Planning		
Program or Service	Description	Applicability to City Planning
Respond to the Homelessness Crisis		
Implement unique opportunities to support rapid rehousing options.	Transitional supportive housing program aimed at continuing service provision for individuals from the temporary winter resting space location by supporting them to achieve housing stability and permanent housing.	Consider integrating permissions in the new zoning by-law for temporary uses and supportive housing in strategic locations.
Create More Housing Stock		
Develop publicly owned and available lands for affordable housing.	City of London and Housing Development Corporation announced a partnership with Ontario Aboriginal Housing Services for 42 affordable multi-residential units. Five new sites are under development or in the pre-development stage for new affordable housing.	Consider future partnerships and opportunities to fast-track rezoning approvals for affordable housing projects.
Implement tools, policies, and programs (the municipal housing toolbox) to create new affordable housing through a <i>CIP</i> , zoning by-law update, inclusionary zoning, bonusing, secondary units, or others	Approval of affordable housing through bonus zoning and legal agreements, with no additional cost to the municipality. A total of 220 bonus units have been negotiated and approved through Council since 2018.	The 2025 development charges study will explore development charge recovery for housing services, including affordable housing.
Provide Housing Supports		
Support movement and choice within a range of housing options and services based on the needs and interests of individuals and families.	Work with individuals and families to determine their support needs and expand programs that assist them in moving towards their housing goals.	Ensure zoning is permissive and allows for a range of housing options.
Assist individuals and families to move towards community integration and belonging.	Connect residents with community-supportive services and resources in their community. Increase employment opportunities for families and individuals.	Consider in zoning the proximity of residential areas to community services and facilities, as well as employment opportunities.
Transform the Service System		
Articulate a clear vision for the delivery of <i>Housing Stability for All</i> .	A regular quarterly housing report will provide Council and the community with frequent proactive updates on all housing initiatives across various City service areas. The Housing Stability Action Plan Implementation Team created a webpage that will be updated quarterly to provide the most up-to-date information.	Planning and Development (zoning team) should participate and stay updated on implementation of housing initiatives through the Housing Stability Action Plan.

<p>Ensure Council has strong information from committees and community networks and other mechanisms to support housing stability.</p>	<p>There are eight municipal teams that meet regularly to advance urgent housing, provide latest statistics on housing, advance funding opportunities, and ensure common understanding of housing related strategies.</p>	<p>Engage in regular meetings on urgent housing needs and support Council in understanding affordable housing initiatives.</p>
--	---	--

going through the planning approval process. This registry provides a resource for residents looking for information on affordable housing. These developments are funded in partnership with the Government of Canada, the Province of Ontario, and the City of London.

Finally, the Investment in Affordable Housing program is an example of a federal-provincial-municipal collaboration in support of the development of affordable housing. Under the program, new homes are being created in the City of London (and the broader Middlesex County) in which rents are to be set at or below average market rent for the London Census Metropolitan Area as determined by the CMHC.

There are a number of other programs and services available in London to reduce homelessness and support affordable housing (see Appendix C). Achieving housing affordability will require a coordinated effort with input and cooperation from all City Divisions and stakeholders.

3.4 Next Steps

The review presented in this discussion paper represents high-level zoning considerations that will be explored in more detail with an in-depth review of each Place Type. The transect model (see Section 3.2.2) will provide the organizing framework for determining zoning approaches by Place Type Districts, which will be refined to provide specific regulations for each Place Type and, where appropriate, sub-types. Public feedback on this and other discussion papers will feed into the process as the ReThink Zoning project progresses.



Figure 9. Affordable Housing Development at 1045 Dundas Street in London (Source: The Housing Development Corporation, 2018)



Source: The London Plan

APPENDICES

Appendix A. Methodology

In developing this discussion paper, the Consultant Team undertook the following steps:

- **Site visits:** On February 9, 2022, the Consultant Team visited multiple sites in the City of London. Notable housing sites included:
 - 380 Princess Avenue: a 4-storey apartment building in the West Woodfield Heritage Conservation District.
 - 32, 36, and 40 York Street: a 24-storey mixed-use apartment building in the Downtown Heritage Conservation District.
 - 162 Wortley Road: a 3-storey mixed-use apartment building.
 - 152 Elmwood Avenue East: a 3-storey infill development duplex.
- **Review of *The London Plan* policies and other strategies:** A review of relevant policies related to affordable housing, infill development, lot splitting, municipal infrastructure, neighbourhood character, and additional residential units was conducted to better understand the current policy context.
- **Demographic analysis:** This involved identifying who is being impacted (e.g., low- and middle-income households), the ages of these populations, and the jobs that these populations hold.
- **Literature review:** A literature review was conducted to explore the role of zoning and its impact on housing affordability, with particular emphasis on the broader Ontario experience, innovative approaches to housing provision, and considerations for rural development.

Appendix B. Incentive Zoning in Pierce County, Washington

As described in Section 3.2, incentive zoning is a prevalent practice in the United States, whereby alternative development standards or regulations apply for applications that include affordable housing units. Pierce County’s County Code in Washington provides one example of how regulatory incentives can encourage (rather than require) the development of affordable housing. Tables B1 and B2 summarize the bonus housing unit rates and alternative development standards. Not included here are financial incentives also outlined in the County Code.

Table B1. Summary of Bonus Housing Unit Rates

Bonus Housing Unit Rates			
Tenure of Low-Income Unit	Bonus Unit Rate	Density Limitation	
		Single-Family Residential Zones	Multi-Family/ Mixed Use Zones
Rental	1.5 bonus market rate units for each low-income affordable housing unit	133% maximum density	120% maximum density
Owner-Occupied	1.0 bonus market rate units for each low-income affordable housing unit		

Table B2. Summary of Alternative Development Standards

Alternative Development Standards		
Development Standard	Location Criteria	Reduced Rate
At least 10% of the housing units within the project are affordable units for low-income households		
Height Standard	Project located within a Town Center or Urban Corridor zone classification	May be increased up to 10 ft
Parks and Open Space Requirement	Project located within a ½ mile walking distance to an existing recreation space, such as a public park, university, or public school property (free and accessible to the general public after school hours)	Ratio of on-site active recreation area may be reduced to 1:1 for active recreation area provided off-site
Minimum Lot Area/Width	-	May be reduced by 20%
At least 20% of the housing units within the project are affordable units for low-income households		
Maximum Height	Project located within a Town Center or Urban Corridor zone classification	May be increased up to 20 ft
Off-Street Parking Requirement	-	Not required to be located adjacent to the housing unit it serves (may be provided within a parking court within 660 ft of the housing unit)
Applicable only to the Affordable Low-Income Units within a project		
Off-Street Parking Requirement	-	Multi-family projects that maintain the standard may increase the number of compact stalls to 75% of total parking stalls
	Project located within a safe ½ mile walking distance of a scheduled transit stop	1 space per multi-family dwelling unit

Appendix C. Complementary Resources and Tools (outside City Planning)

As described in Section 3.3, there is a variety of services and programs provided by municipal, provincial, and federal governments, supported by a network of community service providers, that would complement the new zoning by-law. Table C1 provides a summary of many of the options that are available to the City to help it meet its affordable housing policy goals as provided in *The London Plan*.

Table C1. Summary of Complementary Resources and Tools

Complementary Resources and Tools	
Program or Service	Description
Supportive housing	Residents receive formal support from a local social service agency to maintain their tenancy and live independently in the community.
Social housing	Government-assisted housing that provided rent-geared-to-income and affordable rental units to households with low-to-moderate incomes. Social housing can include: public housing, not-for-profit, and co-operative housing.
Coordinated Access	A service approach that helps to prevent and divert households from experiencing homelessness by assessing their situation and connecting them to financial, social services, and natural supports in a coordinated manner.
Canada-Ontario Housing Benefit	A monthly portable housing benefit program that assists eligible households with their housing costs. A financial subsidy is paid directly to households or landlords to support housing affordability and stability within the private rental market. The COHB pays the difference between 30% of the household's income and the average market rent in the area. For recipients of social assistance, the COHB will pay the difference between the shelter allowance and the household's rent and utilities costs.
Ontario Renovates Program	A federal-provincial funding program that offers financial assistance to low- and moderate-income households for seniors 60 years or older and persons with disabilities. The program is administered by the City of London, Housing Division, and includes limited funding to homeowner(s) and landlord/tenant rental units.
Capital Repair and Improvement Funding – Social Housing Providers	The capital funding program administered by the City of London is meant to bridge some of the funding gaps to help stabilize and grow the social housing sector. This program is made possible by funding by all three levels of government.
Student Housing Mediation Services	The Mediation Service is a free confidential resource which seeks to assist in the speedy resolution of problems among students or between landlords and students or London residents and students.

Coordinated Informed Response	This trained, highly engaged team consists of City of London employees, London Police Services, and community outreach agency, London CARES, offer support and services to Londoners living unsheltered. This team also works side-by-side with London businesses to help address issues and challenges.
Shelters and Drop-in Centres	London has 12 emergency shelters and drop-in centres that provide shelter and services to those in need.
Mental Health and Addiction Services Resources	London has five support services for mental health.
Community Resource Guide	The Help Yourself Through Hard Times guide provides a listing of services to help London residents navigate the challenges of financial hardships.
The Street Level Women at Risk Collaborative	A service to assist women who are experiencing homelessness to secure permanent housing with supports.
Strategic Actions of London's Housing Stability for All	
Respond to the Homelessness Crisis	
Develop a Coordinated Access system that addresses the immediate needs of individuals and families.	The Positive Pathways Initiative supports individuals connected to the criminal justice system to connect with housing services.
Provide the right level of support at the right time to decrease the use of emergency services.	My Sisters Place (Canadian Mental Health Association) launched an overnight Resting Space program for women. The program serves up to ten women nightly and provides female-identified individuals a space to rest, meet their basic needs, and access supports.
Provide financial supports to assist individuals to secure housing.	The Housing Stability Bank supports households with utility and rental support. Between January and July 2021, more than 800 households were assisted.
Engage partners in the Coordinated Informed Response team, including those with lived and/or living experience. Work with London Police Service and Emergency Medical Services to establish an engagement protocol to support individuals experiencing unsheltered homelessness.	The Core Area Prolific Offenders Diversion Project is a pilot partnership between London Police Service and the City of London aimed at reducing interactions with the justice system for a list of prolific offenders through housing stability. The City of London Housing Stability Services provides a peer support outreach team to this program and the City of London Life Stabilization provides client support.
Improve diversion practices to better assist individuals and families to secure housing.	London's Coordinated Access team increased staffing to better respond to individuals and families experiencing homelessness. Client Service Representatives respond to inquiries from the general public looking to access services.

Create More Housing Stock	
Explore opportunities to stimulate new affordable housing through government legislation.	CMHC has announced that London will receive \$10.8 million through the federal Rapid Housing Initiative. A City partnership with Habitat for Humanity has assisted in funding 20 units of affordable home ownership. CMHC has also announced co-investment funding for two affordable housing projects.
Provide Housing Supports	
Work with individuals and families to determine their support needs and expand programs that assist them in moving toward their housing goals.	There were 29 new Canada-Ontario Housing Benefit participants for a combined total of 406 from the last report with the expectation of supporting an expected additional 11 households. In addition, six new Community Housing Bridge allowances were approved, providing ongoing housing allowances to eligible applicants (52 to date); 25 new rent supplements were provided to federal co-op providers with expired operating agreements; and 21 new housing allowances were funded as part of the provincial Anti-Human Trafficking program initiative.
Provide education and supports for landlords and tenants to improve housing stability.	Support funding for “Dealing with Difficult People” workshop training was provided and attended by 11 co-op property managers.
Develop and implement an eviction prevention strategy to support housing stability.	The Housing Stability Table’s eviction prevention program helped 42 households retain their housing.
Transform the Service System	
Maximize provincial and federal funding to meet agreement requirements and to enhance housing stability.	100% of federal and provincial funding is planned to be secured.



RETHINK ZONING

DISCUSSION PAPERS

5

ZONING IN ON THE CLIMATE EMERGENCY

JUNE 2022



Land Acknowledgement

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.





Executive Summary

This paper considers the relationship between zoning and climate change, focusing on recommendations related to how the new zoning by-law can help London achieve a more resilient future. It describes how the City can minimize climate-related damage and risk, and how to encourage sustainable infrastructure and design via zoning regulations.

The increasing frequency, impact, and scale of extreme weather conditions poses significant risks to the environment, economy, and public health. The City of London recently declared a climate change emergency, to strengthen its commitment to protecting London's economy, ecosystems, and community from the impacts of climate change. Prior to this, the City developed policies in *The London Plan* to support sustainability, including the direction to "become one of the greenest cities in Canada."

The London Plan emphasizes that climate change is a challenge and introduces policies to deal with the impacts of climate change. The new zoning bylaw will implement the policies of *The London Plan*. Drawing on research and examples from other municipalities, this paper explores how sustainable policies in *The London Plan* can be implemented through a new, comprehensive zoning by-law, and provides recommendations to consider for the specific Place Types identified in *The London Plan*.

To actively respond to the climate emergency, the new zoning by-law must consider risks associated with climate change, and apply a climate-focused lens in developing zoning regulations that mitigate climate change impacts and promote sustainable development. The new zoning by-law can assist the City of London in promoting sustainability, resiliency, and environmental stewardship. Some preliminary recommendations for the new, comprehensive zoning by-law include:

- Applying a holistic and integrated approach to addressing climate change that includes economic and social well-being;
- Protecting areas that are vulnerable to source water contamination, flooding, erosion, and other natural hazards;
- Concentrating development in appropriate areas and away from environmentally sensitive lands by permitting higher intensification and density in urban areas and encouraging a mix of housing forms and infill in residential neighbourhoods;
- Promoting transit-oriented and transit-supportive development through compact, mixed-use, street-oriented development, and requiring infrastructure requirements that support public transit and active transportation modes;
- Requiring open space, landscaping, and greening of impermeable surfaces to manage stormwater;
- Considering and including uses for the production, conservation, and management of systems, such as district energy systems, solar fields, and wind farms, where appropriate.
- Utilizing performance standards for Low Impact Development features and energy-efficient building design.



TABLE OF CONTENTS

1.0 INTRODUCTION 10
1.1 Purpose 11

2.0 BACKGROUND 12
2.1 What is the Climate Emergency? 13
2.2 Climate Change and The London Plan 15

3.0 MUNICIPAL AND INTERNATIONAL APPROACHES 18

4.0 RECOMMENDATIONS 22
4.1 Preliminary Recommendations 23
4.2 Additional Planning and Municipal Tools for Implementation 33
4.3 Next Steps 33

APPENDICES 34
Appendix A. Methodology 35
Appendix B. Addressing Climate Change through Local Planning 36
Appendix C. Summary of Climate Change-Related Policies in The London Plan 39
Appendix D. Traditional Zoning and Form-Based Codes 46
Appendix E. Policy and Legislative Context 48
Appendix F. Municipal Scan 54
Appendix G. International Examples 62
Appendix H. Specific Interventions by Transect 64
Appendix I. Transect Application to London’s Place Types 66
Appendix J. Planning and Municipal Tools for Climate Change Adaptation 67

LIST OF FIGURES

Figure 1. Key components of the Integrated Neighbourhood Approach	20
Figure 2. Socioeconomic interventions at the neighbourhood level.	21
Figure 3. Climate-Focused Recommendations for the Rural Transect.	26
Figure 4. Climate-Focused Recommendations for the Suburban Transect.	27
Figure 5. Climate-Focused Recommendations for the Urban Centre Transect.	28
Figure 6. Climate-Focused Recommendations for the Urban Corridor Transect.	30
Figure 7. Climate-Focused Recommendations for the Special District Transects.	32

LIST OF TABLES

Table 1. Climate Challenges for Canadian Communities.	13
Table 2. Preliminary Climate-Focused Recommendations for the Zoning By-law.	23



Source: The London Plan

1.0 INTRODUCTION

1.1 Purpose

The climate emergency is intrinsically related to environmental, social, and economic well-being. This discussion paper explores the role of zoning as an implementation tool to help address the climate emergency and support the City of London’s sustainability, resiliency, and environmental stewardship goals. This discussion paper should be considered as one in the series of discussion papers prepared for the ReThink Zoning initiative.

The new, comprehensive zoning by-law will support a coordinated approach for community sustainability by developing regulations that are aligned with the vision, objectives, and policy direction of *The London Plan* (2016), as well as the City’s *Draft Climate Emergency Action Plan*, conservation authority regulations, and other municipal plans and strategies. The methodology used for this paper is provided in [Appendix A](#).

Guiding Questions

This discussion paper was developed to address three guiding questions:

1. What are some of the greatest climate-related challenges London is facing?
2. How does *The London Plan* address climate change?
3. How can zoning help mitigate and adapt to the impacts of climate change?


2.0 **BACKGROUND**




2.1 What is the Climate Emergency?

The Canadian Context

The Oxford Dictionary defines the climate emergency as “a situation in which immediate action is needed to reduce or stop climate change and prevent serious and permanent damage to the environment”. The climate emergency is likely to result in an increase in frequency, impact, and scale of extreme weather conditions, including significant flooding, heavy precipitation, drought, extreme heat, poor air quality, and associated public health risks. Climate change impacts are experienced by cities at a variety of scales and intensities. The Canadian Institute of Planners’ (CIP) *Model Standard of Practice for Climate Change Planning* notes that Canadian communities may be impacted by the following core climate challenges:

Table 1. Climate Challenges for Canadian Communities.

Climate Challenges for Canadian Municipalities	
 Rising temperatures	Average temperatures in most Canadian communities are expected to rise between 1 to 2°C by 2020, 2 to 4°C by 2050, and 5 to 10°C by 2090. This can result in a greater frequency of extreme heat events and degraded air quality due to the urban heat island effect and air pollution. Although the shift in temperature can benefit agriculture and forestry by lengthening the growing season, it can also increase pests and the potential for the spread of diseases.

 <p>Changes in patterns and levels of precipitation</p>	<p>Climate change may increase the level and intensity of precipitation (e.g. rain, hail, snow etc.) and increase heavy precipitation events. Higher temperatures, however, may result in frequent drought and wildfires in some areas, impacting water levels in rivers and lakes.</p>
 <p>Extreme weather events</p>	<p>Extreme weather events, such as flooding and weather-related damage to communities, are expected at a greater frequency, particularly in coastal regions.</p>
 <p>Rising sea levels</p>	<p>Rising sea levels will lead to increased coastal erosion and vulnerability to flooding. This may also result in salination of water supplies due to higher concentrations of salt in the water table.</p>

London has been dealing with the impacts of a changing climate, and is expected to experience more frequent snow squalls, more extreme flooding events, high winds, and extreme summer temperatures. Major floods in the Upper Thames watershed have occurred between January and April, although flooding is possible at any time of the year. Over the past half century, London has been impacted by a number of major flood events, with the most recent flood occurring in 2018. The City has also acknowledged that other climate-related challenges may impact London, including greater cost and reduced availability of food, increased property insurance costs, and loss of biodiversity (2019).

London recently joined a growing list of cities that have declared a climate change emergency, which has included a call to consider the environmental impact of key City decisions. The declaration defines an emergency as “an often dangerous situation requiring immediate action”. The purpose of the declaration is to strengthen the City’s commitment to protecting London’s economy, ecosystems, and community from the impacts of climate change.

Although developed prior to London Council’s *Declaration of Climate Emergency*, the policies in *The London Plan* support sustainability, including the direction to “become one of the greenest cities in Canada.” The role that urban planning and zoning play in how cities mitigate and adapt to climate change impacts is discussed in Section 2.2 and [Appendix B](#).

“... Therefore, a climate emergency be declared by the City of London for the purposes of naming, framing, and deepening our commitment to protecting our economy, our ecosystems, and our community from climate change.”
 – Declaration of Climate Emergency (approved by City Council, April 23, 2019).

Further to *The London Plan*, any lands that are within the jurisdiction of a conservation authority must adhere to applicable regulations that aim to protect environmentally significant lands. The City of London is within the jurisdiction of the following three conservation authorities:

- The Upper Thames River Conservation Authority (UTRCA),
- Kettle Creek Conservation Authority (KCCA), and
- Lower Thames Valley Conservation Authority (LTVCA).

2.2 Climate Change and *The London Plan*

The City of London identifies mitigation and adaptation among its responses to climate change impacts:

1. **Mitigation**, to avoid and reduce impacts of climate change by reducing greenhouse gas emissions (primarily those that are as a result of the use of fossil fuels), and
2. **Adaptation**, to adjust responses to climate change impacts, such as how infrastructure and buildings are built (e.g., to withstand severe weather events).

Policies related to climate change are included in *The London Plan*, such as the need to protect farmland and the need for transportation infrastructure that reduces car dependence.

As almost 80% of the land outside London's growth boundary is classified as prime agricultural land, it is critical for the City to protect its agricultural resources and enhance its strengths in agriculture to plan for long-term food sustainability (LP 17). *The London Plan* takes a comprehensive approach to food system planning and sets policies to preserve and protect agricultural land and promote agricultural industries (LP 683). *The London Plan* also emphasizes the protection of the Natural Heritage System (LP 695).



Source: The London Plan

The London Plan includes policies that encourage the use of incentives to achieve sustainable forms of development, including infill and context-appropriate intensification, retrofits to improve environmental performance standards, adaptive reuse, and brownfield remediation of existing buildings. Green technologies and construction methods are encouraged in *The London Plan* to reduce environmental impact and adapt to climate change (LP 469). *The London Plan* also outlines policies to address increasing transportation demand by creating opportunities for alternative modes of transportation that provide a viable, cost-efficient, and attractive option (LP 12). From a climate change perspective, alternative modes of transportation can help to reduce automobile dependency and mitigate impacts of greenhouse gas emissions.

Sustainability is a key theme of *The London Plan*, in which policies seek to protect environmentally significant areas and form a foundation for land use and development that reduces impacts on the environment. Policies in *The London Plan* related to sustainable growth and associated opportunities for the zoning by-law are presented in [Appendix C](#).

2.2.1 Complementary Zoning and *The London Plan*

The “Our Tools” section of *The London Plan* identifies tools that can be used to implement its policies, including through its new zoning by-law. The zoning by-law that implements the Plan may be used to:

- prohibit development on unstable, hazardous lands that are subject to natural or human-made hazards (e.g., flooding and erosion);
- prohibit development that would negatively impact areas that are environmentally significant (i.e., wetlands, shorelines, or significant natural corridors); or
- prohibit development on contaminated land or land that contains sensitive groundwater or surface water features.

It may also be used to regulate land use compatibility, height, and density to encourage compact, mixed-use, and transit-supportive forms of development that can help to reduce greenhouse gas emissions. Further, it can support the implementation of sustainable energy systems, such as large-scale wind turbines and solar facilities in the Farmland Place Type, or smaller scale, roof-mounted and building-integrated wind and solar energy systems in more urbanized areas.

Different zoning approaches (or systems) can be applied in the development of a zoning by-law. More information on two of these approaches, Euclidean (or traditional/conventional) zoning and form-based codes are further explained in [Appendix D](#) of this paper. For more information on a full range of approaches, please see *Discussion Paper #7. Implementing the New Zoning By-Law*.

To support the implementation of *The London Plan* through a new zoning by-law, additional policies, plans, strategies, and guidelines at the provincial, regional, and municipal levels of government play a crucial role (as discussed in [Appendix E](#)). The implementation of *The London Plan* can support the City in achieving the objectives of its climate emergency declaration and its target of net-zero greenhouse gas emissions by the year 2050.



3.0

MUNICIPAL AND INTERNATIONAL APPROACHES

Six, contemporary zoning by-laws in Ontario were reviewed to identify success factors in setting regulations that help to develop sustainable communities and protect environmentally sensitive areas, particularly those that support climate change mitigation and adaptation. The success factors included:

- **Parking standards and mobility:** the location and requirement of parking in specific areas, and regulations that encourage alternative modes of transportation other than automobiles.
- **Gentle density and sustainable development:** regulations that support small-scale development and context-appropriate intensification in established areas, and sustainable design.
- **Protection of environmentally significant areas:** regulations that protect environmentally significant areas from development that may interfere with the environmental function of the land.

For more information on the review and analysis, please see [Appendix E](#).

In addition, examples from The Netherlands, an international leader in combating climate change, are provided in [Appendix G](#). These examples provide additional options for broader policy and strategic planning that can build climate change resiliency.

One such example is the *Integrated Neighbourhood Approach* is a planning and design approach to climate adaptation, energy-efficient design, mobility, nature-inclusiveness and socio-economic relationships within a built-up area at the neighbourhood level (see Figure 1). This example applies a holistic approach to sustainable urban development that requires cooperation at various public and private sector levels. This integrated approach to neighbourhood design helps realize national goals while being efficient with resources. At the neighbourhood level, this approach explores the implementation of policy and emphasizes collaboration between the municipality, residents, utility companies, housing associations, and other stakeholders as essential to achieving desired outcomes. From a socioeconomic perspective, the *Integrated Neighbourhood Approach* focuses on a better quality

of life, safety, health, social cohesion, equality and prosperity (see Figure 2). Recommendations include:

- Renew public spaces in central areas to improve social cohesion and to encourage public control.
- Utilize public streets for public use.
- Optimize use of larger green spaces to improve the quality of life and health of a neighbourhood.
- Use large-scale intervention to make homes suitable for people at all ages and centralize healthcare facilities.
- Encourage people to walk and cycle more and provide affordable public transportation rolled out at the neighbourhood level.
- Use a centralized approach and joint purchasing to reduce energy costs.
- Expand employment opportunities by improving accessibility for space to buy and sell within the public realm and establishing local neighbourhood businesses.

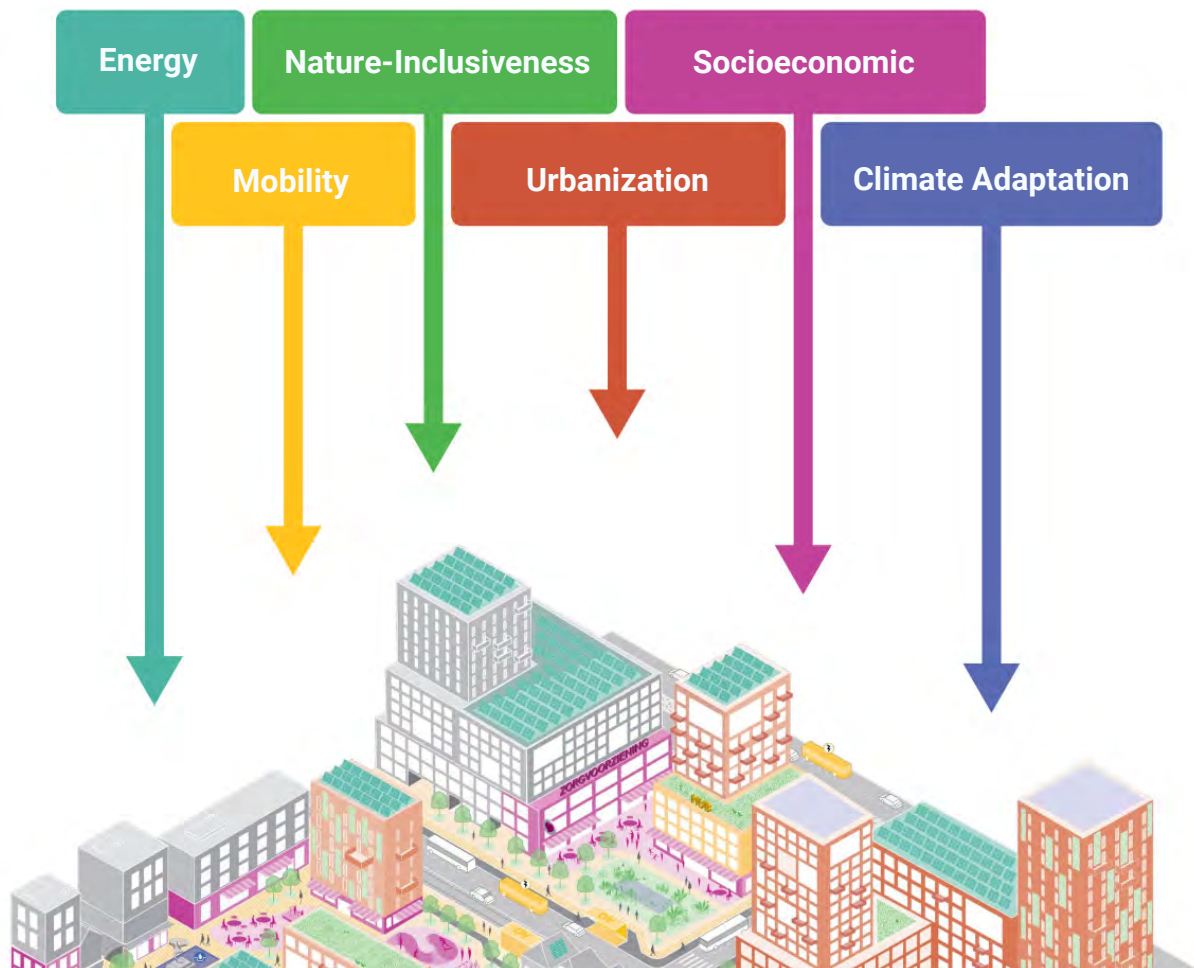


Figure 1. Key components of the Integrated Neighbourhood Approach - energy, nature-inclusiveness, socioeconomic, mobility, urbanization and climate adaptation (English translation). Source: TNO and PosadMaxwan.

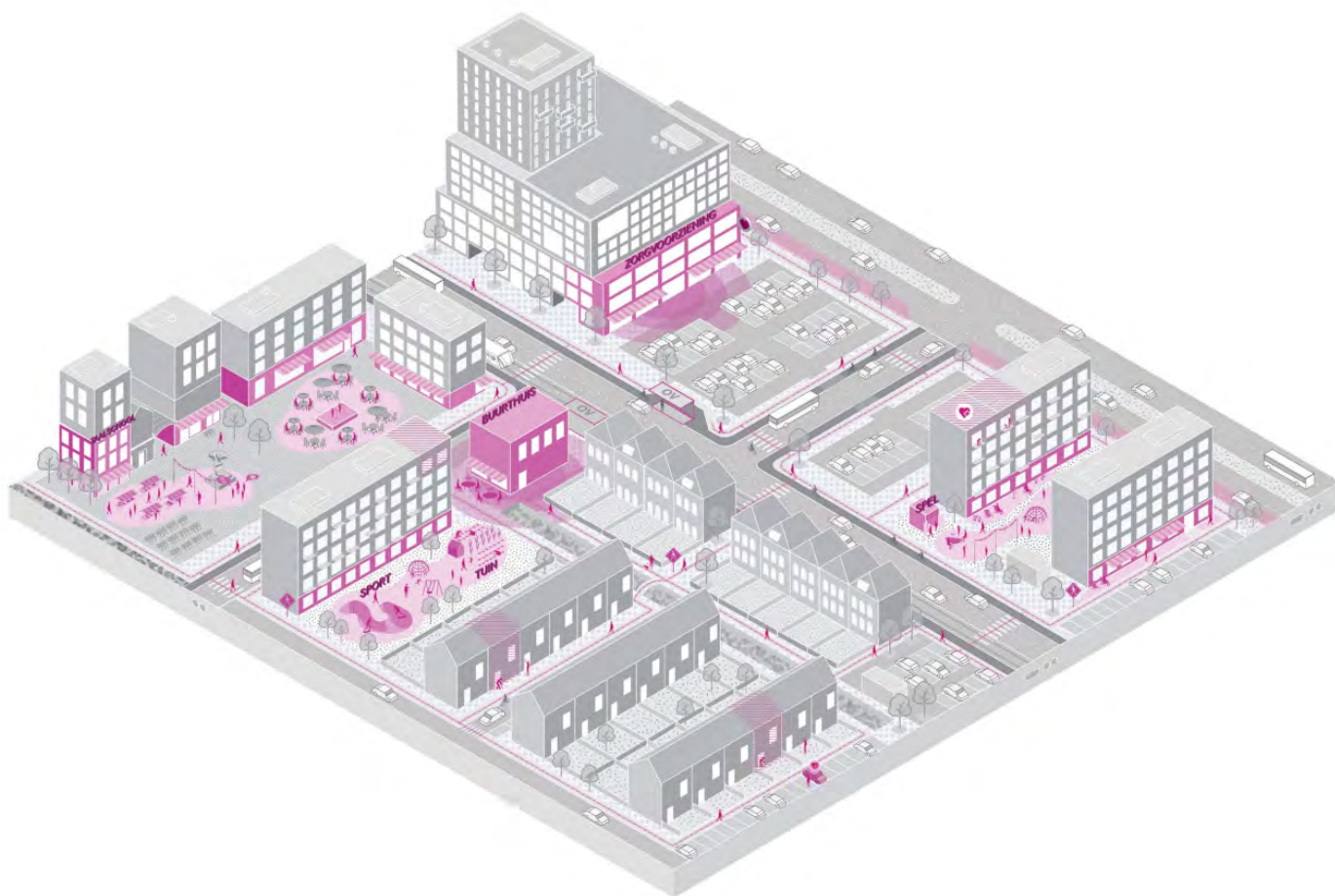


Figure 2. Socioeconomic interventions at the neighbourhood level. Source: TNO and PosadMaxwan.




4.0


RECOMMENDATIONS

4.1 Preliminary Recommendations

Regulations in London’s new zoning by-law will need to be developed through a climate-focused lens and provide a framework for a more resilient future. This includes measures to ensure that damage and risks, such as flooding, drought, and heat island effects, are minimized. To align with *The London Plan*, the new zoning by-law must include regulations that work toward mitigating climate change impacts and promoting sustainable infrastructure and building design. Some preliminary recommendations for the new, comprehensive zoning by-law are listed below.

Table 2. Preliminary Climate-Focused Recommendations for the Zoning By-law.

Preliminary Climate-Focused Recommendations for the Zoning By-law.	
	<p>Apply a holistic and integrated approach to addressing climate change that includes economic and social well-being.</p>
	<p>Develop an overlay zone for protecting areas that are vulnerable to source water contamination, flooding, erosion, and other natural hazards.</p>
	<p>Protect and enhance Farmlands and Natural Heritage Systems for their respective purposes.</p>

	<p>Concentrate development in appropriate areas and away from environmentally sensitive lands by permitting higher intensification and density in urban areas and encouraging a mix of housing forms and infill in residential neighbourhoods.</p>
	<p>Promote transit-oriented and transit-supportive development through compact, mixed-use, street-oriented development, and requiring infrastructure requirements that support public transit and active transportation modes.</p>
	<p>Reduce parking space requirements, in appropriate areas, to minimize environmental impacts of surface parking lots and create walkable communities.</p>
	<p>Require open space, landscaping, and greening of impermeable surfaces and low impact development features to manage stormwater in Urban and Rural Place Types.</p>
	<p>Protect tree coverage and native tree species, where feasible, and encourage development (such as surface parking lots) to include sustainable tree canopies through the use of a tree conservation by-law, design standards and guidelines, or site plan agreements.</p>
	<p>Consider and include uses for the production, conservation, and management of systems, such as stormwater management facilities, district energy systems, solar fields, and wind farms, where appropriate.</p>
	<p>Utilize performance standards for Low Impact Development features and energy-efficient building design.</p>
	<p>Update definitions to align with recent trends in agriculture, using clear and simple terminology that is also reasonably flexible (for implementation). The Farmland Place Type and related policies of <i>The London Plan</i> permit uses such as agricultural-related commercial and industrial uses and on-farm diversified uses (LP 1178).</p>

Sustainable development can contribute to lower greenhouse gas emissions by providing proximate, contextually-appropriate intensification, and a shift toward a multi-modal transportation system that minimizes automobile use. The approach to resiliency will differ for each of the city-wide Urban and Rural Place Types.

These preliminary recommendations are discussed further in 4.1.1, and in [Appendix H](#), which introduces the concept of transects. The transect approach is further discussed in *Discussion Paper #2. Zoning in on Intensification* and in [Appendix I](#).

4.1.1 Specific Interventions by Transect

This section outlines specific interventions for each transect to help the City mitigate and adapt to climate change challenges. The interventions are based on a review of provincial and municipal policies and of approaches undertaken by other municipalities.

TRANSECT RURAL

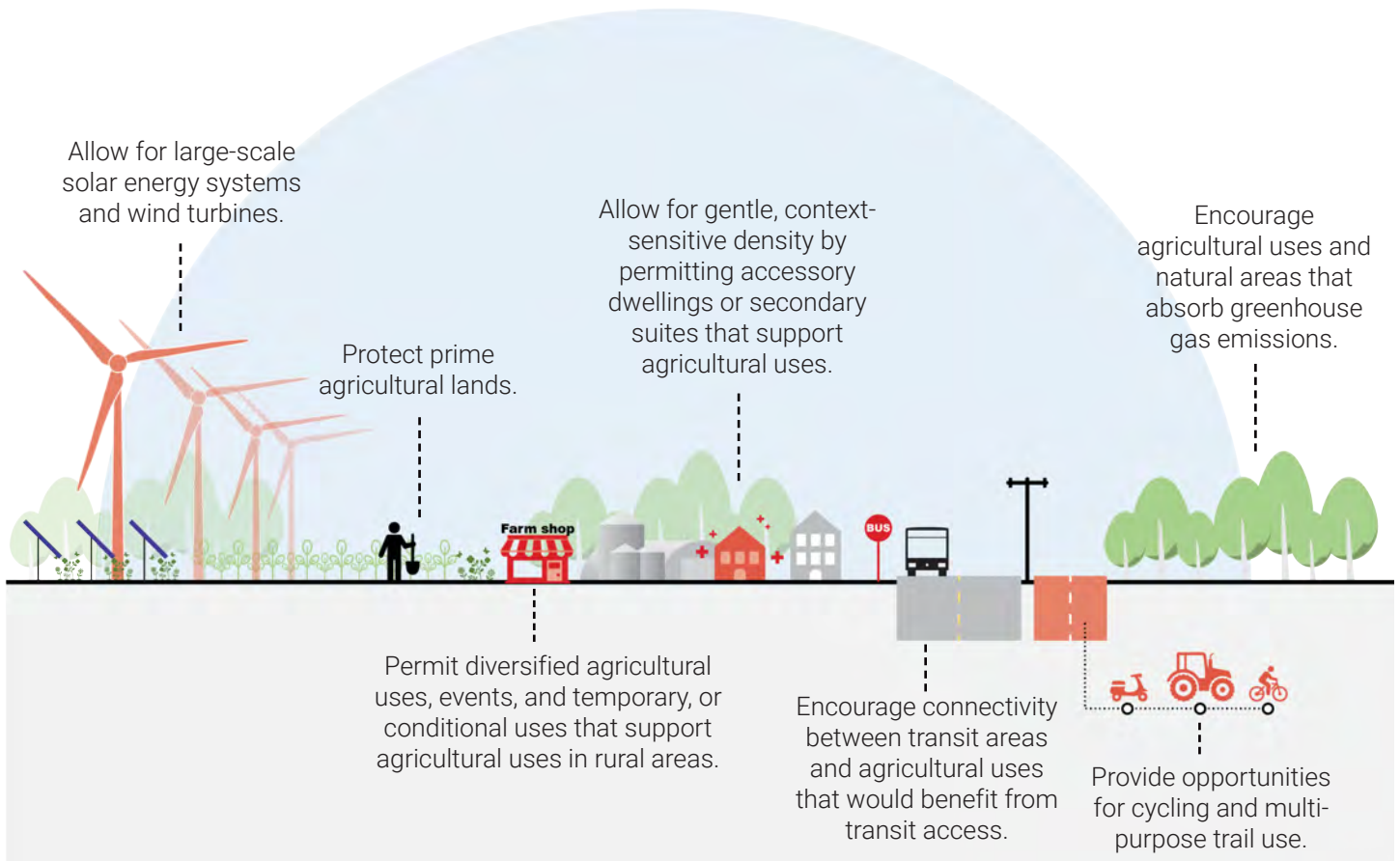


Figure 3. Climate-Focused Recommendations for the Rural Transect.

Note: these images are for illustrative purposes only and do not represent the form or intensity of the uses.

TRANSECT SUBURBAN

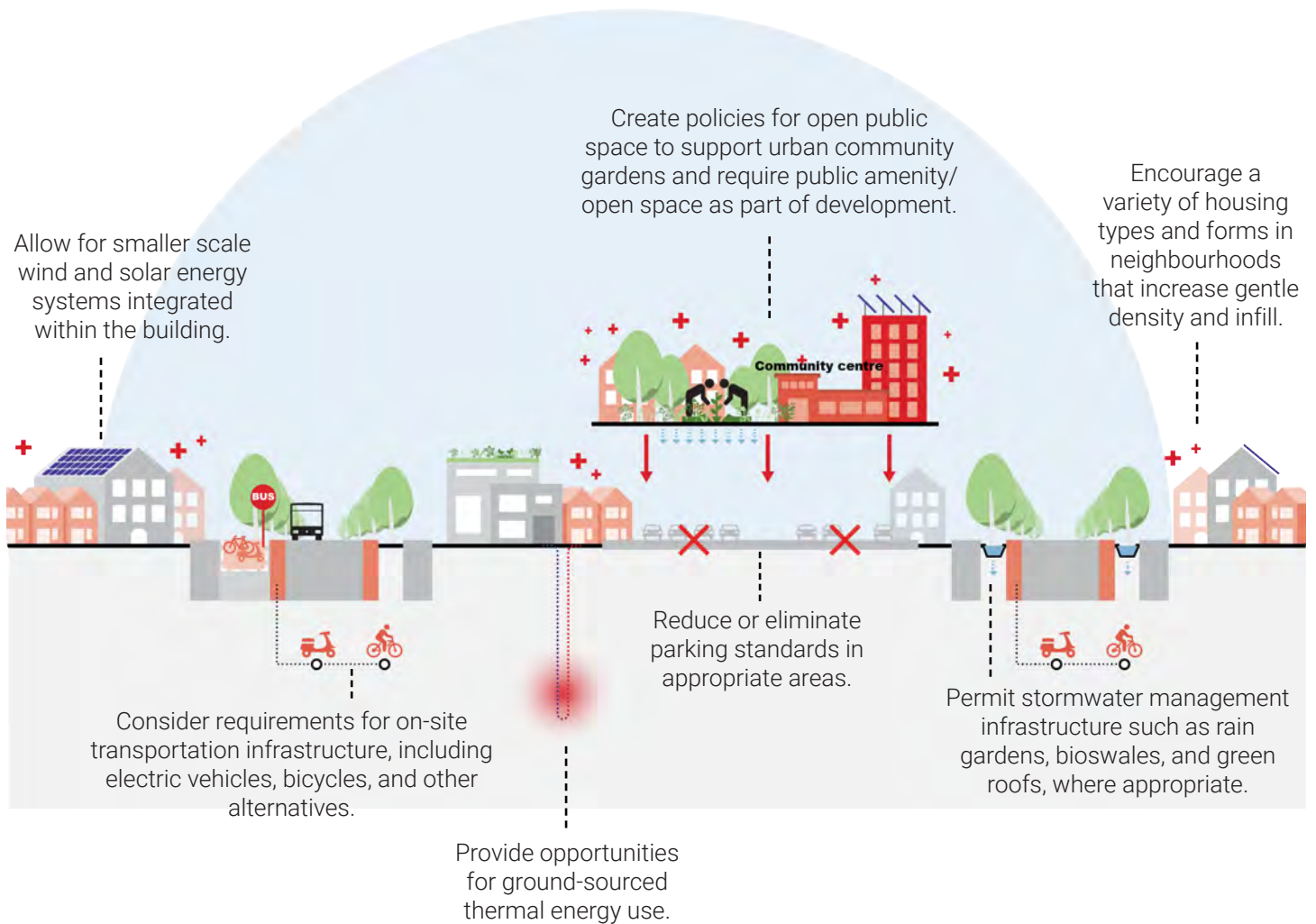


Figure 4. Climate-Focused Recommendations for the Suburban Transect.

TRANSECT URBAN CENTRE

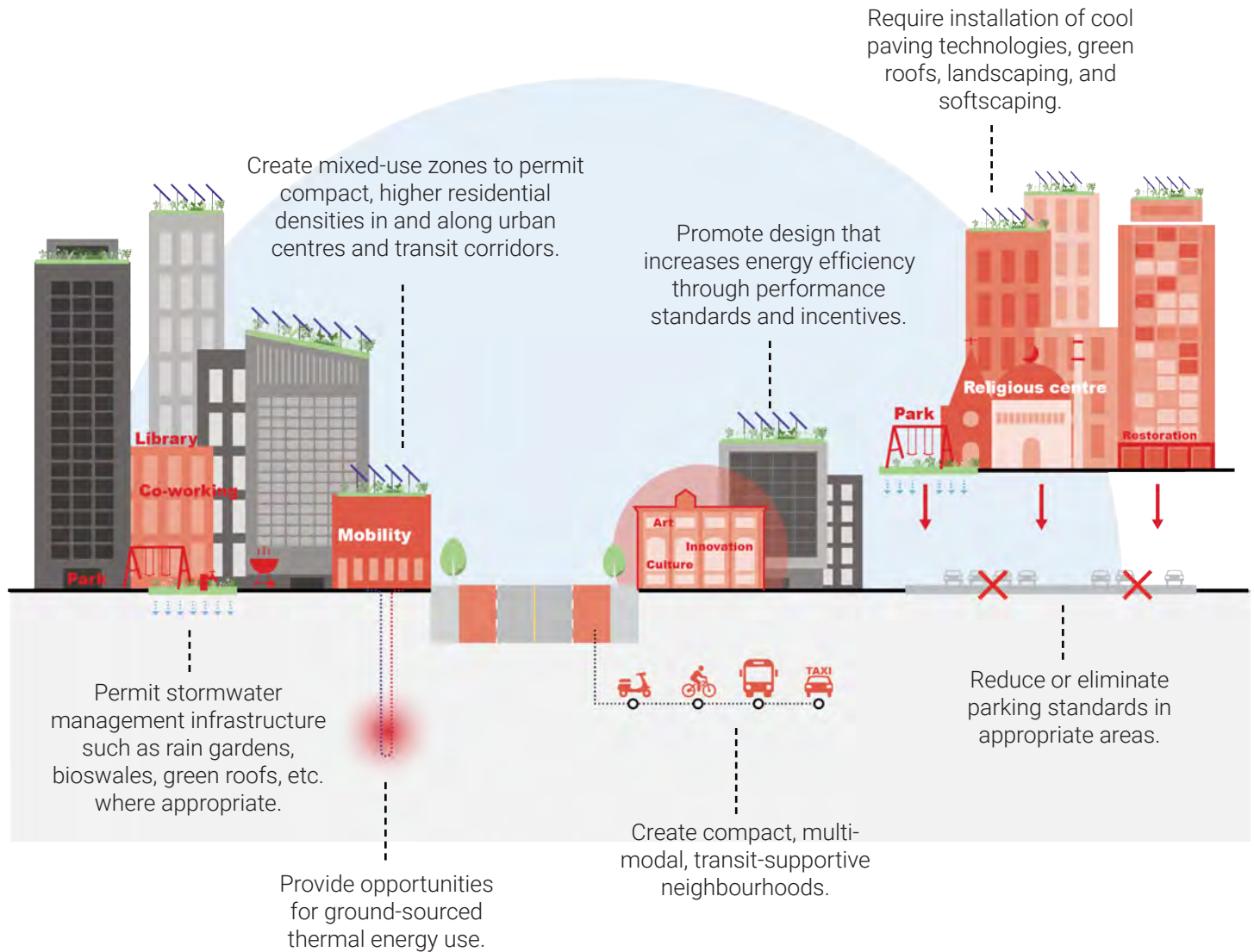


Figure 5. Climate-Focused Recommendations for the Urban Centre Transect.



Source: Tourism London

TRANSECT URBAN CORRIDOR

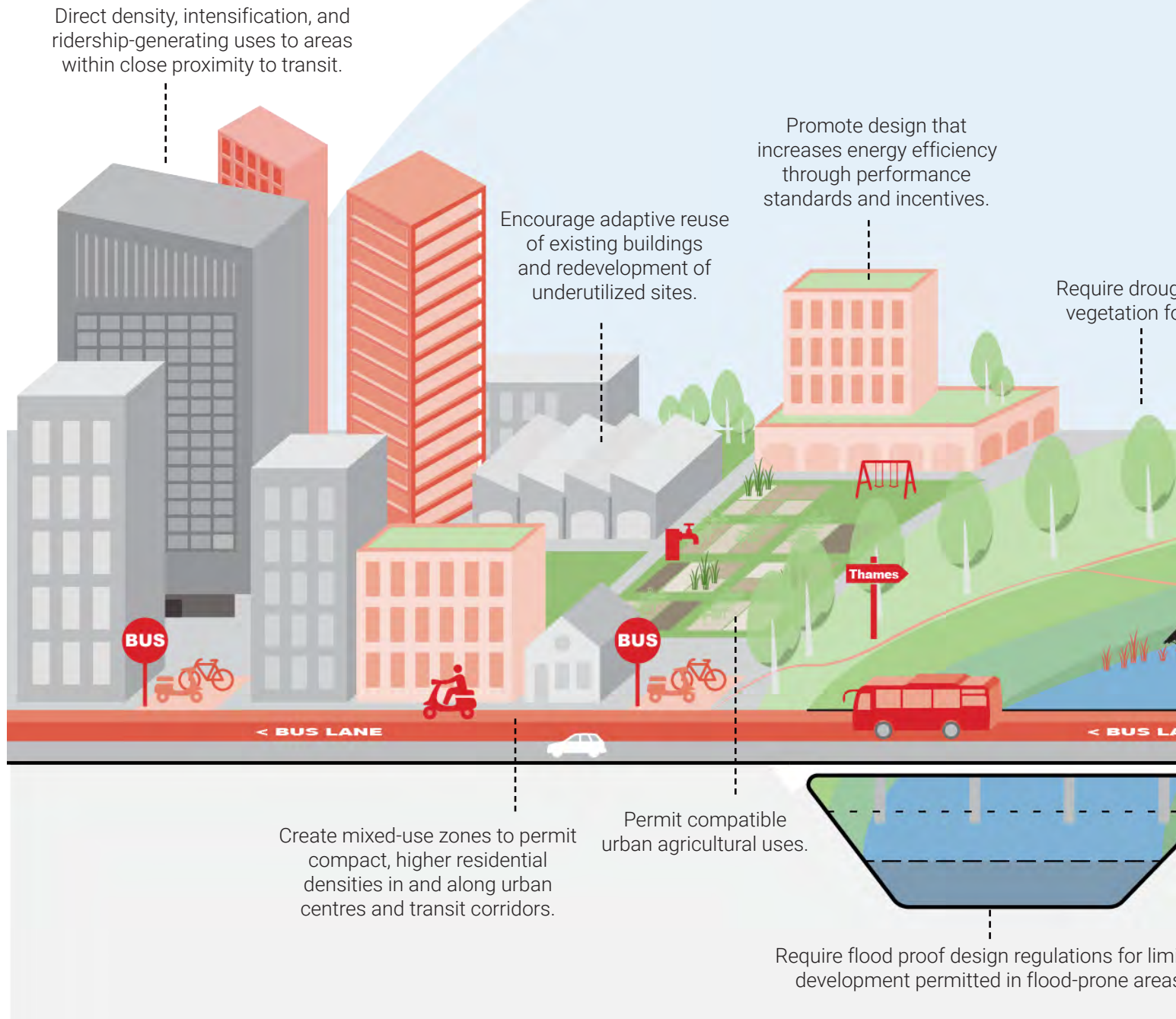


Figure 6. Climate-Focused Recommendations for the Urban Corridor Transect.

ght/flood tolerant
or development.

Preserve native tree species and tree coverage through implementation of a tree conservation by-law, design standards and guidelines, or site plan agreements.

Require installation of cool paving technologies, green roofs, landscaping, and softscaping.



Create compact, transit-supportive neighbourhoods.

ited
s.

TRANSECT SPECIAL DISTRICTS (COMMUNITY AND INDUSTRIAL)

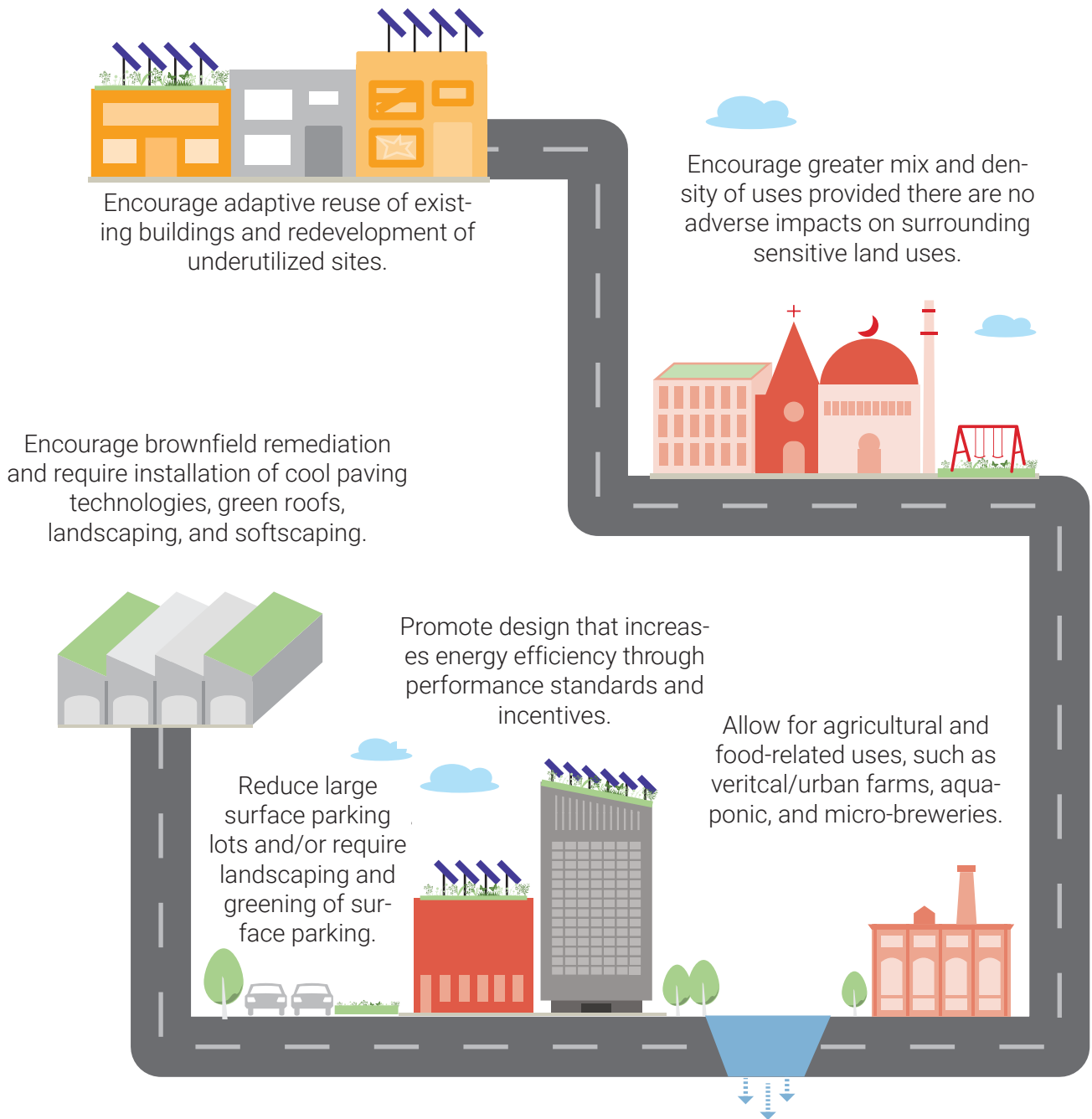


Figure 7. Climate-Focused Recommendations for the Special District Transects.

4.2 Additional Planning and Municipal Tools for Implementation

Zoning by-laws specify how land may be used, as well as the location of buildings and other structures, building types, lot sizes and dimensions, parking requirements, building heights and densities, and setbacks from the street.

However, many actions required for sustainable development must be managed at more of a micro-level than through a zoning by-law. The zoning by-law is limited in terms of specifying features such as standards of quality, appearance, and exterior design.

Additional planning tools can work in conjunction with a zoning by-law to support sustainability. Some land use planning tools for climate change adaptation include design guidelines, plans of subdivision, environmental reviews and assessments, covenants and easements, and development agreements. Municipalities can also apply holding provisions to specific sites or adopt green/LEED standards to ensure development meets or exceeds local environmental needs and priorities. In addition, technical studies or community energy plans can be used to develop sustainable approaches to municipal infrastructure and resource management. For more information on these tools, please see [Appendix J](#).

4.3 Next Steps

The recommendations in this paper and the feedback received from partners, stakeholders, and the general public will inform the climate-focused components of London's new, comprehensive zoning by-law. Specific directions will be developed for each Place Type as they relate to regulations dealing with the impacts of the climate emergency.

APPENDICES

Appendix A. Methodology

In developing this discussion paper, the Consultant Team undertook the following steps:

- **Conducted background research**, to explore what “the climate emergency” is, and the role planning plays in the mitigation and adaptation to climate change and in supporting sustainable growth.
- **Reviewed the policy and legislative context**, to conduct a high-level examination of environmental and sustainable growth-focused policies and directions at the provincial level and municipal levels of government.
- **Identified potential impacts of climate change**, to focus on the key climate-related challenges and impacts of climate change facing London, as presented in the City’s *Declaration of Climate Emergency* and *The London Plan*.
- **Reviewed zoning approaches and practices in other jurisdictions**, to examine potential approaches for climate mitigation and/or adaptation within a zoning by-law, as well as other possible non-zoning tools for implementation from select Ontario municipalities; and to examine international best practices (from a Dutch perspective) for using zoning as a potential tool for climate change resiliency.
- **Provided analysis and synthesized practices**, to develop preliminary recommendations to guide the development of proactive and responsive approaches for London’s new, comprehensive zoning by-law, and to identify potential gaps and barriers to implementation, possible solutions (i.e., other municipal tools), and next steps for consideration.

Appendix B. Addressing Climate Change through Local Planning

This section provides an overview of the role that urban planning and zoning play in addressing climate change. It also takes a closer look at environmental and sustainable growth policies in *The London Plan* that will need to be reviewed and considered in the new, comprehensive zoning by-law.

The Role of Planning in the Climate Emergency

The *CIP Model* and provincial and municipal plans point to several planning approaches that can be used by the City to mitigate and adapt to climate change. Some of these include:

1. Growth Management

Increased intensification and density in central areas, compact development patterns, and concentration of mixed uses can draw and focus development away from environmentally sensitive and agricultural lands that need to be protected. This form of development is now generally recognized as making efficient use of infrastructure and resources, and preventing sprawl and fragmentation of natural ecosystems, including in *The London Plan*. Green Development policies in *The London Plan* emphasize using an ecosystems/watershed approach to planning and development (LP 726) and encourage growth and development to be compact, mixed-use, and transit-supportive (LP 727).

Car-oriented development and sprawl are associated with larger, low-density dwellings that require more climate-control and result in higher energy consumption and costs for households. Large footprints of commercial and industrial buildings with low heights also require more energy to function. Between the single detached housing on the outskirts of cities like London and the towered buildings in the centre, there is a “missing middle”, and a great need to support more multi-unit, low- to mid-rise housing as a more sustainable building form. In low-density and single-use zones where transit and infrastructure are underdeveloped and underused, low-rise, multi-unit buildings are generally better suited to adapting and diversifying the area and represent a gentle form of density. This can be seen in the City of Guelph where the *Official Plan* provides for various opportunities for gentle intensification throughout the built-up area that are outside of designated nodes, corridors, and the downtown through redevelopment and infill.

Policies and regulations to permit accessory dwelling units, secondary suites, and laneway housing in appropriate areas can help implement gentle density that concentrates development in urban areas with existing infrastructure and away from environmentally sensitive areas. Further, introducing public spaces, particularly in dense urban areas, can benefit residents’ health and well-being while managing stormwater runoff and reducing urban heat island effects. This can be seen in the City of Vaughan, which encourages green roofs on all building types in its *draft City-wide Urban Design Guidelines*.

Green roofs in Vaughan may be combined with accessible amenity spaces, and rooftops may also be used for food production. This guideline is connected to Vaughan's performance standard for micro-climate and sky view aimed at improving natural ventilation, energy efficiency, and passive heating and cooling. Policies and regulations that encourage the use of land for public green space activities (such as community gardening with composting facilities) can serve as a solution for organic waste management.

2. Enhanced Mobility

Active modes of transportation (e.g., walking and cycling), and more sustainable modes (e.g., transit use and carpooling) can help reduce automobile dependency and the associated greenhouse gas emissions, and promote transit-oriented, walkable communities. Developing compact and mixed-use communities, particularly in areas close to transit networks, can help increase transit ridership and promote modes of active transportation. Provincial policy in the *Growth Plan for the Greater Golden Horseshoe* emphasizes increasing the modal share for transit and active transportation, and minimizing land consumption through compact built form, to support climate change mitigation (Section 2.1). Providing infrastructure to encourage sustainable modes of transportation such as bicycle lanes, carpool spaces, car-share spaces, shared parking, and electric vehicles can further reduce greenhouse gas emissions from individual automobile use. Pedestrian activity can be increased by introducing or enhancing features such as sidewalks, trails, landscaping, inviting building façades, smaller setbacks from the street, and minimal parking lot areas. Focusing on sustainable mobility can also help minimize negative environmental impacts associated with large surface parking lots that increase storm water runoff and the urban heat island effect.

3. Compact and Energy-Efficient Built Form

Zoning by-law regulations can also contribute to climate change solutions by creating by encouraging concentrated and compact development in urban areas. Encouraging infill development and shared walls can reduce the need for water and heating infrastructure and energy consumption. Neighbourhood-scale infrastructure, such as streetlights, traffic signals, and water and wastewater pumps, can also be designed to reduce energy consumption. For example, district heating and cooling systems have been shown to improve energy efficiency compared to building-based infrastructure. Using on-site power generation instead of utility-supplied electricity is another strategy to reduce consumption and costs.

Further, solar orientation of buildings can reduce energy consumption by reducing the need for heating or cooling energy. Other low impact development features such as green roofs, vegetated walls, solar panels, and thermal energy systems can reduce energy consumption while creating greener spaces to reduce the urban heat island effect.

4. Protection of Water Resources

Development should be designed to minimize impacts to water sources and natural water systems. This can be achieved through strategies to control, manage, treat, and reuse stormwater runoff, and by prohibiting or limiting development within areas prone to flooding and source water contamination.

5. Protection of Natural Heritage and Natural Hazard Areas

It is imperative to protect areas that are vulnerable to natural hazards for public safety and the protection of ecosystems and environmentally vulnerable areas. Efforts to preserve existing natural heritage areas can be combined with creating opportunities for compact forms of development to help offset development impacts. Preserving existing green space and trees can reduce stormwater runoff, mitigate the urban heat island effect, and reduce energy consumption and landscaping costs (U.S. Green Building Council, 2014). Trees and native vegetation can also help filter air, protect ecosystems, and create walkable environments.

6. Protection of Agriculture

Protection of prime agricultural land can help to maintain and increase the long-term economic viability of agricultural uses. Agriculture can also support climate change mitigation efforts. Healthy soils or crops such as perennial tallgrass can absorb and store greenhouse gas emissions. Similarly, natural features such as wetlands, woodlots, pastures, and buffers can also absorb emissions from the atmosphere. Opportunities for on-farm green energy generation (e.g., biogas) can further minimize climate change impacts.

Some small-scale and compatible agricultural uses may be accommodated in urban areas to help reduce the physical distance between food production and food consumption, thus reducing the environmental impact of transporting food.

The London Plan aims to mitigate the impacts of climate change and adapt to extreme weather conditions. It sets out an approach for planning that emphasizes inward and upward growth to reduce growth-related costs, create walkable communities, revitalize urban areas, protect farmlands, and reduce greenhouse gases and energy consumption. The plan also provides policies to protect the city's environmentally significant areas, natural heritage features, hazard lands, and natural resources. (See Section 6 – Environmental Policies)

Appendix C. Summary of Climate Change-Related Policies in *The London Plan*

The London Plan emphasizes the need to address challenges associated with climate change by introducing policies to protect farmland and other environmentally significant areas, reduce automobile dependence, encourage compact, mixed-use development, and reduce greenhouse gas emissions.

Supportive Policies in *The London Plan*

The City Building policies of *The London Plan* support the development of a green and healthy cities strategy (GHCS) and provide extensive direction on how London can become one of the greenest cities in Canada. Some of the ways that the Plan aims to achieve these goals include supporting:

1. Attractive active mobility and public transit choices;
2. Vibrant, diverse, connected, and safe neighbourhoods that are designed to support active mobility;
3. Abundant high-quality parks, trails, cycling infrastructure, and recreational facilities;
4. Safe places and spaces;
5. A healthy urban forest;
6. Cleaner and more sustainable forms of energy;
7. Reduced air emissions;
8. Clean and sustainable infrastructure, including the safe delivery of drinking water, solid waste diversion, and sanitary sewage treatment;
9. A wide range of housing choice and affordable housing opportunities;
10. Abundant and accessible health care services;
11. Reliable and sustainable emergency services;
12. Safe places and spaces;
13. Regenerated urban neighbourhoods; and
14. Redeveloped brownfield sites (LP 697).

The London Plan policies for establishing its GHCS focus on the following:

- green jobs,
- mobility,
- development,
- infrastructure,
- energy and clean air,
- a healthy watershed,
- clean water, and
- waste management.

Policies also emphasize establishing a city structure that is supportive of rapid transit, transit-oriented design, active mobility, transportation demand management, intensification, and cycling infrastructure

(LP 724). Its green development policies promote the use of an ecosystems/watershed approach to planning and development (LP 726) and encourage compact, mixed-use, transit-supportive development and growth (LP 727). The zoning by-law may establish lower parking requirements in areas that have high accessibility to transit (LP 271). Surface parking lots are also encouraged to be designed to include a sustainable tree canopy (LP 277). Green development standards for neighbourhoods and individual buildings, including low impact development standards for municipal infrastructure are encouraged (LP 728). London Plan policies direct development away from areas prone to hazards (LP 703) and directs infill, intensification, growth and development to the Downtown, Main Street, Transit Village, and Rapid Transit and Urban Corridor Place Types and the Primary Transit Area (LP 453). *The London Plan* supports infill and intensification through a variety of forms, including secondary dwelling units (LP 506), and its policies encourage Low Impact Development source controls in institutional, commercial, industrial, and higher density residential developments (LP 475). *The London Plan* provides policies to protect farmland for agricultural uses (LP 1178). Green energy projects such as wind farms and solar fields are permitted on agricultural lands that have the lowest agricultural land capability (LP 1211).

The London Plan also contains Environmental Policies that aim to protect and enhance the city’s Natural Heritage System, minimize risks associated with natural and human-made hazards, and identify and conserve natural resources. Policies to protect the Natural Heritage System permit measures such as Open Space zoning, tree preservation plans, public land acquisition, site alteration and tree conservation by-laws, conservation easements, and private stewardship initiatives (LP 1314).

The table below identifies opportunities to address climate change identified by each section of *The London Plan*.

Opportunities to Address Climate Change in <i>The London Plan</i>		
London Plan Components	Climate and Environmental Policies	Opportunities to Address Climate Change
Our Challenge	<ul style="list-style-type: none"> Managing the cost of growth¹ The critical importance of transportation² New demands for urban living³ Infrastructure gap⁴ Protecting our farmland⁵ Climate change⁶ 	<ul style="list-style-type: none"> Increase density and intensity, where appropriate (i.e., transit supported, within the urban boundary). Prevent loss of farmland and support long-term agricultural resources. Promote compact mixed-use communities. Protect areas of environmental significance. Treat contaminated sites for redevelopment.

1 LP Policy 7
 2 LP Policy 11
 3 LP Policy 12
 4 LP Policy 15
 5 LP Policy 17
 6 LP Policy 18

<p>Our Strategy</p>	<ul style="list-style-type: none"> • Direction #4: Become one of the greenest cities in Canada⁷ • Direction #5: Build a mixed-use compact city⁸ • Direction #6: Place a new emphasis on creating attractive mobility choices⁹ 	<ul style="list-style-type: none"> • Use an ecosystems/watershed approach in planning. • Protect and enhance our Thames Valley corridor and its ecosystem. • Protect and enhance the Natural Heritage System. • Manage growth in ways that support green and active forms of mobility. • Reduce our human impact on the environment – reduce carbon footprint as a city. • Practice and promote sustainable forms of development. • Promote green development standards, such as the <i>LEED Neighbourhood</i>, <i>LEED Building Design and Construction Standards</i>. • Implement a city structure plan that focuses high-intensity, mixed-use development to strategic locations – along Rapid Transit Corridors and within the Primary Transit Area. • Plan to achieve a compact, contiguous pattern of growth – looking “inward and upward”. • Plan for infill and intensification of various types and forms to take advantage of existing services and facilities and to reduce our need to grow outward. • Ensure a mix of housing types within our neighbourhoods so that they are complete and support aging in place. • Mix stores, restaurants, clean industry, live-work arrangements, and services in ways that respect the character of neighbourhoods, while enhancing walkability, and generating pedestrian activity. • Build quality public spaces and pedestrian environments that support walking.
---------------------	---	--

7 LP Policy 58
8 LP Policy 59
9 LP Policy 60

Our City	<p>The Growth Framework¹⁰ The Mobility Framework¹¹ The Green Framework¹²</p> <ul style="list-style-type: none"> • Subwatershed Planning¹³ • Role of Thames Valley Corridor¹⁴ • Park System¹⁵ 	<ul style="list-style-type: none"> • Concentrate intensification and density in central urban and transit areas. • Encourage use of public transit and active transportation modes. • Undertake subwatershed planning and environmental conservation and protection through policies and mapping in <i>The London Plan</i>. • Protect and enhance the Thames Valley Corridor and its surrounding ecosystems. • Connect Thames Valley Corridor and parks to create active and passive recreational opportunities.
City Building Policies	<p>City Design¹⁶ Forest City¹⁷ Food System¹⁸ Green and Healthy City¹⁹</p>	<ul style="list-style-type: none"> • Preserve and enhance tree coverage. • Permit uses that enhance the food system in urban and rural areas. • Provide opportunities for rooftop and community gardens.
<p>Place Type Policies:</p> <p>City-wide Place Types</p>	<p>1. Green Space 2. Environmental Review</p>	<ul style="list-style-type: none"> • Create new green linkages throughout the city (following the Thames River and tributaries). • Increase tree cover. • Provide accessible public green space. • Protect ecological functions and significant natural areas and natural heritage features.

10 LP Policy 71
 11 LP Policy 100
 12 LP Policy 113
 13 LP Policy 115
 14 LP Policy 123
 15 LP Policy 124
 16 LP Policy 193
 17 LP Policy 389
 18 LP Policy 653
 19 LP Policy 697

Place Type Policies: Urban Place Types	<ol style="list-style-type: none"> 1. Downtown 2. Transit Village 3. Rapid Transit Corridors 4. Urban Corridors 5. Shopping Area 6. Main Street 7. Neighbourhoods 8. Institutional 9. Industrial 10. Future Growth 	<ul style="list-style-type: none"> • Create new green linkages throughout the city (following the Thames River and tributaries). • Increase tree cover. • Accessible public green space. • Protect ecological functions and significant natural areas and natural heritage features.
Rural Place Types	<ol style="list-style-type: none"> 1. Farmland 2. Rural Neighbourhoods 3. Waste Management Resource Recovery Area 	<ul style="list-style-type: none"> • Protect prime agricultural lands and farming uses.
Environmental Polices	Provide direction for long-term protection and conservation of London's Natural Heritage System and Natural Resources and ensure that development is directed away from Natural and Human-made Hazards ²⁰	<ul style="list-style-type: none"> • Preserve and protect natural areas and resources. • Develop mitigation/adaptation strategies for natural and human-made hazards.
Secondary Plans	Relationship to municipal class environmental assessment process ²¹	<ul style="list-style-type: none"> • Require development to fulfill requirements of the <i>Environmental Assessment Act</i>.

20 LP Section 6: Environmental Policies

21 LP Policy 1563

<p>Our Tools</p>	<ul style="list-style-type: none"> • Planning and development controls: <ul style="list-style-type: none"> • Zoning by-law²² • Bonus zoning²³ • Holding provision by-law²⁴ • Temporary use provisions²⁵ • Site plan control²⁶ • Subdivision of land²⁷ • Natural Heritage System guidelines²⁸ • Parks, Recreation and Open Space guidelines²⁹ • Community improvement plans³⁰ • Municipal by-laws: Tree conservation by-law to regulate the injury or destruction of trees³¹ 	<ul style="list-style-type: none"> • Zoning by-law <ul style="list-style-type: none"> • Prohibit development in unstable, hazardous land subject to natural or human-made hazards (e.g., flooding). • Prohibit development that would negatively impact areas that are environmentally significant (e.g., wetlands, shorelines, and significant natural corridors). • Prohibit development on contaminated land or land that contains sensitive groundwater or surface water features. • Regulate land use compatibility, height, and density. • Bonus Zoning
------------------	---	--

22 LP Policies 1635 to 1637
 23 LP Policies 1638 to 1655
 24 LP Policies 1656 to 1661
 25 LP Policies 1671 to 1673A
 26 LP Policies 1674 to 1683
 27 LP Policies 1685 to 1695
 28 LP Policy 1719
 29 LP Policy 1720
 30 LP Policies 1723 to 1728
 31 LP Policy 1738 #11

	<ul style="list-style-type: none"> • Parkland acquisition and dedication³² 	<ul style="list-style-type: none"> • Incentivize sustainable forms of development in pursuit of the Green and Healthy City policies of <i>The London Plan</i>, such as: <ul style="list-style-type: none"> • Require car parking, car sharing, and bicycle sharing facilities accessible to the public. • Tree planting in exceptional quantities, or the planting of rare tree species, as appropriate. • Measures to enhance the Natural Heritage System, such as renaturalization, buffers from natural heritage features, or restoration of natural heritage features and functions. • Site Plan Control <ul style="list-style-type: none"> • Manage stormwater and drainage. • Locate wastewater and water servicing. • Determine location and type of trees to be retained and planted.
Appendix 1 – Maps	<ul style="list-style-type: none"> • Map 1 – Place Types • Map 4 – Active Mobility Network • Map 5 – Natural Heritage • Map 6 – Hazards and Natural Resources • Map 8 – Community Improvement Project Areas 	<ul style="list-style-type: none"> • Link maps to the Natural Heritage System to provide a holistic view of development, address competing priorities, and combine actions for overlapping priorities.

32 LP Policies 1753 to 1765

Appendix D. Traditional Zoning and Form-Based Codes

London's current *Zoning By-law (No. Z.-1)* is traditional, placing an emphasis on permitted land uses rather than the form and appearance of the built environment (see *Discussion Paper #2: Zoning in on Intensification* for more information on traditional zoning by-laws). With the introduction of the new London Plan in 2016, the City has decided to create a new, comprehensive zoning by-law to implement its vision, goals, and policies.

Reducing barriers to building form and land use can encourage more complete and walkable communities, and serve as a critical tool in reducing carbon emissions. For example, permitting a mix of residential and employment uses on a lot can reduce the need for residents to drive to conveniently access work, home, and critical amenities, supporting the use of more sustainable modes. Alternatively, the more spread out and separated that uses are, the less convenient it will be for residents to access necessities, increasing the need for private automobile use. The combined household and transportation energy consumption of an energy-efficient green suburban home is 10%, 20%, and 30% higher than that of a comparable-sized home in a mixed-use urban neighbourhood, an urban green home, and a multi-family urban green home, respectively³³. Supporting appropriate intensification and density in compact urban areas can significantly reduce energy consumption when compared to low-density suburban sprawl.

An alternative to conventional zoning is the form-based code approach, which can specify permitted land uses, but emphasizes the physical character of development and its relationship to the public realm (see *Discussion Paper #2: Zoning in on Intensification*). Form-based zoning focuses on what is happening around the built form (e.g., the space between buildings) and is often linked to notions of retrofit, infill, intensification, and the efficient use of resources and infrastructure.

Form-based zoning can provide opportunities to actively respond, mitigate, and adapt to climate change and resiliency. Form-based zoning can increase walkability and reduce forms of development that result in automobile reliance. It can also be used to implement regulations to control issues such as stormwater drainage and infiltration, development on slopes, tree protection, and solar access. Applying a form-based approach to zoning can also provide greater control over the physical aspects of development and can often help to reduce greenhouse gas emissions by supporting the creation of compact, transit- and pedestrian-oriented neighbourhoods. For example, zoning for built forms that generate significant transit ridership near existing or planned transit systems can encourage sustainable modes of transportation while providing context-appropriate density.

Through the ReThink Zoning process there is an opportunity to update, streamline, and modernize provisions and standards through a new, comprehensive zoning by-law that align with the vision and

33 Source: <https://www.azuremagazine.com/article/zoning-key-combatting-climate-change/>

goals of *The London Plan*. It presents an opportunity to explore alternatives to traditional zoning as a responsive tool that can contribute to the long-term environmental and economic viability of each Place Type in *The London Plan*.

Appendix E. Policy and Legislative Context

The Provincial Policy Statement

Under the *Planning Act*, the *Provincial Policy Statement, 2020 (PPS)* is issued by the Ministry of Municipal Affairs and Housing (MMAH) establishing the ground rules for land use planning in Ontario. As part of its vision, the *PPS* supports strong, liveable, and healthy communities that are environmentally sound and are resilient to climate change. The *PPS* emphasizes the importance of efficient development patterns to permit better adaptation and response to impacts of a changing climate (which vary region to region).

Municipalities play a key role in the implementation of *PPS* objectives and policies through official plans (and related documents), which must be consistent with the *PPS*.

The Growth Plan for the Greater Golden Horseshoe

The Greater Golden Horseshoe (GGH) contains many provincially significant natural environments and scenic landscapes that support biodiversity, provide drinking water, sustain resource-based industries, support recreational activities, and help manage the impacts of climate change. The region is also home to some of Canada's most valuable farmland. The *Growth Plan for the GGH (Growth Plan)* emphasizes protecting valuable water resources and natural areas, adapting communities and infrastructure to be more resilient, and reducing greenhouse gas emissions. The *Growth Plan* also provides direction on planning for compact development patterns in urban centres that support climate change mitigation and adaptation.

Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has developed *Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas* to assist with interpreting and implementing policies in the *PPS*. It describes permitted uses in prime agricultural areas and provide guidance on:

- Agricultural, agriculture-related, and on-farm diversified uses³⁴ ;
- Removal of agricultural land for new and expanding settlement areas³⁵ and limited non-agricultural uses in prime agricultural areas³⁶ ; and,
- Mitigation of impacts from new or expanding non-agricultural uses³⁷.

The guidelines recommend that municipalities regulate setbacks through zoning by-laws for some agricultural uses to protect prime agricultural areas from drinking water contamination, fire, odour, noise, or dust impacts, and to implement Conservation Authority (CA) regulations. The guidelines

34 PPS Policy 2.3.3
 35 PPS Policy 2.3.5
 36 PPS Policy 2.3.6
 37 PPS Policy 2.3.6.2

also recommend that municipalities adopt as-of-right zoning for agricultural uses and other uses compatible with permitted agricultural uses, such as home offices and small produce stands, allowing any of these uses to be established within specified areas given they comply with the applicable by-law requirements. Temporary use zoning by-laws can be used to permit event-type uses in agricultural areas, such as concerts and farm shows, where such uses cannot be accommodated in existing facilities.

Conservation Authorities

The City of London is within the jurisdiction of the following three conservation authorities:

- The Upper Thames River Conservation Authority (UTRCA),
- Kettle Creek Conservation Authority (KCCA), and
- Lower Thames Valley Conservation Authority (LTVCA).

Conservation authority (CA) jurisdictional limits are provided in Map 6 – Hazards and Natural Resources of *The London Plan*. The Regulatory Flood Standard for the UTRCA and LTVCA is based on a 1937 observed Flood Event, and the Regulatory Flood Standard for the KCCA is based on the Hurricane Hazel storm (1954).

Any lands within the City of London that fall within CA jurisdiction must adhere to applicable regulations. Regulations ensure that development has consideration for areas affected by flood hazards, erosion hazards, wetlands, and the area of interference surrounding wetlands. Relevant sections of implementing regulations of each CA are further outlined below.

1. Upper Thames River Conservation Authority

The *UTRCA Regulation*, created under “Section 28” of the *Conservation Authorities Act*, was approved by the Ontario Minister of Natural Resources and Forestry on May 4, 2006. The regulation ensures that development has consideration for areas affected by flood hazards, erosion hazards, wetlands, and the area of interference surrounding wetlands. UTRCA develops hazard mapping that identifies the location of hazard areas to support implementation of the regulation. Development in flood plains must adhere to UTRCA regulations that are based on flood standards set by the Province.

Section 2 of the *UTRCA Implementing Regulation* prohibits development within river or stream valleys that have depressional features, hazardous lands, wetlands, or other areas where development could interfere with the hydrologic function of a wetland. This includes areas within 120 metres of all provincially significant wetlands and wetlands greater than two hectares in size, and areas within 30 metres of all other wetlands.

Section 12 of the *UTRCA Implementing Regulation* outlines areas included in the UTRCA Regulation Limit, which includes hazardous lands, wetlands, shorelines, and areas susceptible to flooding and associated allowances within the watersheds in the UTRCA area of jurisdiction.

Relevant maps from UTRCA pertaining to protection of significant environmental areas and features include the following:

- Regulated Area Screening Map,
- Dingman Subwatershed Screening Area Map, and
- Thames-Sydenham Source Protection Region Map.

2. Kettle Creek Conservation Authority

Under *Ontario's Generic Regulation*³⁸, KCCA regulates natural features and activities, including development and activities in river or stream valleys, Great Lakes, and large inland lakes' shorelines, hazardous lands, and wetlands. Permission may be required from KCCA if any proposed development within its jurisdiction may impact the control of flooding, erosion, dynamic beaches, pollution, or the conservation of land. KCCA further regulates changing or interfering in any way with existing river channels, creeks, streams, watercourses, or wetlands. KCCA's *Generic Regulation (Ontario Regulation 181/06) Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*, was approved on May 4, 2006. The purpose of the regulation is to ensure public safety with regards to natural hazards.

3. Lower Thames Valley Conservation Authority

LTVCA, created under *Ontario Regulation 152/06*, sets policies for development within the LTVCA jurisdiction area. Areas that are included in the LTVCA Regulation Limit include hazardous lands, wetlands, shorelines, and areas susceptible to flooding, and associated allowances within the watersheds in the area of jurisdiction as shown on Maps 1 to 128, dated May 2006. The LTCVA may grant permission for development within its jurisdiction if it determines that the development will not result in flooding, erosion, dynamic beaches, pollution, or the conservation of land.

4. Thames, Sydenham and Region Source Protection Plan and Policies

Ontario's *Clean Water Act (2006)* ensures that valuable drinking water sources are protected through watershed-based plans, known as source protection plans. These locally-driven plans help to protect drinking water sources by determining areas that are vulnerable to contamination, identifying potential threats to drinking water, and developing plans to deal with the identified threats.

The *Source Protection Plan* for the Thames-Sydenham and Region affects the City of London. The Thames-Sydenham and Region is made up of the watersheds of the Upper Thames River CA, Lower Thames Valley CA, and the St. Clair Region CA. These CAs partner together to coordinate the development of source protection plans for the area's watersheds, providing direction to the City of London on planning requirements for land use and activities that must conform to the *Clean Water Act* and protect sources of water linked to watersheds.

³⁸ Ontario Regulation 97/04: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. <https://www.ontario.ca/laws/regulation/040097>

General policies in *Volume III* of the *Source Protection Plan* provide direction on land use planning (Policy 1.06) requiring land uses and activities to conform with “Section 57” of the *Clean Water Act* (Act) and *Source Protection Plan* policies. Other relevant policies include the following:

- Policy 1.07 requires that areas where “Sections 57” or “Section 58” of the Act applies, all land uses identified within the official plan and/or zoning by-laws, with the exception of residential uses, are designated for the purposes of “Section 59” (Restricted Land Uses) of the Act.
- Policy 1.08 provides direction for restricted land uses for event-based modelled threats and requires a notice from the Risk Management Official in accordance with “Section 59(2)” of the Act prior to approval of any Planning Act or building permit application for any commercial, agricultural, and industrial land uses, identified within municipal official plans and/or zoning by-laws, and located in areas where event-based modelling has identified activities as significant drinking water threats.
- Policy 1.09 requires updates to zoning by-laws be initiated as soon as possible after the effective date of the *Source Protection Plan* and be adopted within three years of the effective date of the *Source Protection Plan*.
- Policy 1.10 provides transitional provisions for development proposed through a site-specific amendment to a zoning by-law under “Subsection 34(10)” of the *Planning Act*.

Moderate and Low Threat Policies, under “Section 3.3” in *Volume II* of the *Source Protection Plan*, aim to reduce the risk to municipal drinking water source from new activities by directing the Province to prescribe terms and conditions to manage the activity such that it does not become a Significant Drinking Water Threat (OC-3.02).

Policies OC-1.10 and OC-1.11 in *Volume II* of the *Source Protection Plan* relate to provincial and municipal signage and require that signage be designed according to appropriate provincial standards to identify Wellhead Protection Areas (WHPAs) and Intake Protection Zones (IPZ), and that municipalities consider placing Source Protection advisory signage where municipal arterial roads are located within WHPAs with a vulnerability score of 10, within IPZs with a vulnerability score of 8 or higher, or within an IPZ-3 (event-based areas).

All of the groundwater wells at Fanshawe (six) and Hyde Park (one) were formerly emergency back-up wells and all have been decommissioned. These wells are no longer identified as WHPAs and are not vulnerable areas.

City of London Plans and Guidelines

The London Plan

The City of London’s Official Plan, *The London Plan*, was approved by the Province in December 2016 and remains partially under appeal at the Ontario Land Tribunal. The *1989 Official Plan* was adopted by City Council on June 19, 1989 (to replace the *1971 Official Plan*).

In reviewing the vision of *The London Plan* against the vision in the *1989 Official Plan*, using an

environmental and sustainability lens, several differences are apparent:

- The vision of the *1989 Official Plan* notes that actions will be socially, environmentally, and fiscally responsible. Meanwhile, *The London Plan* vision introduces the notion of “thinking sustainably” – specifically that environmental sustainability is one of the underlying considerations in all planning decisions.
- The *1989 Official Plan* plans until the year 2016, with an anticipated population of 385,300 people. *The London Plan* plans until the year 2035, with an anticipated population of 458,000 people and 241,000 jobs.
- In the *1989 Official Plan*, “Environmental Leadership” and “Managed and Balanced Growth” are identified as two of the strategic priorities to help achieve the vision. These strategic priorities have high-level goals aimed at encouraging an environmentally sensitive city. *The London Plan* includes key directions to give focus and provide a clear path to achieve the vision. Direction #4, “Become one of the greenest cities in Canada” includes 17 planning strategies related to this direction to serve as a foundation to related policies of *The London Plan*.

From a sustainable growth standpoint, several major shifts in official plan vision statements and policy goals are noted:

- A shift to a more holistic approach to sustainability in *The London Plan*. Climate change is specifically identified as a challenge, with an aim to shift to a heavier reliance on active transportation and transit and a reduction in greenhouse gas emissions.
- *The London Plan* notes the number of people and jobs planned for a 20-year horizon, emphasizing the need to have a Plan that responds to London’s new and changing context (including changing preferences and growing diversity).
- *The London Plan* includes specific, action-oriented items focused on climate change mitigation and adaptation. This includes reference to sustainable/green development standards and tools (such as LEED).
- The ReThink London process, a widespread community engagement initiative, helped to inform *The London Plan* by asking, What kind of city do we want to live in 20 years from now?. As part of this process, residents emphasized the importance of a healthy natural environment and ecosystem, remediation of contaminated sites, and clean air quality in shaping the healthy city they aspire to live in (LP 23).

The City of London also has several sustainable growth and development plans and guidelines. The *2019-2023 Strategic Plan* includes over 30 strategies and actions to support climate change mitigation and adaptation. The plan outlines objectives for building a sustainable city, including the following:

- London’s infrastructure is built, maintained, and operated to meet the long-term needs of our community.
- London’s growth and development is well planned and sustainable over the long-term.
- London has a strong and healthy environment.
- Londoners can move around the city safely and easily in a manner that meets their needs.

The Natural Heritage System Guidelines refer to 14 documents that provide guidance on various aspects of the Natural Heritage System, including but not limited to:

- *Guidelines for Determining Setbacks and Ecological Buffers.*
- *Guidelines for the Preparation and Review of Environmental Impact Studies.*
- *Planning and Design Standards for Trails in Environmentally Significant Areas.*

The Parks, Recreation, and Open Space Guidelines refer to five documents that provide guidance on various aspects of parks, recreation, and open space, including:

- *Guidelines for the Development of Parks and Open Space.*
- *Parks and Recreation Master Plan.*
- *Thames River Valley Corridor Plan.*
- *Tree Planting and Protection Guidelines.*
- *Urban Forestry Strategy.*

In addition, the *Brownfields Incentives Community Improvement Plan (Brownfields Plan)* aims to remove or reduce barriers to remediation and redevelopment of brownfield sites in London. The redevelopment of brownfield sites can result in efficient use of infrastructure, improvements to the environment, and vibrant communities. The *Brownfields Plan* uses financial incentives to evaluate contaminated sites and encourages private sector investment in remediation and redevelopment efforts.

Finally, the *Draft Climate Emergency Action Plan* includes 10 Areas of Focus and implementation workplans focusing on mitigation and adaptation efforts to reduce the impacts of fossil fuel use and to build resiliency to climate change impacts in London. The three main goals of the *Draft Climate Emergency Action Plan* are the following:

1. Net-zero community greenhouse gas emissions by 2050.
2. Improved resilience to climate change impacts (particularly for buildings and transportation).
3. Bring everyone along (e.g., individuals, households, businesses, and neighbourhoods).

Appendix F. Municipal Scan

The purpose of this section is to explore recent municipal zoning by-laws in Ontario and identify success factors in setting regulations that help to develop sustainable communities and protect environmentally sensitive areas, particularly those that support climate change mitigation and adaptation. The Consultant Team reviewed zoning by-laws from six Ontario municipalities, including the Town of Newmarket, the City of Vaughan, the Town of Oakville, the City of Markham, the City of Toronto, and the City of Guelph.

The municipalities were selected based on the following criteria:

- Have a mix of municipal types in terms of urbanization/density (3 large urban, 2 medium urban, 1 medium urban-rural);
- Have a recently approved or updated official plan, at least partly in force;
- Have a single municipal-wide zoning by-law (with varying original dates; note the Cities of Markham and Guelph are undergoing comprehensive zoning by-law reviews, expected to be completed by Q1 and Q3 of 2022, respectively); and
- Be within the jurisdiction of a conservation authority (i.e., the Toronto and Region Conservation Authority, Grand River Conservation Authority, Lake Simcoe Region Conservation Authority, and Conservation Halton).

1. Municipality: Town of Newmarket

By-law: *Zoning By-law 2010-40 (By-law)*

Status: In force

Key Takeaways:

Parking

- The Newmarket *Zoning By-law* requires a landscaped buffer area for parking lots designed to accommodate five or more parking spaces within any Downtown, Urban Centre, Employment, Commercial, Institutional, Open Space or Residential Four (R4) or Residential Five (R5) Zone.
- The By-law permits reduced parking standards for some residential and non-residential uses in areas within close proximity to transit in urban centres (“Section 5.3.3.3”). The parking standards may be reduced by 30% if the site is within a walking distance of 500 metres of the GO train station or GO bus terminal properties.
- Carpool parking spaces are required for some non-residential uses, such as financial institution, hospital, library, medical clinic, medical office building, medical and dental laboratories, office, elementary school, secondary school, or post-secondary school uses in Urban Centres (“Section 5.3.3.4”). The lesser of 5% of the total required parking supply for the specified non-residential uses, or 2.0 parking spaces are required to be carpool parking spaces.
- Car-share parking spaces for some residential uses in Urban Centres are also required (“Section 5.3.3.5”). Minimum parking space requirements may be reduced for any mixed-use building or

apartment building that provides car-share parking and does not include any financially-assisted dwelling units. Minimum required parking spaces may be reduced by up to three parking spaces for each dedicated car-share parking space.

- Required parking spaces in Newmarket's Downtown (UC-D1) Zone shall not exceed the minimum requirements ("Section 5.3.4"). Additional parking is not required for a change from one permitted use to another within any existing building in the UC-D1 Zone. The Newmarket By-law permits that existing on-site parking currently for commercial purposes be used for new dwelling units and cash-in-lieu of parking for reduction of parking for commercial purposes.
- The By-law permits using the shared parking formula for the calculation of required parking for mixed-use developments ("Section 5.3.5").

Overlays and Protection Zones

- The Newmarket *By-law* protects areas prone to flooding or other natural hazards such as erosion, steep slopes and unstable soils ("Section 7.1") by limiting development within the Floodplain and Other Natural Hazards Zone.
- Protection zones, such as the Open Space One (OS-1), Open Space Two (OS-2), and Environmental Protection (OS-EP) Zones also limit development and permit only a few uses such as accessory buildings and structures, conservation use, and recreational trails. The OS-1 and OS-2 Zones permit some additional uses such as parks and outdoor recreation facilities.

Other

- The Newmarket *By-law* ("Section 4.5") permits one accessory dwelling unit per lot in a single detached, or semi-detached dwelling.
- The definition for "Residential Structure – Accessory" includes standalone solar panels.

2. Municipality: City of Vaughan

By-law: *City-Wide Comprehensive Zoning By-law (CZBL)*

Status: In force

Key Takeaways:

Secondary Suites

- Secondary suites are permitted in all Residential zones, city-wide.
- CZBL ("Section 5.2") permits a maximum of one secondary suite per lot within a principal dwelling.

Parking

- The CZBL uses context-specific parking rates. Minimum and maximum parking rates for different areas of the City are based on land uses. No change has been made to parking requirements in established residential and employment areas, but surface parking has been minimized in Main Street and Intensification areas.
- A progressive approach to minimizing surface parking and establishment of minimum and

maximum parking rates are utilized for mixed-use development areas, main street development areas, and the Vaughan Metropolitan Centre.

Amenity Areas

- The CZBL establishes amenity area requirements that represent the minimum amenity area necessary to support more dense forms of development that the City is transitioning toward. This includes recognition of private balconies, rooftop spaces, and other common area amenities, while ensuring balanced continuous outdoor amenity space.
- In many residential zones, any portion of a yard greater than 135.0 m² requires a minimum 60% soft landscape (Section 4.19).

Agriculture

- Existing agricultural uses are permitted in the Environmental Protection (EP) Zone to mitigate risk of creating a legally non-conforming agricultural use. The EP Zone includes open space, conservation, or agricultural zones. It also protects Vaughan’s open space systems and Natural Heritage Network.

Stormwater

- In all zones, the CZBL permits “landform features to mitigate erosion or manage stormwater runoff, such as bioswales, permeable surfaces, rain gardens, infiltration trenches, or other similar low impact development features” (Section 4.15.2, No. 3). These features are not subject to the requirements of the CZBL.

Overlays and Protection Areas

- Vaughan does not have a single zone targeted to the Natural Heritage System.
- Similar to the official plan, the by-law does not identify flood vulnerable areas.
- Most hazardous lands are zoned Open Space Conservation. Hazardous lands in the *Oak Ridges Moraine Conservation Plan* and *Parkway Belt West Plan* areas are generally zoned Open Space Environmental Protection and Parkway Belt Open Space, respectively.
- The Open Space Conservation zone permits limited uses, including driving ranges, golf courses, publicly accessible recreational uses, and conservation and forestry projects (“Sections 7.1.2 and 7.2”). Only structures conservation or flood control (Section 7.2.1) are permitted.
- Permissions for the Open Space Environmental Protection zone are fairly similar (“Section 7.4b”). Permissions for the Parkway Belt Open Space zone within the flood plain are the same as for the Open Space Conservation zone (“Section 7.5.2”).

3. **Municipality:** Town of Oakville
By-law: *By-law 2014-014* (By-law)
Status: In force

Key Takeaways:

Secondary Suites

- Permitted in all Residential zones city-wide.
- The By-law also contains provisions for accessory units in Commercial zones.

Parking

- No minimum parking space requirements for home occupation (i.e., accessory residential use), private home daycare, public works yard, emergency service facility, post-secondary school, agriculture, cemetery, conservation use, or public and private parks.
- No minimum requirements for permitted non-residential uses (other than hotels and public halls) in a mixed-use zone in Downtown Oakville.
- In key Growth Areas, the minimum number of parking spaces required in Mixed-Use Zones are reduced to support the strategic and policy objectives related to transit, growth management, and design (“Section 5.2.2”).
- Cash-in-lieu of some or all parking spaces and bicycle parking spaces required for non-residential uses in some areas of the Mixed-Use Zone may be made if the Town enters into an agreement with the landowner (“Section 5.1.6”).

Agriculture

- Height provisions do not apply to buildings and structures used for agriculture.

4. **Municipality:** City of Markham
By-law: *Comprehensive Zoning By-law Review Project*
Status: In progress

Key Takeaways:

Secondary Suites

- Permitted in all zones, city-wide, according to official plan policies.
- The *Markham Official Plan* establishes that, at a minimum, all areas in the city designated as Residential, Mixed-Use, and Countryside should provide for secondary suites.

Parking

- The draft *Markham Parking Strategy* draws attention to two key features regarding parking standards within the scope of the Comprehensive Zoning By-law Review Project:
 - Applying adjustment factors to parking ratios, and
 - Parking Ratios in the context of a parking management strategy.

- Markham's existing Urban Area By-law (By-law 177-96) states that no parking spaces are required for any non-residential use within retail and mixed-use zones.

5. **Municipality:** City of Toronto

By-law: *Zoning By-law 569-2013*

Status: In force

Key Takeaways:

Secondary Suites

- Permitted city-wide in all Residential, Commercial, and Institutional zones (*Amendment to By-law 569-2013*).

Parking

- Initiates a new set of parking ratios that vary across the planning policy districts identified in the official plan, with an approach that utilizes minimum parking requirements inversely with the level of transit service in specified policy areas.
- Maximum parking ratios are applied to four Parking Policy Areas that have the highest level of transit service in the city.

Overlays and Protection Zones

- The City of Toronto has no flood vulnerable areas. In the official plan, hazardous lands are generally within the Natural Heritage System, which is an overlay designation. Undeveloped hazardous lands are zoned Open Space Natural. Recreational lands are zoned Open Space Recreation and Open Space Golf. Much of the City's hazardous lands are developed for other purposes and zoned accordingly. The Open Space Natural zone is the only zone in Toronto specifically relating to the Natural Heritage System and is generally only applied to undeveloped lands. The Open Space Natural zone permits some existing uses as well as cogeneration energy or renewable energy production, and retail stores (not fully enclosed in a building) associated with an agricultural use.

Other Actions

- *Toronto Green Standard*

The *Toronto Green Standard* presents Toronto's sustainable design and performance requirements for new developments that works toward mitigating and adapting to climate change impacts. The Standard consists of tiers of performance, with Tier 1 being mandatory and applied through the planning approval process.

- *Design Guidelines for Greening Surface Parking Lots*

Design guidelines that aim to develop efficient, safe, attractive, and environmentally-responsible surface parking lots.

6. Municipality: City of Guelph

By-law: *Zoning By-law (1995)-14864*

Status: In force

Key Takeaways:

Overlays and Protection Zones

- Guelph has a two-zone (Floodway or Wetland zone) flood plain concept in some areas. The Wetland zone permits a wetland, flood control facility, recreation trail approved by Grand River Conservation Authority (GRCA), or wildlife management area (“Section 13.2.1”). The Floodway zone additionally permits only conservation areas, municipal services and public utilities, outdoor sportsfield facilities approved GRCA, picnic areas, and recreation trails (“Section 12.2.1”). Any new structures are prohibited in the Wetland zone (“Section 13.2.2”). New structures are also prohibited in the Floodway zone, except structures associated with flood and erosion control or sewage treatment facilities (“Sections 12.2.2.1 and 12.2.2.1.1”).
- Guelph has an overlay of a Special Policy Area in downtown in which all development is prohibited in the “hydraulic floodway” (“Section 12.4.1.1”). Uses relating to production of hazardous materials or potential contamination are also prohibited (“Section 12.4.1.3”). New structures are required to be flood proof (“Sections 12.4.2.1-12.4.4”).
- In the official plan, hazardous lands outside of special policy areas are within Significant Natural Areas and Natural Areas base designation or the Open Space base designation. There is no single zone specifically targeted to the Natural Heritage System. Most of the system is zoned Floodway or Wetland, or Conservation Land, which is one of several park zones.

Draft Comprehensive Zoning By-law

Guelph’s draft *Comprehensive Zoning By-law* (Part B, Section 3) provides new definitions for agricultural uses that are differentiated in terms of function and permitted in more urban settings, including:

- Agricultural produce market: “... a premises where agricultural products are displayed for sale or sold.” This use is permitted in Downtown Zones and within areas defined in the site-specific High Density Residential 7 Zones.
- Agricultural research institution: “... a premises where agricultural products and practices are researched or developed.” This use is permitted in the site-specific Institutional Research Park Zones.

Key takeaways from the municipal scan in terms of parking standards and mobility, gentle density and sustainable development, and protection of environmentally significant areas are summarized below.

Parking Standards and Mobility

Newmarket, Vaughan, Oakville, Markham, and Toronto all use varying parking standards in an effort to reduce reliance on private vehicles and encourage increased use of public transportation.

- In Newmarket parking standards may be reduced by 30% if a site is within a walking distance of 500 m of the GO rail station or bus terminal. Newmarket includes regulations for carpool parking spaces, car-share parking spaces, shared parking formulas, and cash-in-lieu of parking. The City has also taken steps to minimize surface parking in Main Street and Intensification areas.
- Vaughan uses a progressive approach to minimizing surface parking and established minimum and maximum parking rates for mixed-use development areas, main street development areas, and the Vaughan Metropolitan Centre.
- Town of Oakville, which eliminated minimum parking requirements for several land uses, including for permitted non-residential uses in the Downtown Oakville Mixed-Use zone. The by-law permits cash-in-lieu of some or all parking spaces and bicycle parking spaces required for non-residential uses in some areas of the Mixed-Use Zone through a development agreement with the Town.

Gentle Density and Sustainable Development

Low impact development can be promoted through zoning by-laws. Vaughan, Oakville, Markham, and Toronto allow for accessory dwelling units or secondary suites, with the Cities of Markham and Toronto permitting secondary suites in all zones, city-wide. The City of Vaughan permits “landform features to mitigate erosion or manage stormwater runoff, such as bioswales, permeable surfaces, rain gardens, infiltration trenches, or other similar low impact development features”³⁹ in all zones. These features are not subject to the requirements of the zoning by-law.

Outside of the scope of its zoning by-law, the City of Toronto has developed the *Toronto Green Standard* that implements sustainable design and performance requirements for new developments that works toward mitigating and adapting to climate change impacts. The City has also developed *Design Guidelines for Greening Surface Parking Lots* that aim to develop efficient, safe, attractive, and environmentally-responsible surface parking lots.

The City of Vaughan has established amenity area requirements that represent the minimum amenity area necessary to support more dense forms of development that the City is transitioning toward.

Protection of Environmentally Significant Areas

The City of Toronto permits a wide range of educational, institutional, public service, and recreational facilities and structures within its flood plain policies. The Cities of Guelph and Vaughan, on the other hand, prohibit all structures except those related to flood control, conservation (Vaughan), or sewage treatment (Guelph). Guelph entirely prohibits structures in its Wetland zone. Guelph also has Vegetation

³⁹ City of Vaughan Zoning By-Law 1-88, Section 4.15.2, #3

Protection zones concurrent with adjacent development.

Some best practices related to agriculture include:

- The elimination of height provisions to buildings and structures used for agriculture in the Town of Oakville.
- Guelph's draft *Comprehensive Zoning By-law* provides new definitions for agricultural uses that are differentiated in terms of function and permitted in more urban settings.
- Vaughan permits existing agricultural uses in an Environmental Protection (EP) Zone to mitigate risk of creating legally non-conforming agricultural uses. The EP Zone includes open space, conservation, or agricultural zones. It also protects Vaughan's open space systems and Natural Heritage Network.

These practices work toward setting environmentally-responsive regulations in zoning by-laws by making the tool more permissive toward sustainable development, including promotion of compact, transit-oriented forms of development, protection of natural areas, and diversification of agricultural uses.

Appendix G. International Examples

Nationale Omgevingsvisie (National Environmental Vision)

NOVI is a new Dutch planning law that mandates the creation of environmental visions at different levels of governance – national, provincial, regional, and municipal. Its goal is to bundle different spatial tasks siloed across sectors into coherent and integrated approaches. These spatial tasks include: climate adaptation (energy transition, biodiversity, flood protection); urban development (infrastructure, housing, and work); and agriculture. As these challenges require space and development visions across sectors that are often in conflict with each other, tackling them at once into a strategic environmental vision helps address potential conflicts before they arise. See: <https://denationaleomgevingsvisie.nl/>.

Ruimte voor de rivieren (Room for the Rivers)

The Room for the Rivers project introduced measures to manage river flooding by creating a series of floodable landscapes. While flood protection through expansion of the riverbed and creating flood plains was the main goal, the planning process highlighted the multifunctionality of the new landscapes. As a result, several interventions were designed in collaboration with local governments and residents to ensure multiple stakeholder goals were met, in addition to flood defence, such as recreational opportunities and farming, were achieved.

Vlaams Bouwmeester Scan (Flemish Architect Scan)

The Vlaams Bouwmeester Scan analyzed several Flemish municipalities to highlight policy strengths and weaknesses in the field of spatial planning. Its goal is to achieve a more sustainable, healthier, and adaptable living environment. Spatial guidelines are developed for each municipality, analyzed, and compiled in a report, available on the Bouwmeester Scan website. See: <https://www.vlaamsbouwmeester.be/nl/subsite/bouwmeester-scan>.

Ontwikkelperspectief 2040 Centrum Eindhoven (Development Perspective for Eindhoven Centre)

To improve the quality of the city, seven city projects dealing with slow mobility and green infrastructure were identified. In addition, land use requirements for private developers were set where they must provide a minimum 8 m² of green space per housing unit, and a minimum of two bike parking spots per household. Alternatively, developers can contribute to collective green and parking solutions in the city projects.

Integrale Wijkaanpak (Integrated Neighbourhood Approach)

The Integrated Neighbourhood Approach is a planning and design approach developed by TNO and PosadMaxwan. In line with the *NOVI* approach, it proposes a method to deal with spatial transitions

at a neighbourhood level. The approach consists of: itemization of the spatial challenges of a given area both in space and time (where and when); identification of synergies, conflicts, and leading versus following transitions (i.e., ones with most traction versus the ones with less); elaboration of a few development packages that link different transitions together; and proceeding with the most effective and desired package. See <https://www.citydealopenbareruimte.nl/kennisdeling/publicaties/1949755.aspx?t=Integrale-Wijkaanpak>.



Integrated Neighbourhood Approach - Nature inclusiveness tactics at the neighbourhood level



Integrated Neighbourhood Approach - Climate adaptation tactics at the neighbourhood level

Appendix H. Specific Interventions by Transect

	Policy Goal	Transect					
		Natural/ Environmental	Rural	Suburban	Urban Corridor	Urban Centre	Special Districts Community
Climate Actions	Growth Management	<ul style="list-style-type: none"> Preserve natural heritage and natural hazard areas through an overlay. Limit development in natural heritage and hazard areas. 	<ul style="list-style-type: none"> Allow for gentle, context-sensitive density by permitting accessory dwellings or secondary suites that support agricultural uses. 	<ul style="list-style-type: none"> Permit housing forms in neighbourhoods that increase gentle density and infill (i.e., accessory dwelling units, secondary suites, laneway housing) in a sensitive manner. Encourage a variety of housing types 	<ul style="list-style-type: none"> Create mixed-use zones to permit compact, higher residential densities in and along urban centres and transit corridors. 	<ul style="list-style-type: none"> Encourage brownfield remediation. Encourage greater mix and density of uses provided there are no adverse impacts on surrounding sensitive land uses. 	<ul style="list-style-type: none"> Encourage adaptive reuse of existing buildings and redevelopment of underutilized sites.
	Mobility	<ul style="list-style-type: none"> Ensure development of trails in natural areas does not result in adverse impacts. Connect trails and parks to encourage active transportation 	<ul style="list-style-type: none"> Provide opportunities for cycling and multi-purpose trail use. Encourage connectivity between transit areas and agricultural uses that would benefit from transit access. 	<ul style="list-style-type: none"> Consider requirements for on-site Electric Vehicle, bicycle and alternative transportation infrastructure (e.g., carpool parking spaces, shared parking). Reduce or eliminate parking standards in appropriate areas. Reduce large surface parking lots and/or require landscaping and greening of surface parking. Create compact, transit-supportive neighbourhoods. Direct density, intensification, and ridership-generating uses to areas within close proximity to transit. 			
	Energy	<ul style="list-style-type: none"> Permit Low Impact Development features Develop permissive policies for solar energy infrastructure. 	<ul style="list-style-type: none"> Allow for large-scale solar energy systems and wind turbines. 	<ul style="list-style-type: none"> Allow for district energy systems, and smaller scale wind and solar energy systems integrated within the building. Require layout of development and subdivision lots to optimize sun exposure for energy efficiency. Require installation of cool paving technologies, green roofs, landscaping, and softscaping. Promote design that increases energy efficiency through performance standards and incentives. Provide opportunities for ground-sourced thermal energy use. 			

	Policy Goal	Transect							
		Natural/ Environmental	Rural	Suburban	Urban	Urban Corridor	Urban Centre	Special Districts Community	Special Districts Industrial
Climate Actions	Water	<ul style="list-style-type: none"> Protect water sources and utilize subwatershed planning for development. 	<ul style="list-style-type: none"> Require permeable surfaces where possible including soft landscaping. Permit stormwater management infrastructure such as rain garden, bioswales, green roofs, etc. where appropriate. 						
	Natural Hazards and Natural Heritage	<ul style="list-style-type: none"> Protect natural hazard and heritage areas. Protect Fanshawe and Hyde Park areas, identified as vulnerable in the Thames- Sydenham and Region Source Protection Plan. 	<ul style="list-style-type: none"> Require flood proof design regulations for limited development permitted in flood-prone areas. Preserve native tree species and tree coverage through implementation of a tree conservation by-law, design standards and guidelines or site plan agreements. Require public amenity/open space as part of development. Require drought/flood tolerant vegetation for development. 						
	Agriculture	N/A	<ul style="list-style-type: none"> Protect prime agricultural lands. Permit diversified agricultural uses. Permit event-type and temporary or conditional uses that support agricultural uses in rural areas. Encourage agricultural uses and natural areas that absorb greenhouse gas emissions. 	<ul style="list-style-type: none"> Permit compatible urban agricultural uses. Create policies for open public space to support urban community gardens. 			<ul style="list-style-type: none"> Allow for agricultural and food-related uses such as vertical/ urban farms, aquaponics, and micro-breweries. 		

Appendix I. Transect Application to London’s Place Types

The Consultant Team recommends organizing the new London zoning by-law using a rural-to-urban transect that places all of the elements of the built environment in an orderly progression from the most rural to the most urban. This approach is introduced in the *Discussion Paper #2. Zoning in on Intensification* and is identified in the table below.

Transect Application to London’s Place Types		
Sample Transect (Place Type Districts)	London Plan Place Types	Categorization in London Plan
Natural/Environmental	Green Space	City-wide
	Environmental Review	City-wide
Rural	Farmland	Rural Place Types
	Rural Neighbourhoods	Rural Place Types
Suburban	Neighbourhoods	Urban Place Type
	Shopping Area	
Urban	Shopping Area	Urban Place Type
	Main Street	Urban Place Type
	Neighbourhoods	Urban Place Type
Urban Corridor	Rapid Transit	Urban Place Type
	Urban Corridor	Urban Place Type
Urban Centre	Downtown	Urban Place Type
	Transit Village	
Special Districts, Community	Institutional	Urban Place Type
	Future Community Growth	Urban Place Type
Special Districts, Industrial	Industrial	Urban Place Type
	Waste Management Resource Recovery Area	Rural Place Types
	Future Industrial Growth	Urban Place Type

Appendix J. Planning and Municipal Tools for Climate Change Adaptation

According to the Government of Canada (2012), additional land use planning tools for local adaptation to climate change include:

- **Design Guidelines:** Design guidelines can support municipal goals such as greater environmental performance, reduction in infrastructure costs, compact development, and pedestrian-oriented streets. For example, design features can be utilized to reduce impacts of the urban heat island effect by preventing the development of large surface parking lots, enhancing pedestrian-friendly streetscapes, and protecting public open space.
- **Plan of Subdivision:** Subdivision plans can be required to demonstrate efficient neighbourhood-scale transportation infrastructure, landscaped open space, efficient utility services, and address concerns about environmental impacts. Additional zoning permissions to allow for denser development through plans of subdivision can allow for energy-efficient development, such as the implementation of district energy systems.
- **Covenants and Easements:** Covenants and easements can be used to prevent development in environmentally sensitive areas.
- **Environmental Reviews and Assessments:** Reviews and assessments of environmental consequences of development can include recommendations to mitigate potential impacts.
- **Development Agreements:** Development agreements can be used to apply controls or conditions on development.

Other municipal tools that can be explored to address climate change impacts include:

- **Holding Provisions:** Holding provisions apply conditions to prevent the development of a site until it is demonstrated that a proposal meets local needs and does not impact municipal priorities, such as environmental protection.
- **Green/LEED Standards:** Green development standards can promote sustainable design features of a building such as efficient energy, wastewater, and stormwater systems. LEED standards provide a framework for developing healthy, efficient, carbon, and cost-saving green buildings, and encourage sustainable development through tools such as performance measurement criteria.
- **Technical Studies:** Technical studies help to evaluate and identify sustainable practices in areas such as stormwater management and transportation (e.g., to develop strategies that promote active transportation modes).
- **Community Energy Plan:** These plans use an integrated approach by aligning components such as energy, infrastructure, and land use planning to support municipal management of energy needs.



RETHINK ZONING

DISCUSSION PAPERS

6 ZONING IN ON PLACE TYPES

JUNE 2022



Land Acknowledgment

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-inah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.



Source: The London Plan



Source: The London Plan

Executive Summary

This paper builds on The London Plan, which introduced Place Types as a way of organizing and describing the nature of the different geographic locations that together make up the city. This fresh approach will also be used to develop a new zoning by-law that implements The London Plan's vision for the future: a city of highly functional, connected, and desirable places, supported by a modern regulatory framework.

*The London Plan moves away from a traditional approach to planning, replacing land use designations with Place Types, each with their own function, structure, and feel. This approach highlights the importance of form and intensity, not just use, on the experience of a city. As a new comprehensive zoning by-law is needed to implement *The London Plan* policies, an equally innovative approach to zoning is necessary.*

As part of the first phase of the ReThink Zoning project, a series of seven discussion papers has been prepared to explore the challenges and opportunities of zoning for use, intensity, and form; the relationship between zoning and the climate emergency, and zoning and housing affordability; and on implementation. This discussion paper delves into *The London Plan's* policies to determine specific zoning issues for the 15 Place Types that together make up the City of London.

This discussion paper involves an exercise in translating policies into desired and undesired outcomes which can then be encouraged or discouraged through a precise use of zoning regulations. For each of the 15 Place Types, the vision and zoning considerations are outlined along with a preliminary approach to zone codes and classes to implement the Place Type. In doing so, this paper, along with the others, sets the conceptual foundation for drafting London's new comprehensive zoning by-law. The next stages will include analyses of existing conditions in the context of the existing regulatory framework and of active and closed development applications, to ground zoning concepts within the London experience as we move towards a new zoning by-law for the City.



TABLE OF CONTENTS

Source: The London Plan

1.0 INTRODUCTION 10
1.1 Purpose 12
1.2 Guiding Principles 13

2.0 PLACE TYPES AND IMPLICATIONS FOR ZONING 16
2.1 City-Wide Place Types 18
2.2 Urban Place Types 21
2.3 Rural Place Types 39

3.0 NEXT STEPS 44

APPENDIX 46
Appendix. Planning Priorities and Zoning Considerations by Place Type 47

LIST OF FIGURES

Figure 1 Transect Application to London’s Place Types (Draft)	12
Figure 2 Relative weighting of use, intensity, and form considerations for the eight Transect Zones	13

LIST OF TABLES

Table 1 Planning Priorities and Zoning Consideration, Green Space (GS)	47
Table 2 Planning Priorities and Zoning Consideration, Environmental Review (ER)	47
Table 3 Planning Priorities and Zoning Consideration, Downtown (D)	47
Table 4 Planning Priorities and Zoning Consideration, Transit Village (TV)	49
Table 5 Planning Priorities and Zoning Consideration, Rapid Transit and Urban Corridors (RT, UC)	50
Table 6 Planning Priorities and Zoning Consideration, Shopping Area (SA)	52
Table 7 Planning Priorities and Zoning Consideration, Main Street (MS)	53
Table 8 Planning Priorities and Zoning Consideration, Neighbourhoods (N)	55
Table 9 Planning Priorities and Zoning Consideration, Institutional (I)	56
Table 10 Planning Priorities and Zoning Consideration, Industrial (IH, IL, CI)	57
Table 11 Planning Priorities and Zoning Consideration, Future Growth (FG)	57
Table 12 Planning Priorities and Zoning Consideration, Farmland (F)	58
Table 13 Planning Priorities and Zoning Consideration, Rural Neighbourhoods (RN)	58
Table 14 Planning Priorities and Zoning Consideration, Waste Management Resource Recovery Area (WM)	59



Primarily
Paper

Fine Paper
Stationery
Invitations
Scrapbooking

Home of
A LITTLE
BIT OF PIXIE DUST

Source: The London Plan

1.0 INTRODUCTION

Adopted in 2016, *The London Plan* established a new approach to planning. Moving away from a more traditional approach of identifying parts of the city and regulating development by land use, the Plan assigns a Place Type to all lands in the City of London, each with its own function, structure, and feel. The policies associated with each Place Type provide for a general range of uses, form, and intensity of development that may be contemplated with the overall intent of creating a system of highly-functional, connected, and desirable places characterized by variety and diversity. The new, comprehensive London zoning by-law will implement the policies of *The London Plan*, aligned with all *Planning Act* requirements, and promote innovation and improved accessibility. Most importantly, it will balance land use with intensity and form to achieve the “mosaic of outstanding places” envisioned by *The London Plan*.

Among the 15 Place Types identified in *The London Plan*, two are City-Wide, ten are Urban, and three are Rural. Each has its own unique implications for zoning. Although the overall intent is to balance use, intensity, and form more equally in the new zoning by-law, some Place Types will be defined more by one characteristic than another. The challenge will be to understand the specific policy goals for each Place Type and to identify the zoning tools and regulations best equipped to encourage desirable outcomes or prevent undesirable outcomes.

Use: The types of activities permitted on a property; examples include residential, office, commercial, industrial, and institutional.

Intensity: How much of an activity is permitted on a property; could be measured in terms of the size of a building (height) or the scale/density of the activity itself (gross floor area, units per hectare).

Form: The shape and siting of a building on a property.

1.1 Purpose

This discussion paper is one of seven prepared by the Consultant Team to present preliminary research and options for London's new comprehensive zoning by-law. Several discussion papers provide high-level overviews of zoning for use, intensity, form, the climate emergency, and housing affordability, contextualizing these discussions within a transect model in which *The London Plan's* 15 Place Types were collapsed into eight Transect Zones (see Figure 1).

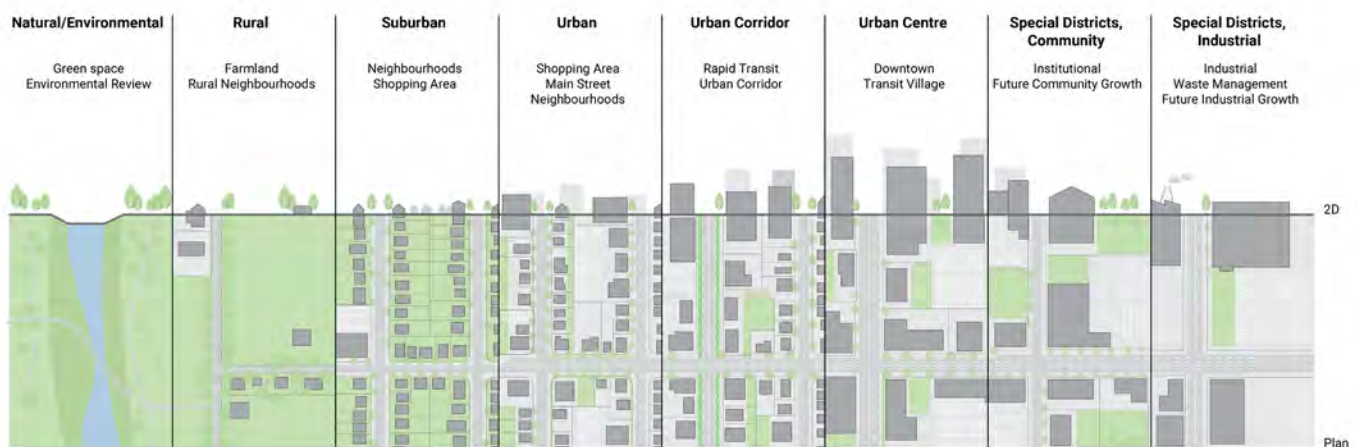


Figure 1: Transect Application to London's Place Types (Draft)

Typically, transect models represent a cross-section of a municipality, illustrating the gradual change in intensity, or building density, from natural areas on the outskirts of a city to the denser urban core, with a separate "special districts" grouping for areas that do not fit particularly well within the gradient, such as industrial areas. Beyond intensity, however, this transect concept can also serve to frame the discussion of form and use, and zoning for the climate emergency and housing affordability, based on the unique constraints associated with the development pattern that characterizes each Transect Zone. Although differences exist among the Place Types within a Transect Zone, each Zone reflects similar considerations on the relative importance of regulating use, intensity, and form as the organizing principle in achieving the specific vision of each Place Type as outlined in *The London Plan* (see Figure 2). In this way, the specific transect model outlined for the City of London in Figure 1 provides a more London-specific understanding of the zoning challenges to be considered as part of the ReThink Zoning process.

This discussion paper takes a closer look at *The London Plan* to see how policy goals vary among the 15 Place Types and the zoning opportunities and challenges associated with each.

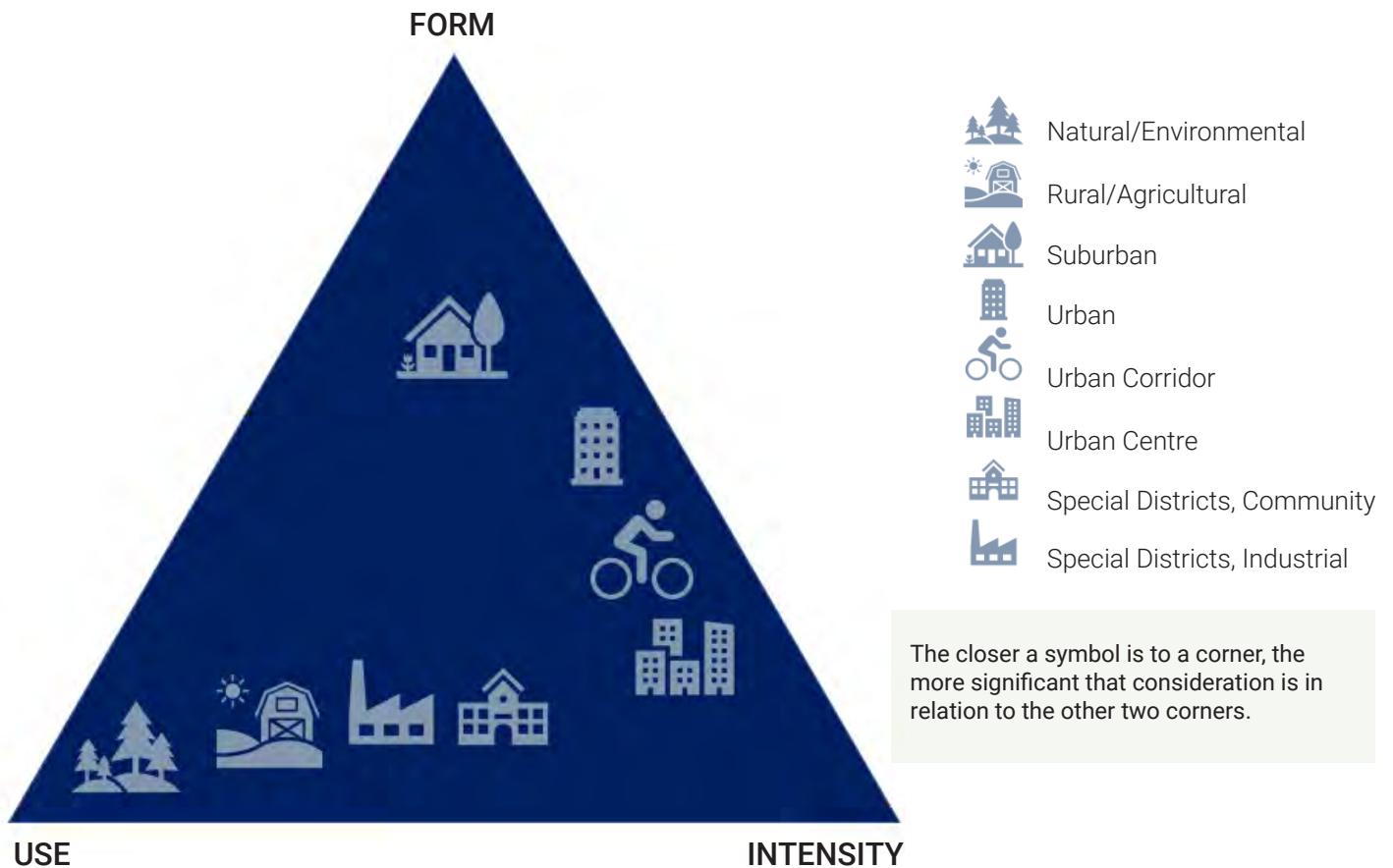


Figure 2: Relative weighting of use, intensity, and form considerations for the eight Transect Zones, based on *The London Plan's* Place Type policies.

For each Place Type, this paper identifies:

- The vision for the Place Type, as identified in *The London Plan*,
- Considerations in the development of Place Type-specific regulations; and
- Potential zone classes within the Place Type (including the criteria that may differentiate one zone class from another, as appropriate).

The final section identifies next steps in taking this information and developing the specific zone and zone class boundaries, and the associated mapping, as well as the drafting itself of the regulations of London's new zoning by-law.

1.2 Guiding Principles

This discussion paper was prepared based on a number of guiding principles:

- **Quality (over quantity) of metrics:** Zoning by-laws can be unnecessarily cumbersome. In order to simplify the interpretation and implementation of the new zoning by-law, it should seek to achieve the most benefit with the least number of regulations. In other words, only those uses (or use groups) with unique impacts should be defined and regulated, while density and form metrics should be limited to those that are most effective at defining the kind of built form we want to see.
- **Context-specific permissions:** Not all built form regulations and use permissions make sense on all sites, whether it is due to the site's size and/or orientation or its proximity to other uses or Place Types. The new zoning by-law will take these limitations (and opportunities) into account in defining the permissions on a given site and will present them in a clear and intuitive way, whether in the form of conditions on permitted uses or providing additional permissions where certain locational criteria are met.
- **Incentive zoning:** Zoning by-laws are limited by Section 34 of Ontario's *Planning Act* as to what they can regulate, specifically the use of land and the erection, location, and use of buildings or structures. As a result, there are certain elements that, although desirable from the City of London's perspective such as the provision of affordable housing units and sustainable energy systems, cannot be required in new development. Zoning by-laws, however, can provide regulatory incentives where elements such as the above are provided voluntarily, such as additional density/height permissions or relaxation of other more restrictive rules.
- **Interacting policy tools:** In addition to the 15 Place Types, *The London Plan* identifies a number of other policy tools to guide development, including Protected Major Transit Station Areas, the High-Density Residential Overlay (a holdover from the 1989 Official Plan), as well as Near-Campus Neighbourhood policies. Although some of these are limited to specific Place Types, a comprehensive regulatory system will need to encompass all of these tools beyond Place Type-specific considerations which are the focus of this paper.



2.0

**PLACE TYPES AND
IMPLICATIONS FOR
ZONING**

Each of the 15 Place Types in *The London Plan* has a specific function and, as such, has unique implications for the development of the City's new comprehensive zoning by-law. Section 2, which represents the bulk of this discussion paper, provides an overview of:

- The City's vision for each Place Type, as provided in *The London Plan*,
- Policy priorities for each Place Type and the types of regulations that would implement them, and
- Potential zone classes for each Place Type, which proposes how *The London Plan's* policies could be reflected in the City's new zoning by-law.

Each Place Type is additionally given a zone code, a one or two letter identifier that will be used to differentiate Place Types in the new zoning by-law and the sections that apply to each. These are listed in brackets next to the Place Type name. Note, although Industrial is discussed in a single subsection of this paper, in practice, it consists of three distinct Place Types, each with its own Place Type boundaries and associated use, intensity, and form policies. This distinction is reflected in their own zone codes.

More detailed summary tables of *The London Plan* policies and associated zoning considerations, taking into consideration regulations for use, intensity, form, climate emergency, and housing affordability (as appropriate to the Place Type), are provided in Appendix A.

Place Types are discussed in the same order they are presented in *The London Plan*, starting with the two City-Wide Place Types, followed by the ten Urban Place Types and the three Rural Place Types. Urban Place Types are those located within London's Urban Growth Boundary, while Rural Place Types are those located outside the Urban Growth Boundary. City-Wide Place Types exist within both Urban and Rural London.

Urban Growth Boundary: The general boundary between Urban and Rural London shown on Map 1 of *The London Plan*. Beyond this line, urban uses are not permitted.

2.1 City-Wide Place Types

2.1.1 Green Space (GS)

Vision

The City’s Green Space Place Type consists of natural heritage features and areas, natural and human-made hazards, natural resources, public parkland, and private lands relating to cemeteries, outdoor recreational centres, and golf courses (LP 760), comprising the natural heritage and recreational spine of the city (LP 757). As these areas serve important ecological and recreational functions, the Green Space Place Type is intended to protect and conserve these natural areas and direct development away from hazard lands, while offering opportunities for active and passive recreation in accessible parks throughout the city (LP 759).

Zoning Considerations

Provide access to outdoor recreational opportunities	→	Permit a range of active and passive outdoor recreation uses
Protect environmentally significant lands	→	Limit development to uses that would not diminish ecological functioning
Protect people and property from natural hazards	→	Limit development within a certain distance of flood plains

Approach to Zone Classes

The Green Space Place Type is predominantly defined in terms of use, i.e., what uses are desired (outdoor recreation uses such as hiking trails, golf courses, and outdoor sports fields) and which ones are not (most other development). As such, this Place Type could be implemented through five zone classes, differentiated by the type of activities permitted in each: Cemetery, Golf Course, Active Park, Passive Park, and Environmentally Sensitive Area. Since natural hazards typically follow the boundaries of natural features rather than individual properties, a Hazard Land overlay could apply to all Place Type zones and limit development within a certain distance of identified natural and human-made hazards, consistent with regulations set out by local conservation authorities.

Active vs. Passive Recreation: Active and passive parks differ in the kinds of activities envisioned for each. Active parks generally include sports fields or facilities for use by organized sports groups. Passive parks generally support unstructured and informal activities such as hiking, which do not require dedicated facilities.

Overlay: A regulatory tool that creates special zoning districts identifying provisions in addition to those in the underlying base zone. Overlays act as an additional 'layer' of regulation 'overtop' of base zoning provisions.



Source: The London Plan

2.2.2 Environmental Review (ER)

Vision

The City's Environmental Review Place Type consists of unevaluated vegetation patches, unevaluated wetlands, valleylands, and potential environmentally significant areas (LP 783). As not all of London's natural heritage features and areas have been fully studied to determine their ecological significance, the Environmental Review Place Type is intended to protect these areas until environmental studies have been completed, reviewed, and accepted by the City (LP 780). Environmental Review Place Type lands determined to satisfy the criteria for significance will be redesignated to the Green Space Place Type, where protection policies and regulations apply. Other Environmental Review Place Type lands will be redesignated to another appropriate Place Type (LP 782).

Zoning Considerations

Protect potentially environmentally significant lands



Limit development to uses that would not diminish ecological functioning

Approach to Zone Classes

As the purpose of the Environmental Review Place Type is to protect areas that may contain significant natural features and areas and important ecological functions until environmental studies have been completed, reviewed, and accepted by the City of London, this Place Type could be implemented through a single zone class. Uses would be restricted to those that already exist and a limited range of agricultural, conservation, and recreational uses that would not impact the ecological function of the system.

2.2 Urban Place Types

2.2.1 Downtown (D)

Vision

London's Downtown Place Type consists of a unique, geographically distinct area. This Place Type is intended to make the Downtown a destination for Londoners, residents from the wider region, and tourists (LP 793); and a unique place in the city (LP 798) with a sense of place and identity connected with its natural and cultural heritage (LP 794). *The London Plan* envisions the Downtown will be the economic hub for the region (LP 795), and an exceptional neighbourhood that provides a range of housing, services, and amenities for a wide spectrum of lifestyles (LP 796) and a well-developed and maintained public realm (LP 799_8, 11) as the city's highest-order mixed-use centre (LP 798). The City is also committed to prioritizing development that complements the existing character of the Downtown, as presented in the *Downtown Heritage Conservation District Plan*, even as it regenerates and intensifies over time (LP 803_2).

Zoning Considerations

Support a large residential and employment population



Permit taller buildings; require a minimum density for residential or non-residential uses

Ensure access to housing, employment, community services, and green space



Permit a wide range of uses, including residential, retail, office, institutional, and recreational uses in stand-alone and mixed-use buildings

Create a vibrant and inviting pedestrian experience



Require buildings to be located at a consistent distance from the front property line and oriented towards the street

Require podiums to stepback above a certain height to create a pedestrian-scaled environment

Encourage retail stores and services at street-level with permissions for weather-protecting elements such as canopies and awnings

Prohibit new surface parking lots; limit where other car-related uses are permitted and how they are designed

Ensure adequate sunlight on sidewalks and public parks	→	Require tower setbacks and stepbacks from streets and public parks; require minimum distances between towers; limit how wide towers can be
Encourage alternative modes of transportation	→	Encourage carsharing; require bicycle parking and facilities; require electric-vehicle compatible parking spaces
Encourage affordable housing	→	Support the provision of smaller units and affordable housing units through regulatory incentives

Podium: The base of a tall building. As the base of the building is what most people see and experience from street-level, there are usually different regulations for podiums and tower portions of tall buildings (where the architecture differentiates between the two).

Setback: A minimum (or maximum) distance a building can be located from something. Typically, setbacks refer to the distance a building must be from the front, side, and/or rear property lines.

Stepback: A minimum distance a portion of a building is required to step back from the edge of the building. Stepbacks are typically used to reduce the visual impact of taller buildings.

Approach to Zone Classes

Because it is a geographically limited and unique destination in the City of London, the Downtown Place Type could be implemented by a single zone class with similar use, intensity, and form regulations applicable throughout. Although *The London Plan* envisions consistent height permissions throughout the Downtown Place Type, a stepping down of height permissions from the Downtown core to the periphery may be appropriate to provide a transition from the dense urban core to surrounding, lower-density Place Types. This could be achieved either through the delineation of Core and Peripheral zone classes (based on a certain distance from the boundary of the Downtown Place Type) or through the use of a Height Overlay Map.



Source: The London Plan

2.2.2 Transit Village (TV)

Vision

The London Plan identifies four Transit Villages connected to the Downtown by Rapid Transit Corridors (LP 807). Each Transit Village Place Type is intended to become a mixed-use complete community (LP 806) developed at transit-supportive densities and in forms that are pedestrian-oriented and cycling-supportive (LP 808). Second only to the Downtown Place Type in terms of the mix of uses and intensity of development permitted (LP 807), Transit Villages will support a more compact built form and more efficient use of land through infill and development (LP 809).

Zoning Considerations

Support a large residential and (to a lesser extent) employment population	→	Permit tall buildings; require a minimum density for residential or non-residential uses
Ensure access to housing, employment, community services, and green space	→	Permit a wide range of uses, including residential, retail, office, institutional, and recreational uses in stand-alone and mixed-use buildings
Direct large-scale employment uses to the Downtown	→	Limit office density permissions
Ensure an appropriate transition to surrounding Neighbourhood areas	→	Limit buildings heights on the periphery
Create a vibrant and inviting pedestrian experience	→	Require buildings to be located at a consistent distance from the front property line and oriented towards the street
		Require podiums to stepback above a certain height to create a pedestrian-scaled environment
		Encourage retail stores and services at street-level with permissions for weather-protecting elements such as canopies and awnings
		Limit where car-related uses are permitted and how they are designed
		Locate surface parking lots away from major streets with minimum landscaping requirements as a visual barrier

Ensure adequate sunlight on sidewalks and public parks



Require tower setbacks and stepbacks from streets and public parks; require minimum distances between towers; limit how wide towers can be

Encourage alternative modes of transportation



Encourage carsharing; require bicycle parking and facilities; require electric-vehicle compatible parking spaces

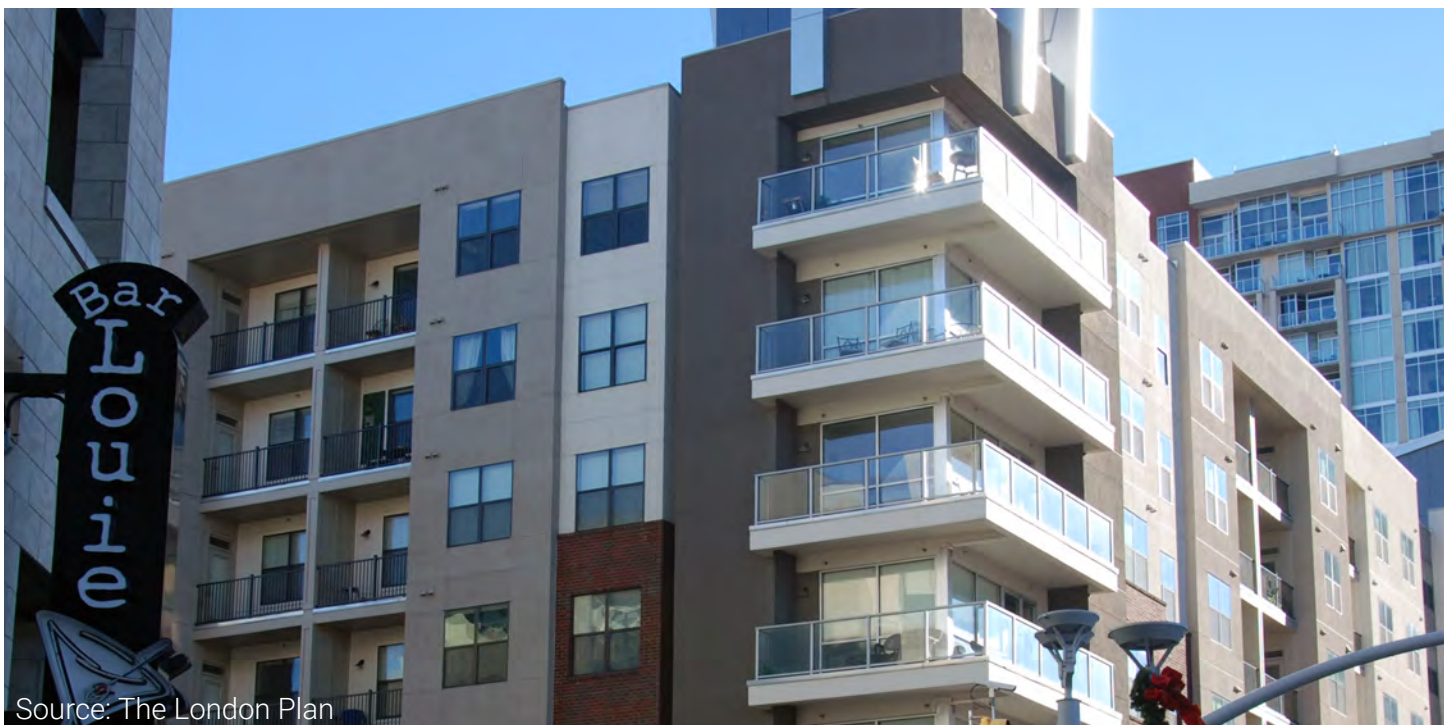
Encourage affordable housing



Support the provision of smaller units and affordable housing units through regulatory incentives

Approach to Zone Classes

The Transit Village Place Type is similar to the Downtown in terms of intended uses and form but differs in the anticipated density and the need for transitions in intensity to surrounding lower-scale Place Types. This Place Type could be implemented by a single zone class for all four Transit Villages or a series of zone classes from Core to Peripheral to reflect differences in height and built form permissions based on distance from the Place Type boundary. As they are largely in transition away from their current form, a single series of zone classes applicable to all four Transit Villages would be most appropriate rather than zone classes unique to each.



Source: The London Plan

2.2.3 Rapid Transit and Urban Corridors (RT, UC)

Vision

The London Plan identifies Rapid Transit and Urban Corridor Place Types. Rapid Transit Corridors and Urban Corridors are to become vibrant mixed-use mid-rise communities (LP 826) along major roads connecting the Downtown to Transit Village (LP 827) Place Types. Capitalizing on existing and future transit investments, these Place Types will be pedestrian- and transit-oriented, intensified at transit-supportive densities with greater intensity and height permissions immediately around rapid transit stations on Rapid Transit Corridors (LP 827).

Although Urban Corridors are envisioned for a slightly lower intensity than Rapid Transit Corridors, both Corridor Place Types have segment-specific use, intensity, and form considerations depending on the immediate context (LP 826).

Main Street segments have historically been pedestrian-oriented shopping or commercial areas, providing local shopping and commercial needs for the surrounding neighbourhoods (LP 845). New development in these areas will support intensification that is consistent with this built form and development pattern.

Preservation segments have significant heritage properties to be protected and conserved (LP 849). Development will generally take the form of repurposing of the existing building stock and some small-scale new development where appropriate.

Transitional segments have current development patterns that differ from the vision for Rapid Transit and Urban Corridor Place Types, being characterized by large-scale retail and services uses on large lots with large areas of surface parking (LP 854). As such, the priority in these areas is to allow these areas to remain as they are on a transitional basis while supporting intensification.

Zoning Considerations

Provide for residential and employment populations at transit-supportive densities



Permit mid-rise buildings with additional density permissions immediately around transit stops

Ensure access to housing, employment, community services, and green space



Permit a range of uses, including residential, retail, office, institutional, and recreational uses in stand-alone and mixed-use buildings

Direct large-scale employment uses to the Downtown



Limit office density permissions

Ensure an appropriate transition to surrounding Neighbourhood areas	→	Require minimum distances from adjacent lower-density residential areas to ensure privacy
Create a vibrant and inviting pedestrian experience	→	Require buildings to be located at a consistent distance from the front property line and oriented towards the street; encourage a continuous streetwall to help frame the street
		Require buildings to stepback above a certain height to create a pedestrian-scaled environment
		Encourage retail stores and services at street-level with permissions for weather-protecting elements such as canopies and awnings
		Limit driveway access points from the main street to create longer stretches of uninterrupted sidewalk; locate surface parking lots away from major streets with minimum landscaping requirements as a visual barrier
Encourage alternative modes of transportation	→	Encourage carsharing; require bicycle parking and facilities, and electric-vehicle compatible parking spaces
Support urban ecological functioning	→	Require minimum landscaping for tree planting or to help absorb stormwater
		Support the inclusion of low-impact development features through regulatory incentives
Encourage affordable housing	→	Support the provision of smaller units and affordable housing units through regulatory incentives

Low-impact development: Landscape features that mimic the flow of water through a natural system. Landscape features can be designed to infiltrate, filter, retain, and slow down stormwater runoff with a number of environmental and economic benefits.

Zone Classes

The Corridor Place Type could be implemented by creating at least three zone classes for Main Street, Preservation, and Transitional segments differentiating the form and intensity of new development envisioned for each. Additional zone classes could be created where there is a secondary (or other) plan that identifies a unique character and vision for a Corridor segment. Height variations between Urban Corridors, Rapid Transit Corridors, and areas within 100 metres of rapid transit stations (along Rapid Transit Corridors) could be implemented through the use of a Height Overlay Map.

2.2.4 Shopping Area (SA)

Vision

The Shopping Area Place Type consists of commercial centres of a variety of sizes and functions, ranging from those that serve the local community to large centres attracting residents from across the city (LP 872). *The London Plan* envisions that these existing commercial centres are to be reformatted to become mixed-use areas, supporting a wide range of uses within walking distance of surrounding neighbourhoods (LP 871). Commercial centres are not expected to be completely replaced, but the Shopping Area Place Type presents an opportunity for intensification through reformatting, redevelopment, and expansion (LP 875) to create pedestrian, cycling, and transit-oriented hubs for commerce and neighbourhood services (LP 872).

Zoning Considerations

- | | | |
|--|---|---|
| Provide access to housing, employment, community services, and green space | → | Permit a range of uses, including residential, retail, office, institutional, and recreational uses in stand-alone and mixed-use buildings |
| Encourage a diversity of existing and new built forms | → | Permit mid-rise buildings and low-rise building forms; encourage the conversion or repurposing of existing buildings |
| Ensure an appropriate transition to surrounding Neighbourhood areas | → | Require minimum distances between mid-rise buildings and adjacent lower-density residential areas to ensure privacy |
| Support street-oriented development | → | Require buildings to be located at a consistent distance from the front property line and oriented towards the street; encourage a continuous streetwall to help frame the street |
| | | Require buildings to stepback above a certain height to create a pedestrian-scaled environment |
| | | Encourage retail stores and services at street-level with permissions for weather-protecting elements such as canopies and awnings |
| | | Limit driveway access points from the main street to create longer stretches of uninterrupted sidewalk; limit the size and location of surface parking lots (away from major streets) |

Encourage alternative modes of transportation	→	Encourage carsharing; require bicycle parking and facilities, and electric-vehicle compatible parking spaces
Support urban ecological functioning	→	Require minimum landscaping for tree planting or to help absorb stormwater
		Support the inclusion of low-impact development features through regulatory incentives
Encourage affordable housing	→	Permit stand-alone and mixed-use residential buildings
		Support the provision of smaller units and affordable housing units through regulatory incentives

Approach to Zone Classes

The Shopping Area Place Type could be implemented by creating two or three zone classes that reflect the changing intensity and form of these places in relation to surrounding Place Types. The use, intensity, and form of each Shopping Area will depend on its size and the area it serves, as this influences the amount of intensity possible in a given area while still providing sufficient transitioning to surrounding lower-density areas. In addition, as residential uses are not currently permitted in these commercial areas under zoning by-law No. Z-1, it may be appropriate to create zones that reflect the mixed-use intent for the Shopping Area Place Type but institute a maximum density of “0” floor area ratio for residential uses. By permitting residential uses on a site but limiting the permitted residential density to 0, the intention for residential development is signalled while also requiring such development to pursue a zoning by-law amendment (ZBA) to determine in consultation with City staff what an appropriate scale of residential development might be in a particular Shopping Area.

2.2.5 Main Street (MS)

Vision

The Main Street Place Type consists of London’s historical business areas, providing a mix of residential and commercial uses to surrounding neighbourhoods (LP 903). Main Streets contribute to the identity of the city through the cultural heritage they represent (LP 904).

The intent of the Main Street Place Type is to:

- i. Support the regeneration of historic Main Streets through sensitive repurposing, intensification, and infill; and
- ii. Facilitate the creation of new Main Streets (LP 905).

The London Plan identifies seven Main Streets: Applewood, Byron, Hamilton Road, Hyde Park, Lambeth, Upper Richmond Village, and Wortley Village (LP 906_2).

Zoning Considerations

Provide access to housing and neighbourhood-scale employment, community services, and green space



Permit a range of uses, including residential, retail, office, and institutional uses in stand-alone and mixed-use buildings; limit non-residential density permissions

Allow for a diversity of existing and new built forms



Permit mid-rise buildings and low-rise building forms; support the conversion or repurposing of existing buildings

Support street-oriented development



Require buildings to be located at a consistent distance from the front property line and oriented towards the street; encourage a continuous streetwall to help frame the street

Require buildings to stepback above a certain height to create a pedestrian-scaled environment

Encourage retail stores and services at street-level with permissions for weather-protecting elements such as canopies and awnings

Limit driveway access points from the main street to create longer stretches of uninterrupted sidewalk; locate surface parking lots away from major streets

Encourage alternative modes of transportation	→	Encourage carsharing; require bicycle parking and facilities; require electric-vehicle compatible parking spaces
Support urban ecological functioning	→	Require minimum landscaping for tree planting or to help absorb stormwater
Encourage affordable housing	→	Permit stand-alone and mixed-use residential buildings Support the provision of smaller units and affordable housing units through regulatory incentives

Zone Classes

Main Street zone classes will largely vary in terms of form. The number of zone classes needed to implement the Main Street Place Type will depend on the existing character or visions for the seven Main Streets identified in *The London Plan*. Where a secondary (or other) plan does identify a unique character and vision for a Main Street, a new zone class could be created. Where a plan is not in place, a standard approach to Main Street development could be introduced to avoid unnecessary regulatory differentiations across the city of London. Reducing the regulatory complexity of the new zoning by-law will improve ease of interpretation and implementation, thereby streamlining the development application review process and reducing variances to the by-law that may result in distinct zones with similar regulations.

2.2.6 Neighbourhoods (N)

Vision

The majority of London's land area consists of Neighbourhoods (LP 917). Historically, Neighbourhoods have been limited to a single form of residential development, which has had an impact on housing affordability and access to services in the city. The intent for the Neighbourhoods Place Type is to provide for a wider range of uses, intensities, and forms to create communities that provide for a diversity of housing options (in both form and affordability) but also easy access to daily goods and services, employment and recreational opportunities, and mobility options (LP 916) while still respecting the different neighbourhood characters found throughout the city (LP 917).

The London Plan also identifies four street classifications that are typically found within the Neighbourhoods Place Type: Neighbourhood Street, Neighbourhood Connector, Civic Boulevard, and Urban Thoroughfare.

Zoning Considerations

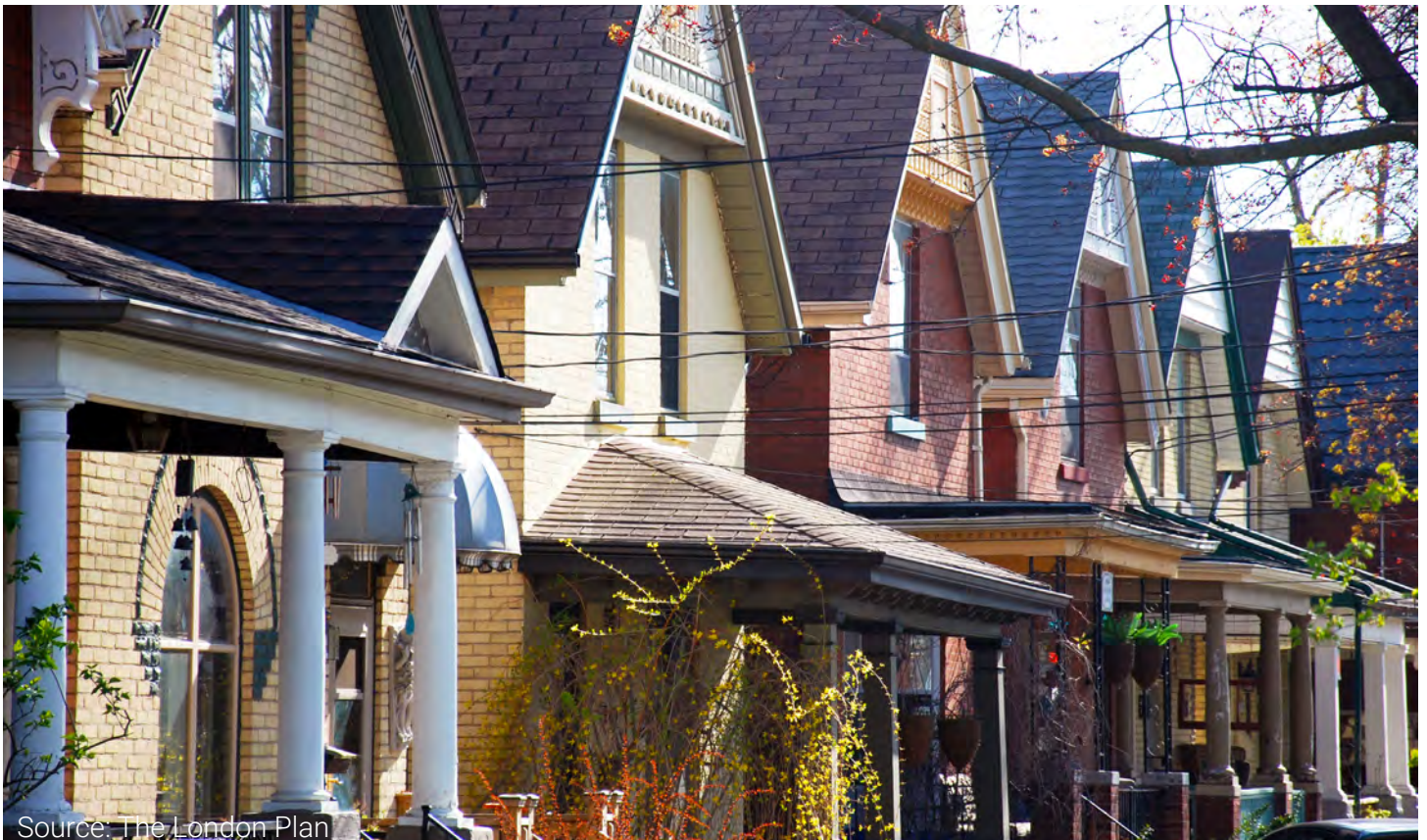
Provide a range of housing options	→	Permit a diversity of housing forms (avoid limiting areas to a single form of housing, such as single detached dwellings); permit alternative housing forms such as additional dwelling units
Provide access to everyday needs including neighbourhood-scale community services	→	Permit a range of retail, office, and institutional uses in stand-alone and mixed-use buildings on larger streets and on smaller neighbourhood streets at intersections with larger streets; limit non-residential density permissions
Maintain building porosity	→	Limit building coverage; require minimum yard setbacks
Support urban ecological functioning	→	Support the inclusion of low-impact development features through regulatory incentives
Encourage affordable housing	→	Increase residential density and height permissions Reduce minimum lot sizes where appropriate

Porosity: The amount of open space between buildings. Porosity is important in providing access to sunlight and views as well as space for tree planting.

Approach to Zone Classes

The London Plan connects use, intensify, and form permissions in the Neighbourhoods Place Type to street classification, with taller buildings, a wider range of housing forms, and small-scale non-residential uses permitted on properties fronting on larger streets. As such, zone classes could be introduced for the Neighbourhoods Place Type based on the four street classifications commonly abutting Neighbourhoods, including Neighbourhood Street, Neighbourhood Connector, Civic Boulevard, and Urban Thoroughfare.

Since *The London Plan* contemplates additional permissions at the intersection of residential streets (depending again on the street classification), locational criteria could be introduced on top of the above-mentioned zones to outline alternative use, intensity, and form permissions where certain criteria are met. Additional zone classes may be needed to reflect the unique character of individual neighbourhoods found in the City of London. What differentiates neighbourhoods from one another may be a single lot feature, such as lot frontage, or a combination of metrics, such as coverage and setbacks. The intent, however, is to identify the fewest number of metrics that distinguish one neighbourhood from another to avoid an unwieldy number of zone sub-classes that are only minutely different from one another.



Source: The London Plan

2.2.7 Institutional (I)

Vision

The Institutional Place Type consists of London’s major education facilities (Western University, its affiliated colleges, and Fanshawe College), health care centres and research institutes (St. Joseph’s Health Care, London Health Sciences Centre) and other large areas that serve an institutional purpose (LP 1078). As the nature of educational and health care institutions change over time, it is important for Institutional Place Type regulations to be flexible, anticipating and facilitating future change and evolution (LP 1084_1).

Zoning Considerations

Support a range of activities compatible with institutional uses



Permit a wide range of institutional uses and related accessory uses including dormitories and residences, residential uses, retail, services, offices, and some forms of light industrial in stand-alone and mixed-use buildings

Minimize the visual impacts of parking



Limit the location and design of surface parking lots, with minimum landscaping requirements as a visual barrier

Support urban ecological functioning



Support the inclusion of low-impact development features through regulatory incentives

Approach to Zone Classes

Given the unique nature of universities, hospitals, and other institutional uses, the Institutional Place Type could be implemented through four zone classes: Educational, Hospital, Western Fairgrounds and General Institutional, with differences in permitted uses and conditions of use. Each would involve specific challenges in terms of parking and landscaping that can be more easily addressed through distinct zone classes.

2.2.8 Industrial (IH, IL, CI)

Vision

London’s Industrial lands contribute significantly to the city’s total employment (LP 1104), consisting of opportunities for manufacturing, processing, assembly, logistics, construction, research, and other industrial uses (LP 1105). The intent is for the city’s industrial sector to grow and evolve, capitalizing on its strong regional connections and the changing nature of technology and innovation in the sector (LP 1106). Although the location and operation of industrial uses are largely governed by provincial legislation and guidelines (including the Ontario Ministry of the Environment’s D-Series Guidelines for land use planning), zoning can provide the necessary opportunities for industrial development to be controlled by provincial regulations.

The London Plan establishes three Industrial Place Types based on the type of uses permitted in each (LP 1108):

The **Heavy Industrial Place Type (IH)** is for those industries that generate significant planning impacts, such as noise, vibration, air emissions, hazardous materials, and unsightly outdoor storage, physically separated from adjacent uses to limit land use conflicts (LP 1109).

The **Light Industrial Place Type (IL)** is for industries generating minimal planning impacts (LP 1110) as well as Innovation Parks that focus on the clustering of light manufacturing, research and development, and the integration of knowledge-based functions with industrial production (LP 1111).

The **Commercial Industrial Place Type (CI)** is for commercial uses that do not fit well in commercial and mixed-use Place Types due to the planning impacts they may generate (LP 1112). These uses tend to be quasi-industrial in character, with large outdoor storage areas, impound areas with large fences, heavy equipment on-site, or large warehouse components that do not integrate well into streetscapes and neighbourhoods (LP 1118).

Zoning Considerations

Limit land use conflicts between industrial and sensitive uses



Separate industrial uses based on the magnitude of anticipated impacts on noise, vibration, and air quality

Limit sensitive uses in industrial areas

Encourage the development of innovation parks



Permit the clustering of compatible research and industrial uses

Encourage efficient use of land	→	Require minimum lot coverage
Minimize the visual impacts of parking	→	Limit the location and design of surface parking lots, with minimum landscaping requirements as a visual barrier
Support urban ecological functioning	→	Support the inclusion of low-impact development features through regulatory incentives

Approach to Zone Classes

As each Industrial Place Type is characterized by its own boundaries in Map 1 – Place Types in *The London Plan* (and so would require an official plan amendment to move between them), Heavy Industrial, Light Industrial, and Commercial Industrial will be treated as independent zone categories, differentiated by the types of uses permitted in each.

2.2.9 Future Growth (FG)

Vision

The Future Growth Place Type provides guidance for areas that have been identified for future development but lack a comprehensive plan for this build out (LP 1153). Development is not intended to occur in these areas until the necessary studies have been completed and a comprehensive plan prepared (LP 1153). There are two types of Future Growth areas depending on the anticipated future use: Industrial and Community Growth (LP 1155-1158).

Zoning Considerations

Protect undeveloped lands from premature subdivision prior to the preparation of a comprehensive plan



Limit permissions to existing uses

Approach to Zone Classes

The Future Growth Place Type could be implemented through a single zone with a limited list of permitted uses.



2.3 Rural Place Types

2.3.1 Farmland (F)

Vision

The *Provincial Policy Statement* requires prime agricultural areas to be protected for long-term agricultural use and for planning authorities to designate these areas. The Farmland Place Type represents the prime agricultural area of London (LP 1179) and has historically been and will continue to be an area of intense production and vibrant economic activity, consisting of agricultural fields and operations of all types, sizes, and intensities and supported by compatible agricultural-related uses and on-farm diversified uses (LP 1178). As a key component of the city's economic base and cultural heritage, the Farmland Place Type will protect and maintain London's prime agricultural area to produce food, fuel, and fibre now and into the future (LP 1181_2). Nothing in *The London Plan* is intended or may be applied to restrict a normal farm practice carried on as part of an agricultural operation (LP 1184), but London's productive lands need not be in conflict with the Natural Heritage System (LP 1181_5), with sustainable farm practices encouraged (LP 1180).

Zoning Considerations

Protect the City's prime agricultural areas for long-term agricultural use



Differentiate between agricultural uses, secondary farm occupations (associated with a primary farm operation), and agricultural-related commercial and industrial uses

Require zoning by-law amendments for new secondary farm occupations, agricultural-related commercial and industrial uses, and new residential dwellings

Prohibit new residential dwellings on remnant pieces of farmland created through lot division

Minimize potential land use conflicts between residential uses, farm operations, and agriculture-related commercial and industrial uses



Require minimum separation distances between uses (based on provincial guidelines)

Limit the scale of operations

Require minimum setbacks and landscaping to act as physical buffers

Promote sustainable farm practices



Permit renewable energy systems with conditions

Approach to Zone Classes

The Farmland Place Type could be implemented through two zone classes differentiated based on the types of use permitted in each: Agriculture and Agriculture-Related. An additional zone class may be required to implement the prohibition of dwellings on remnant parcels of farmland created by a severance.



Source: The London Plan

2.3.2 Rural Neighbourhoods (RN)

Vision

The Rural Neighbourhoods Place Type consists of residential settlements located outside the Urban Growth Boundary (LP 1241) and existing centres of non-agricultural activity (LP 1239). The intent is for this Place Type is to remain largely unchanged, with development limited to residential and small-scale commercial, industrial, and institutional infill opportunities that can be supported by on-site wastewater treatment systems and private wells (LP 1240).

Zoning Considerations

Maintain the extent and density of existing rural neighbourhoods



Limit development to small-scale infill that can be accommodated through on-site servicing

Limit the impact of livestock facilities on residential uses



Require minimum separation distances

Approach to Zone Classes

The Rural Neighbourhoods Place Type could be implemented through a single zone class. However, additional classes could be introduced where the existing conditions reflect unique neighbourhood characters across the City of London that should be preserved.



Source: The London Plan

2.3.3 Waste Management Resource Recovery Area (WM)

Vision

The Waste Management Resource Recovery Area Place Type provides for the existing and potential expansion of the W12A Landfill as an important component of London's infrastructure and waste management system (LP 1255). Regulated by a variety of legislation, *The London Plan* states that landfills will be designed to have minimal impact on sensitive uses, with special considerations for the transition of existing landfills out of productive use (LP 1256_2).

Zoning Considerations

Limit the impacts of existing (and potential expansions of) landfills on surrounding sensitive uses



Require a zoning by-law amendment to permit resource recovery and eco-industrial park uses

Require minimum separation distances from adjacent lands

Limit residential development within 1,500 m

Approach to Zone Classes

As the Waste Management Resource Recovery Area Place Type is limited to a single, geographically limited landfill operation, only one zone class will be required to implement *The London Plan* policies. However, consideration will need to be made on the impact of W12A Landfill on the feasibility and desirability of residential development in surrounding Place Types located within a radius of 1,500 metres of the Waste Management Resource Recover Area Place Type.



Source: The London Plan

3.0 **NEXT STEPS**

Each of London's 15 Place Types has a unique character, structure, and function that needs to be reflected in the mapping and regulation components of the City's new comprehensive zoning by-law. Although *The London Plan* emphasizes the balancing of use, intensity, and form, Section 2 highlights how some Place Types may be more significantly defined by one or two of these considerations (see Figure 2), influencing the zoning tools to be used both in and across Place Types.

As *The London Plan* policies only apply to new development (and existing uses are permitted to persist), the Consultant Team will continue to work with City of London staff to identify the best regulatory strategy to facilitate the transition from current conditions to the kinds of Places envisioned in the Plan.

This discussion paper outlines policy directions, associated zoning considerations, and potential classes of zones for each of *The London Plan's* 15 Place Types. The specific implementation of the policies and zoning considerations identified here will be informed by the next phase of the ReThink Zoning project where we will examine:

1. existing conditions on the ground,
2. current zoning regulations that apply to these areas, and
3. recent development applications

to understand the limitations of the existing regulatory framework and to identify opportunities and constraints where current conditions do not meet the intent of *The London Plan*.

Insights that result from these investigations will be used to develop first a draft by-law outline and preliminary mapping before moving on to the regulations themselves. The draft by-law outline, preliminary zone mapping, and draft regulations will all be the subject of future public and stakeholder engagement as we work through a first, second, and final draft of the City of London's new comprehensive zoning by-law.

APPENDIX

Appendix. Planning Priorities and Zoning Considerations by Place Type

The following tables summarize the planning priorities presented in *The London Plan* policies for each of the 15 Place Types and the key considerations of each for the new comprehensive zoning by-law.

Table 1: Planning Priorities and Zoning Consideration, Green Space (GS)

Green Space (GS)		
	Planning Priorities	Zoning Considerations
Use	Protect natural heritage and provide opportunities for outdoor recreation (LP 761)	<ul style="list-style-type: none"> Limit permitted uses to existing uses, limited recreational uses, parks, and conservation works
	Reduce negative impacts of hazard lands (LP 761)	<ul style="list-style-type: none"> Limit development within an appropriate distance from hazard lands

Table 2: Planning Priorities and Zoning Consideration, Environmental Review (ER)

Environmental Review (ER)		
	Planning Priorities	Zoning Considerations
Use	Protect areas that may contain significant natural heritage features from activities that would diminish their functions (LP 780)	<ul style="list-style-type: none"> Limit permitted uses to existing uses and uses such as certain forms of agriculture, woodlot management, horticulture, conservation, and recreational uses with conditions

Table 3: Planning Priorities and Zoning Consideration, Downtown (D)

Downtown (D)		
	Planning Priorities	Zoning Considerations
Use	Provide for a broad range of uses (LP 800_1)	<ul style="list-style-type: none"> Permit a wide range of residential, retail, service, office, cultural, institutional, hospitality, entertainment, and recreational uses
	Encourage mixed-use buildings with active uses at-grade (LP 800_2, 3)	<ul style="list-style-type: none"> Permit mixed-use buildings Greater density permissions for mixed-use buildings compared to purely residential or non-residential buildings Limit the location of non-residential uses to below residential uses in mixed-use buildings Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade

	Limit auto-centric uses (LP 800_4, 801)	<ul style="list-style-type: none"> Do not permit new surface accessory parking lots, surface commercial parking lots Permit new drive-through facilities with conditions
Intensity	High-density (LP 802_2, 3)	<ul style="list-style-type: none"> Minimum height in metres Maximum height in metres Minimum units per hectare for residential uses Minimum floor area ratio for non-residential uses
	Direct large-scale office development toward the Downtown (LP 799_14)	<ul style="list-style-type: none"> No density restrictions on office uses
Form	Mitigate the impacts of tall buildings (LP 802_2)	<ul style="list-style-type: none"> Tower setbacks from residential property lines Tower setbacks from the street and parks Tower separation distances Maximum tower floor plate Height exemptions, regulations for rooftop mechanical equipment
	Prioritize pedestrian experience (LP 803_3)	<ul style="list-style-type: none"> Maximum podium heights in relation to right-of-way width Stepback above a defined streetwall height Build-to lines Setback and height exemptions for awnings, canopies Primary entrances to be oriented toward the street Minimum solid to void ratios for facades within a certain distance from the street Minimum glazing requirements on ground floors facing the street within a certain distance of the street
Parking	Reduce oversupply of parking (LP 271, LP 802_4)	<ul style="list-style-type: none"> Eliminate parking requirements
	Minimize visual impact of parking (LP 269)	<ul style="list-style-type: none"> Permit underground and integrated parking Minimum wrapping of integrated parking with active uses at-grade Limit the location and size of pick-up/drop-off areas and vehicular access points Limit size of garage door openings Setbacks for garage door openings so that they are located behind the building face
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Regulatory incentives for voluntary provision of a low-impact development features Minimum percentage shade cover for surface parking lots
	Encourage alternative modes of transportation	<ul style="list-style-type: none"> Permit shared car and bicycle parking facilities Minimum bicycle parking and facility requirements Minimum requirements for the provision of electric vehicle compatible parking spaces
	Support sustainable energy and food systems	<ul style="list-style-type: none"> Permit renewable energy systems with conditions Permit urban agriculture with conditions

Housing Affordability	Provide housing opportunities to a wide spectrum of lifestyles (including families, seniors, and young adults) (LP 796)	<ul style="list-style-type: none"> • Minimum residential density requirements • Regulatory incentives for voluntary provision of affordable housing units or units below a threshold unit size
------------------------------	---	--

Table 4: Planning Priorities and Zoning Consideration, Transit Village (TV)

Transit Village (TV)		
	Planning Priorities	Zoning Considerations
Use	Broad range of uses (LP 811_1)	<ul style="list-style-type: none"> • Permit a wide range of residential, retail, service, office, cultural, institutional, hospitality, entertainment, and recreational uses
	Encourage mixed-use buildings (LP 811_2)	<ul style="list-style-type: none"> • Permit mixed-use buildings • Greater density permissions for mixed-use buildings compared to purely residential or non-residential buildings • Limit the location of non-residential uses to below residential uses in mixed-use buildings • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade
	Limit auto-centric uses (LP 812)	<ul style="list-style-type: none"> • Permit new drive-through facilities with conditions
Intensity	High-density (LP 810, 813_1, 2, 815C, 815D)	<ul style="list-style-type: none"> • Permit new drive-through facilities with conditions
	Transition between transit stations and surrounding areas (LP810_3, 813_3)	<ul style="list-style-type: none"> • Setback from property lines abutting different zones
	Limit large-scale office development (LP 813_5)	<ul style="list-style-type: none"> • Maximum office gross floor area per building • Maximum office gross floor area per Transit Village
Form	Mitigate the impacts of tall buildings (LP 813_1)	<ul style="list-style-type: none"> • Tower setbacks from residential property lines • Tower setbacks from the street and parks • Stepback above a defined streetwall height • Tower separation distances • Maximum tower floor plate • Height exemptions, regulations for rooftop mechanical equipment
	Prioritize pedestrian experience (LP 814_3, 7)	<ul style="list-style-type: none"> • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade • Build-to lines • Primary entrances to be oriented toward the street • Minimum solid to void ratios for facades within a certain distance from the street • Minimum glazing requirements on ground floors facing the street within a certain distance of the street

Parking	Minimize visual impact of parking (LP 269, 814_11)	<ul style="list-style-type: none"> • Permit underground and integrated parking • Minimum wrapping of integrated parking with active uses at-grade • Prohibit surface parking lots in front of buildings • Parking lots to account for a maximum percentage of front and exterior lot lines • Limit the location and size of pick-up/drop-off areas and vehicular access points • Limit size of garage door openings • Setbacks for garage door openings so that they are located behind the building face • Minimum landscaping requirements between surface parking lots and streets
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> • Regulatory incentives for voluntary provision of a low-impact development features • Minimum percentage shade cover for surface parking lots
	Encourage alternative modes of transportation	<ul style="list-style-type: none"> • Permit shared car and bicycle parking facilities • Minimum bicycle parking and facility requirements • Minimum requirements for the provision of electric vehicle compatible parking spaces
	Support sustainable energy and food systems	<ul style="list-style-type: none"> • Permit renewable energy systems with conditions • Permit urban agriculture with conditions
Housing Affordability	Increase opportunities for residential development	<ul style="list-style-type: none"> • Minimum residential density requirements • Permit stand-alone and mixed-use residential buildings
	Reduce costs of housing development	<ul style="list-style-type: none"> • Eliminate parking requirements • Regulatory incentives for voluntary provision of affordable housing units or units below a threshold unit size

Table 5: Planning Priorities and Zoning Consideration, Rapid Transit and Urban Corridors (RT, UC)

Rapid Transit and Urban Corridors (RT, UC)		
	Planning Priorities	Zoning Considerations
Use	Mix of uses (LP 830_4, 837)	<ul style="list-style-type: none"> • Permit a wide range of residential, retail, service, office, cultural, institutional, and recreational uses
	Encourage mixed-use buildings (LP 837_2)	<ul style="list-style-type: none"> • Permit mixed-use buildings • Greater density permissions for mixed-use buildings compared to purely residential or non-residential buildings • Limit the location of non-residential uses to below residential uses in mixed-use buildings • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade
	Limit auto-centric uses (LP 812)	<ul style="list-style-type: none"> • Permit new drive-through facilities with conditions

Intensity	Medium density (LP 839)	<ul style="list-style-type: none"> • Minimum height in metres • Maximum height in metres
	Limit large floor plate, single use buildings (LP 837_3, LP 840_2)	<ul style="list-style-type: none"> • Maximum commercial gross floor area • Maximum office gross floor area per building • Maximum office gross floor area within 100 m of a rapid transit station
Form	Mid-rise (LP 839)	<ul style="list-style-type: none"> • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade • Build-to lines • Stepback above a defined streetwall height • Primary entrances to be oriented toward the street • Side lot setbacks and facing distances • Front yard landscape buffer or change in grade requirements where residential uses are permitted at-grade to ensure privacy • Minimum solid to void ratios for facades within a certain distance from the street • Minimum glazing requirements on ground floors facing the street within a certain distance of the street
	Manage interface with adjacent, lower-intensity residential areas (LP 830_5, LP 832, LP 840)	<ul style="list-style-type: none"> • Setback from property lines abutting different zones
Parking	Minimize visual impact of parking (LP 841_12)	<ul style="list-style-type: none"> • Minimum wrapping of integrated parking with active uses • Prohibit surface parking lots in front of buildings • Parking lots to account for a maximum percentage of front and exterior lot lines • Minimum landscaping requirements between surface parking lots and streets • Maximum driveway dimensions (percentage of front lot line) • Limit the location and size of pick-up/drop-off areas
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> • Maximum percentage of hardscaping • Minimum areas and soil volumes for softscaping • Minimum percentage shade cover for surface parking lots • Regulatory incentives for voluntary provision of a low-impact development features
	Encourage alternative modes of transportation	<ul style="list-style-type: none"> • Permit shared car and bicycle parking facilities • Minimum bicycle parking and facility requirements • Minimum requirements for the provision of electric vehicle compatible parking spaces
	Support sustainable energy and food systems	<ul style="list-style-type: none"> • Permit renewable energy systems with conditions • Permit urban agriculture with conditions
Housing Affordability	Increase opportunities for housing development	<ul style="list-style-type: none"> • Minimum residential density requirements • Permit stand-alone and mixed-use residential buildings

	Reduce costs of housing development	<ul style="list-style-type: none"> • Eliminate parking requirements • Regulatory incentives for voluntary provision of affordable housing units or units below a threshold unit size
--	-------------------------------------	--

Table 6: Planning Priorities and Zoning Consideration, Shopping Area (SA)

Shopping Area (SA)		
	Planning Priorities	Zoning Considerations
<i>Use</i>	Broad range of uses (LP 877_1)	<ul style="list-style-type: none"> • Permit a range of retail, service, office, entertainment, recreational, educational, institutional, and residential uses
	Encourage mixed-use buildings (LP 877_1)	<ul style="list-style-type: none"> • Permit mixed-use buildings • Greater density permissions for mixed-use buildings compared to purely residential or non-residential buildings • Limit the location of non-residential uses to below residential uses in mixed-use buildings • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade
	Residential-compatible uses (LP 877_3)	<ul style="list-style-type: none"> • Do not permit uses with larges amounts of outdoor storage, large warehouse components, storage of heavy vehicles, and/or emitting noise, vibration, or dust
	Encourage repurposing and reformatting of existing centres (LP 876_4)	<ul style="list-style-type: none"> • Regulatory incentives for the repurpose or reformat of existing structures
	Limit auto-centric uses (LP 879_6)	<ul style="list-style-type: none"> • Permit car washes, service stations, gas bars with conditions
<i>Intensity</i>	Medium density (LP 878_2)	<ul style="list-style-type: none"> • Minimum lot size • Maximum height in metres
	Sensitive to adjacent land uses (LP 878_4)	<ul style="list-style-type: none"> • Setback from property lines abutting different zones
	Limit large-scale office uses (LP 878_6)	<ul style="list-style-type: none"> • Maximum office gross floor area
<i>Form</i>	Mid-rise (LP 878_2)	<ul style="list-style-type: none"> • Primary entrances to be oriented toward the street • Stepback above a defined streetwall height • Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade • Build-to lines • Front yard landscape buffer or change in grade requirements where residential uses are permitted at-grade to ensure privacy • Side lot setbacks and facing distances • Minimum solid to void ratios for facades within a certain distance from the street • Minimum glazing requirements on ground floors facing the street within a certain distance of the street

	Positive interface between commercial and residential uses (LP 877_4)	<ul style="list-style-type: none"> Setback from property lines abutting different zones
	Street-oriented development (LP 879_3)	<ul style="list-style-type: none"> Limit the location of primary entrances Maximum front and exterior side yard setbacks Buildings to cover a minimum percentage of front and exterior lot lines
Parking	Minimize visual impact of parking (LP 841_12)	<ul style="list-style-type: none"> Minimum wrapping of integrated parking with active uses Prohibit surface parking lots between buildings Parking lots to account for a maximum percentage of front and exterior lot lines Surface parking lots to account for a maximum percentage of lot area Minimum landscaping requirements between surface parking lots and streets
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Maximum percentage of hardscaping Minimum areas and soil volumes for softscaping Minimum percentage shade cover for surface parking lots Regulatory incentives for voluntary provision of a low-impact development features
	Encourage alternative modes of transportation	<ul style="list-style-type: none"> Permit shared car and bicycle parking facilities Minimum bicycle parking and facility requirements Minimum requirements for the provision of electric vehicle compatible parking spaces
	Support sustainable energy and food systems	<ul style="list-style-type: none"> Permit renewable energy systems with conditions Permit urban agriculture with conditions
Housing Affordability	Increase opportunities for housing development	<ul style="list-style-type: none"> Permit residential and mixed-use residential buildings Minimum residential density requirements
	Reduce costs of housing development	<ul style="list-style-type: none"> Eliminate parking requirements Regulatory incentives for voluntary provision of affordable housing units or units below a threshold unit size

Table 7: Planning Priorities and Zoning Consideration, Main Street (MS)

Main Street (MS)		
	Planning Priorities	Zoning Considerations
Use	Broad range of uses (LP 908_1)	<ul style="list-style-type: none"> Permit a range of residential, retail, service, office, and institutional uses
	Encourage mixed-use buildings (LP 908_2)	<ul style="list-style-type: none"> Permit mixed-use buildings Greater density permissions for mixed-use buildings compared to purely residential or non-residential buildings Limit the location of non-residential uses to below residential uses in mixed-use buildings Minimum ground floor height to support conversion of residential uses to future commercial uses at-grade

	Sensitive repurposing of existing buildings (LP 905)	<ul style="list-style-type: none"> Permit converted buildings Regulatory incentives for the repurpose or reformat of existing structures
	Limit auto-centric uses (LP 909)	<ul style="list-style-type: none"> Permit new drive-through facilities with conditions
Intensity	Low-density (LP 910_4)	<ul style="list-style-type: none"> Minimum height in metres Maximum height in metres
	Limit large-scale commercial and office uses (LP 910_3, 5)	<ul style="list-style-type: none"> Maximum commercial gross floor area Maximum office gross floor area
Form	Mid-rise (LP 910_4)	<ul style="list-style-type: none"> Setback from property lines abutting different zones Primary entrances to be oriented toward the street Build-to lines Stepback above a defined streetwall height Front yard landscape buffer or change in grade requirements where residential uses are permitted at-grade to ensure privacy Minimum solid to void ratios for facades within a certain distance from the street Minimum glazing requirements on ground floors facing the street within a certain distance of the street
Parking	Minimize visual impact of parking (LP 911_9)	<ul style="list-style-type: none"> Prohibit surface parking lots between buildings Parking lots to account for a maximum percentage of front and exterior lot lines Surface parking lots to account for a maximum percentage of lot area Minimum landscaping requirements between surface parking lots and streets Limit the location and size of pick-up/drop-off areas and vehicular access points
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Maximum percentage of hardscaping Minimum areas and soil volumes for softscaping Regulatory incentives for voluntary provision of a low-impact development features
	Encourage alternative modes of transportation	<ul style="list-style-type: none"> Permit shared car and bicycle parking facilities Minimum bicycle parking and facility requirements Minimum requirements for the provision of electric vehicle compatible parking spaces
	Support sustainable energy and food systems	<ul style="list-style-type: none"> Permit renewable energy systems with conditions Permit urban agriculture with conditions
Housing Affordability	Increase opportunities for housing development	<ul style="list-style-type: none"> Minimum residential density requirements Permit stand-alone and mixed-use residential buildings
	Reduce costs of housing development	<ul style="list-style-type: none"> Eliminate parking requirements Regulatory incentives for voluntary provision of affordable housing units or units below a threshold unit size

Table 8: Planning Priorities and Zoning Consideration, Neighbourhoods (N)

Neighbourhoods (N)		
	Planning Priorities	Zoning Considerations
Use	Range of uses with appropriately sized non-residential uses on the ground floor (LP 925, 927, 928)	<ul style="list-style-type: none"> Permit a range of residential, retail, service, office, community facilities, and residential mixed-use uses based on street classification Permit bed and breakfasts, group homes, supervised correctional residences, home occupations, and drive-through facilities with conditions
	Residential intensification (LP 939_1, 2)	<ul style="list-style-type: none"> Permit additional residential units, converted dwellings, live-work with conditions
	Adaptive re-use of non-residential buildings (LP 939_3)	<ul style="list-style-type: none"> Regulatory incentives for the repurpose or reformat of existing structures
Intensity	Intensification that respects existing neighbourhood character (LP 918_13)	<ul style="list-style-type: none"> Maximum height in metres (to be measured from the eave line) Maximum first floor elevation heights, floor-to-floor heights Stepbacks for half-storeys, with a limit on floorplate size to a percentage of the floor below Maximum coverage
Form	Low-rise (LP 935)	<ul style="list-style-type: none"> Entrances to be oriented toward the street Minimum front yard, side yard, and/or rear yard setbacks Minimum glazing requirement on ground floor facing the street
Parking	Reduce oversupply of parking	<ul style="list-style-type: none"> Limit on-site parking requirements
	Minimize visual impact of parking	<ul style="list-style-type: none"> Setback for garage from front façade Maximum percentage of façade width taken up by a garage Limit driveway locations and access
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Maximum percentage of hardscaping Minimum areas and soil volumes for softscaping Regulatory incentives for voluntary provision of a low-impact development features
	Support sustainable energy and food systems	<ul style="list-style-type: none"> Permit renewable energy systems with conditions Permit urban agriculture with conditions
Housing Affordability	Provide for a range of housing options	<ul style="list-style-type: none"> Permit alternative housing forms
	Increase opportunities for housing development	<ul style="list-style-type: none"> Permit residential mixed-use buildings Increase residential density permissions Reduce minimum lot sizes
	Reduce costs of housing development	<ul style="list-style-type: none"> Reduce parking requirements Regulatory incentives for building conversions and the voluntary provision of affordable housing units or units below a threshold unit size

Table 9: Planning Priorities and Zoning Consideration, Institutional (I)

Institutional (I)		
	Planning Priorities	Zoning Considerations
Use	Wide range of uses to allow for evolution over time (LP 1084_1)	<ul style="list-style-type: none"> Permit a range of institutional uses, limited amount of retail space, and mixed-use buildings Permit a wide range of accessory uses, including dormitories and residences, residential uses, offices, laboratories, services, and, where appropriate, and light industrial uses
Intensity	Medium density (LP 1086_1)	<ul style="list-style-type: none"> Minimum height in metres Maximum height in metres Maximum commercial gross floor area Maximum office gross floor area
Form	Mid-rise (LP 1086_1)	<ul style="list-style-type: none"> Primary entrances to be oriented toward the street Build-to lines Side lot setbacks and facing distances Minimum solid to void ratios for facades within a certain distance from the street Minimum glazing requirements on ground floors facing the street within a certain distance of the street
Parking	Reduce oversupply of parking	<ul style="list-style-type: none"> Limit on-site parking requirements
	Minimize visual impact of parking	<ul style="list-style-type: none"> Prohibit parking lots between buildings Parking lots to account for a maximum percentage of front and exterior lot lines Surface parking lots to account for a maximum percentage of lot area Minimum landscaping requirements between surface parking lots and streets
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Maximum percentage of hardscaping Minimum soil volumes for softscaping Regulatory incentives for voluntary provision of a low-impact development features
	Support sustainable energy and food systems	<ul style="list-style-type: none"> Permit renewable energy systems with conditions Permit urban agriculture with conditions
Housing Affordability	Increase opportunities for housing development	<ul style="list-style-type: none"> Permit residential uses in stand-alone and mixed-use buildings
	Reduce costs of housing development	<ul style="list-style-type: none"> Reduce parking requirements Regulatory incentives for the voluntary provision of affordable housing units or units below a threshold unit size

Table 10: Planning Priorities and Zoning Consideration, Industrial (IH, IL, CI)

Industrial (IH, IL, CI)		
	Planning Priorities	Zoning Considerations
<i>Use</i>	Separate uses based on planning impacts (LP 1109-1111)	<ul style="list-style-type: none"> Identify permitted uses in Heavy, Light, and Commercial Industrial Place Types based on Ontario's D-series Guidelines Limit the range and number of sensitive uses permitted
	Support the development of Innovation Parks (LP 1111)	<ul style="list-style-type: none"> Define Innovation Park Permit the clustering of certain uses
<i>Intensity</i>	Low-rise (LP 1124_3)	<ul style="list-style-type: none"> Minimum lot size Maximum height in storeys (in the Commercial Industrial Place Type)
	Support office uses without undermining the Downtown office market (LP 1113_13)	<ul style="list-style-type: none"> Maximum office gross floor area Maximum office gross floor area within Innovation Parks
	Efficient use of land (LP 1124_1)	<ul style="list-style-type: none"> Minimum lot coverage
<i>Form</i>	High quality of design along Highway 401/402 and the Veterans Memorial Parkway (LP 1125_2, 4)	<ul style="list-style-type: none"> Minimum landscaping requirements along highways
	Limit the visual impact of industrial uses (LP 1125_5)	<ul style="list-style-type: none"> Screening requirements for large open storage areas Limit the location, size, and access of loading facilities Maximum front and exterior side yards for office uses
<i>Parking</i>	Reduce oversupply of parking	<ul style="list-style-type: none"> Limit on-site parking requirements
	Minimize visual impact of parking	<ul style="list-style-type: none"> Parking lots to account for a maximum percentage of front and exterior lot lines Surface parking lots to account for a maximum percentage of lot area Minimum landscaping requirements between surface parking lots and streets
<i>Climate Emergency</i>	Support green industrial development (LP 1126)	<ul style="list-style-type: none"> Regulatory incentives for voluntary provision of a low-impact development features

Table 11: Planning Priorities and Zoning Consideration, Future Growth (FG)

Future Growth (FG)		
	Planning Priorities	Zoning Considerations
<i>Use</i>	Limit permitted uses (LP 1163)	<ul style="list-style-type: none"> Limit permitted uses to existing and similar uses

Table 12: Planning Priorities and Zoning Consideration, Farmland (F)

Farmland (F)		
	Planning Priorities	Zoning Considerations
<i>Use</i>	Protect and maintain the City's prime agricultural areas for agriculture (LP 1179)	<ul style="list-style-type: none"> Define agricultural use, secondary farm occupation/on-farm diversified uses, farm unit, and agricultural-related commercial and industrial uses Permit agricultural uses including associated on-farm buildings and structures Require zoning by-law amendments to consider new secondary farm occupations and agricultural-related commercial and industrial uses
	Discourage the creation of non-farm residential lots in the agricultural area (LP 1180)	<ul style="list-style-type: none"> Require zoning bylaw amendments to consider new residential dwellings on existing lots with conditions (cannot be located on a remnant parcel of farmland created by severance)
<i>Intensity</i>	Minimize the potential for land use conflicts between residential uses and farm operations (LP 1181_10) and between farm operations and agricultural-related commercial and industrial uses (LP 1205_3)	<ul style="list-style-type: none"> Require compliance with Minimum Distance Separation formulae Maximum (combined) lot coverage Maximum (combined) gross floor area Minimum front, side, year setbacks Minimum landscaping and/or screening requirements
	Support a pattern of agricultural holdings that increases the viability of farm operations and avoids the fragmentation of land ownership (LP 1181_8)	<ul style="list-style-type: none"> Minimum farm parcel size of 40 ha Minimum lot frontage
<i>Form</i>	Street-oriented development (LP 1216_2)	<ul style="list-style-type: none"> Orientation of development in relation to the street Limit location and design of vehicular access
<i>Climate Emergency</i>	Promote sustainable farm practices (LP 1180, LP 1181_3)	<ul style="list-style-type: none"> Include hedgerows and woodlands in the definition of farm unit Permit renewable energy systems with conditions Regulatory incentives for voluntary provision of a low-impact development features

Table 13: Planning Priorities and Zoning Consideration, Rural Neighbourhoods (RN)

Rural Neighbourhoods (RN)		
	Planning Priorities	Zoning Considerations
<i>Use</i>	Limit infill to uses that can be accommodated on individual on-site services (LP 1242, LP 1243)	<ul style="list-style-type: none"> Permit a narrow range of residential, institutional, recreational, commercial, and industrial uses with conditions

Intensity	Limit infill to small-scale development intended to meet local needs (LP 1248_2)	<ul style="list-style-type: none"> Maximum gross floor area
	Minimize the potential for land use conflicts between residential uses and livestock facilities (LP 1241_4)	<ul style="list-style-type: none"> Limit size and location of outdoor storage Setbacks from residential properties Minimum separation distance and landscaping buffer requirements between incompatible uses
Form	Encourage street-oriented development (LP 1250_1)	<ul style="list-style-type: none"> Primary entrances oriented to the street
Climate Emergency	Protect and enhance natural systems and processes	<ul style="list-style-type: none"> Maximum percentage of hardscaping Permit renewable energy systems with conditions Regulatory incentives for voluntary provision of a low-impact development features
Housing Affordability	Provide a diversity of housing options	<ul style="list-style-type: none"> Permit additional units with conditions

Table 14: Planning Priorities and Zoning Consideration, Waste Management Resource Recovery Area (WM)

Waste Management Resource Recovery Area (WM)		
	Planning Priorities	Zoning Considerations
Use	Support existing, and potential expansion of landfills (LP 1258)	<ul style="list-style-type: none"> Permit landfills and related uses as well as Eco-Industrial Parks with conditions
	Ensure minimal impacts on sensitive uses (LP 1255)	<ul style="list-style-type: none"> Require zoning by-law amendments to permit more impactful uses Do not permit farm dwellings, secondary farm dwellings, and other sensitive uses
Form	Limit impacts on surrounding uses (LP 1264)	<ul style="list-style-type: none"> Setback and landscaping buffer requirements from property lines Limit the number and location of vehicular access points



RETHINK ZONING

DISCUSSION PAPERS

7

IMPLEMENTING THE NEW ZONING BY-LAW

JUNE 2022

Sajecki→
Planning

**R.E. MILLWARD +
ASSOCIATES LTD**
planning and development services

FUSL
FORUM URBAIN STRATEGIQUE

POSAD MAXWAN
strategy x design

Scribe
TECHNICAL, WRITERS & EDITORS



Land Acknowledgment

The City of London is situated on the traditional lands of the Anishinaabek (AUh-nish-in-ah-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ah-pay-wuk) and Attawandaron (Add-a-won-da-run).

We acknowledge all the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbours to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. It is the work of all citizens to take steps towards decolonizing practices and bringing our awareness into action. We encourage everyone to be informed about the traditional lands, Treaties, history, and cultures of the Indigenous people local to their region.





Source: The London Plan

Executive Summary

This paper introduces how the City of London's new, comprehensive zoning by-law can be developed and implemented as an innovative tool that improves the administration, presentation, ease of interpretation, and accessibility of land use regulations.

The London Plan (2016) introduced a place-based approach to planning; a new way of designating land that replaces traditional land use designations. The new zoning by-law will implement *The London Plan* and help to achieve its vision for London as an increasingly sustainable city over the long term. It will present highly technical information in a simplified, modernized layout, be accessible, and communicate using an internationally-recognized "plain language" approach. Another key consideration of the new zoning by-law is how information will be communicated in both print and digital formats, and how the City can leverage an online, interactive platform to geospatially represent zoning specifications. As the zoning by-law will serve as a publicly accessible, city-wide document, it is critical that it appeal to a wide range of users of different ages, abilities, and backgrounds.

This paper is organized into two parts: (1) Structure and Format, and (2) Mapping. For each part, the results of a best practices review of zoning by-laws from small- to mid-sized Ontario cities and out-of-province municipalities are presented to explore potential solutions to current challenges with aging zoning by-laws.

Through ReThink Zoning, there is a unique opportunity to develop and implement a new zoning by-law that achieves the long-term goals and objectives identified in *The London Plan* through a fresh lens. It will need to:

- balance flexibility with certainty, ensuring that all legal requirements are met while also promoting placemaking,
- prioritize accessibility, meeting legislative requirements while integrating new features into its structure and format,
- include inputs from different stakeholders, such as City staff who apply the zoning by-law on a frequent basis and to members of the public using it occasionally,
- leverage technology to present zoning regulations in a comprehensive and compelling manner and provide an opportunity to visualize and interact with technical information in new ways, and
- apply a user-focused approach to ensure the new zoning by-law considers the diversity of users and uses to 2035 and beyond.




TABLE OF CONTENTS

1.0 INTRODUCTION 10
1.1 Purpose 11
1.2 Methodology and Approach 12

2.0 APPROACHES TO ZONING 16
2.1 Background 17

3.0 PART I – STRUCTURE AND FORMAT 20
3.1 Current Zoning By-Law 21
3.2 Best Practices 26
3.3 Recommendations 29

4.0 PART II – MAPPING 31
4.1 Current Zoning By-Law 32
4.2 Best Practices 41
4.3 Recommendations 42

5.0 CONCLUSION AND NEXT STEPS 52

6.0 REFERENCES 56

APPENDICES 58
Appendix A. Zoning By-Law No. Z.-1, Table of Contents 59
Appendix B. Zone Class, Symbol, and Name 64
Appendix C. Summary of Best Practices Review – Structure and Format Features .. 67
Appendix D. Best Practices Review – Key Maps and Schedules 71
Appendix E. Best Practices Review – Online Interactive Applications 83
Appendix F. Mapping Best Practices Review – General Findings 90

LIST OF FIGURES

Figure 1. Aerial Image of Suburban Landscape	17
Figure 2. Transect Example from City of Laval Zoning By-Law	18
Figure 3. Excerpt from Zoning By-Law No. Z.-1, Section 45: Agricultural Zone, Table 45.3	24
Figure 4. Excerpt from Zoning By-Law No. Z.-1, Section 2: Definitions	25
Figure 5. City of London Zoning By-Law No. Z.-1 Schedule “A” – Index Map	34
Figure 6. City of London Zoning By-Law No. Z.-1 Schedule “A” – Key Map A101	35
Figure 7. City of London Zoning By-Law No. Z.-1 Schedule “B” – Parking Standard Areas	36
Figure 8. City of London Zoning City Map	39
Figure 9. Town of Oakville Zoning By-Law 2014-014 Map Index	43
Figure 10. Town of Oakville Zoning By-Law 2014-014 Map 19(1)	43
Figure 11. City of Halifax Regional Centre Land Use By-Law Schedule 2 - Zone Boundaries	46
Figure 12. City of Vaughan Zoning By-Law 001-2021 Schedule A - Map 16	47
Figure 13. City of Laval Online, Interactive Application	49
Figure 14. Town of Newmarket Online, Interactive Application	49
Figure 15. Town of Oakville Online, Interactive Application	51

LIST OF TABLES

Table 1. Best Practices Review – Sample Municipalities	12
Table 2. Overview of Zoning By-Law No. Z.-1 Sections	22
Table 3. Zoning By-Law Structure and Format – Key Takeaways	26
Table B1. Zoning By-Law No. Z.-1 – Zone Class, Symbol, and Name	65
Table C1. Summary of Best Practices Review – Structure and Format Features	68
Table D1. Best Practices Review – Key Maps and Schedules	72
Table E1. Best Practices Review – Online, Interactive Applications	84
Table F1. Mapping Best Practices Review – General Findings	91

This discussion paper frequently refers to specific paragraphs of *The London Plan* as “(LP ###)” to indicate to readers where precise information can be found.



1.0 INTRODUCTION

1.1 Purpose

A key priority of the ReThink Zoning process is to promote a new and innovative approach to zoning that will implement *The London Plan (2016)*. Alternative approaches to developing traditional zoning by-laws support the use of clear and concise language, and provide easily navigable rules that appeal to a wide range of uses. The purpose of this discussion paper is to review how the regulations within London's existing Zoning By-Law No. Z.-1 are communicated, and to identify opportunities for applying new approaches and implementation strategies to improve the zoning by-law's administration, presentation, ease of interpretation, and accessibility. This paper will analyze best practices for zoning by-laws employed by other municipalities to inform recommendations for the structure and format (including key maps, schedules, and online web applications) of London's new zoning by-law. Critical to the success of the zoning by-law will be clear communication, particularly as it relates to the ease with which Londoners can find, access, and understand zoning regulations applicable to a site or area of interest.

Key Questions

This paper was developed to address the following guiding questions:

- *How can the structure, format, key maps, and schedules of Z.-1 be updated to improve the administration, presentation, and clarity of London's new zoning by-law?*
- *How may technology be leveraged to improve the experience of finding and accessing information contained within the new zoning by-law?*
- *What can we learn from other municipal zoning by-laws within Ontario and Canada?*

1.2 Methodology and Approach

This discussion paper features two parts:

1. **Structure and Format:** A review of the structure and format of zoning by-laws in other jurisdictions, and
2. **Mapping:** A review of mapping as a tool used in other zoning by-laws.

For each part, a best practices review was undertaken to identify potential solutions to the challenges regarding the administration, presentation, and accessibility of London’s existing zoning by-law (Z.-1). As part of this analysis, the structure, format, key maps, schedules, and online interactive applications of zoning by-laws for small- to mid-size municipalities were examined. To ensure the analysis comprehensively reviewed a diverse range of zoning approaches (e.g., Euclidean, form-based, and hybrid), the zoning by-laws of four Ontario municipalities, and two out-of-province municipalities were considered (see **Table 1**).

Table 1. Best Practices Review - Sample Municipalities.

Best Practices Review - Sample Municipalities	
Ontario Municipalities	Out-of-Province Municipalities
<ul style="list-style-type: none"> • Town of Newmarket • Town of Oakville • City of Vaughan • City of Markham 	<ul style="list-style-type: none"> • City of Halifax, Nova Scotia • City of Laval, Quebec

London has a population of 422,324 (2021 Census). The comparable municipalities each have a population greater than 200,000 and less than 600,000, except for the Town of Newmarket which was included to provide particular insight into modern approaches and implementation strategies for zoning in urban areas.

A Plain Language Approach

Zoning by-laws are generally regarded as highly technical legal documents that are inaccessible to most readers. Today, best practices are moving in favour of documents that are easier to read, understand, and use. As such, contemporary zoning by-laws feature intuitive layouts that communicate information using plain language to help the reader identify and correctly interpret the information they require.

The London Plan was written in a **plain language** and readable style. **Plain language** is an internationally-recognized best practice that focuses on writing that is understandable and approachable for the intended reader. It ensures clarity and engages a wide range of users that may have varying levels of planning and/or development knowledge. It allows the reader to quickly find what they need, understand it, and use it after reading it once.

The purpose is to introduce a new and strategic approach that presents highly technical legal information in a simplified and user-friendly zoning by-law that reinforces London's values and goals for the city's future and its people.

Accessibility for Ontarians with Disabilities Act (AODA)

Zoning by-laws contain specific requirements that are accessed and interpreted by a range of users. London's zoning by-law must meet the requirements of *Accessibility for Ontarians with Disabilities Act* (AODA) (2005) legislation. All deliverables informing the development of the zoning by-law must be submitted as AODA compliant formats that are compatible with London's programs, systems, and software.

City of London Corporate Identity Guidelines

The City of London Corporate Identity Guidelines provide direction for the use of the City logo and accompanying design features to ensure consistency among the City's documents and other materials. The Guidelines provide templates and elements for reference and use by a variety of stakeholder groups including City Staff, Designers, City Partners, and Design Agencies. Deviations from the Guidelines must be developed in consultation with the City of London's Communications Division.

The Guidelines provide several key directions to be considered in the development of London's new zoning by-Law, including:

- Logo use and placement on documents;
- Consistent fonts (including sizes and colour);
- Formatting features; and
- Alternative formats for accessibility purposes.

Overall, the Guidelines serve as a helpful resource that will be reviewed and considered throughout the ReThink Zoning process. In addition, the Consultant Team refers to a Style Guide prepared for the ReThink Zoning discussion papers that draws from the Guidelines and plain language best practices to support consistent writing and formatting.

Alignment with *The London Plan*

The zoning by-law is a tool utilized by the City of London to control the use and development of land to achieve the vision, values, key directions, and policies of *The London Plan* (LP 1634). As per the "Our Tools" chapter, the zoning by-law may be used to prohibit the use of land and the erecting, locating, or use of buildings or structures, for, or except for, such purposes as set out in the zoning by-law (LP 1635). Further, the zoning by-law may direct development to specific areas to protect archaeological resources, vulnerable areas (e.g., where land is contaminated or contains sensitive groundwater or a surface water feature), significant wildlife habitat, wetland, woodland, ravine, or valley, and/or areas of natural and scientific interest (LP 1635). The type of construction and the height, density, location, size, floor area, spacing, character, and use of buildings or structures to be erected, as well as the minimum frontage and depth of a parcel of land and the proportion and area that a building or structure

occupies may also be regulated by the zoning by-law (LP 1635). Furthermore, City Council may initiate amendments to the zoning by-law where they are necessary to implement changes to provincial legislation and statutes, or to implement the results of an official plan comprehensive review, in accordance with the provisions of the *Planning Act* (LP 1636-1637).

In short, London's new zoning by-law will place *The London Plan* into effect and provide for its day-to-day administration by regulating the use of land, buildings, and structures. As the regulations contained within the zoning by-law are legally enforceable, communicating these regulations in a clear and accessible manner is of critical importance.

Traditionally, zoning by-laws were made available in print format at the City's municipal offices. With the prominence of the internet, digital versions of zoning by-laws were uploaded to municipal web pages to improve the zoning by-law's accessibility. Today, digital versions of zoning by-laws are often complemented by interactive web-based mapping applications that visually communicate spatial information, including key maps and schedules illustrating the extent of zones, property boundaries, streets, and topographic features. Interactive web applications have improved the experience of finding and accessing zoning by-law regulations. There exist additional opportunities to leverage technology to improve the presentation, administration, and accessibility of the zoning by-law, as explored throughout this discussion paper.

Key Considerations

As we explore opportunities to apply new approaches and implementation strategies for improving Z.1's structure and format, key maps and schedules, and online interface, key objectives include:

1. Ensure that the zoning by-law conforms to *The London Plan* and achieves each Place Type's vision, goals, and policy directions.
2. Develop a modern and highly accessible zoning by-law that presents technical legal information in a simplified layout and communicates using plain language.
3. Develop an innovative and illustrative zoning by-law that:
 - Communicates information in a variety of formats (e.g., print and digital) to improve communication and accessibility;
 - Supplements the textual, technical regulations with diagrammatic illustrations to improve clarity and visually demonstrate the intention of such regulations; and
 - Uses an online, interactive web application to effectively communicate all geospatial regulations, including zone boundaries, holding provisions, density, height, and bonusing specifications.

This page intentionally left blank.

2.0

APPROACHES TO ZONING

2.1 Background

Zoning by-laws are legal documents that are prescriptive in nature. They implement the objectives and policies of official plans through rules known as regulations and standards. Existing zoning systems (described below) consider form, intensity, and use in various ways, in turn resulting in different planning outcomes.

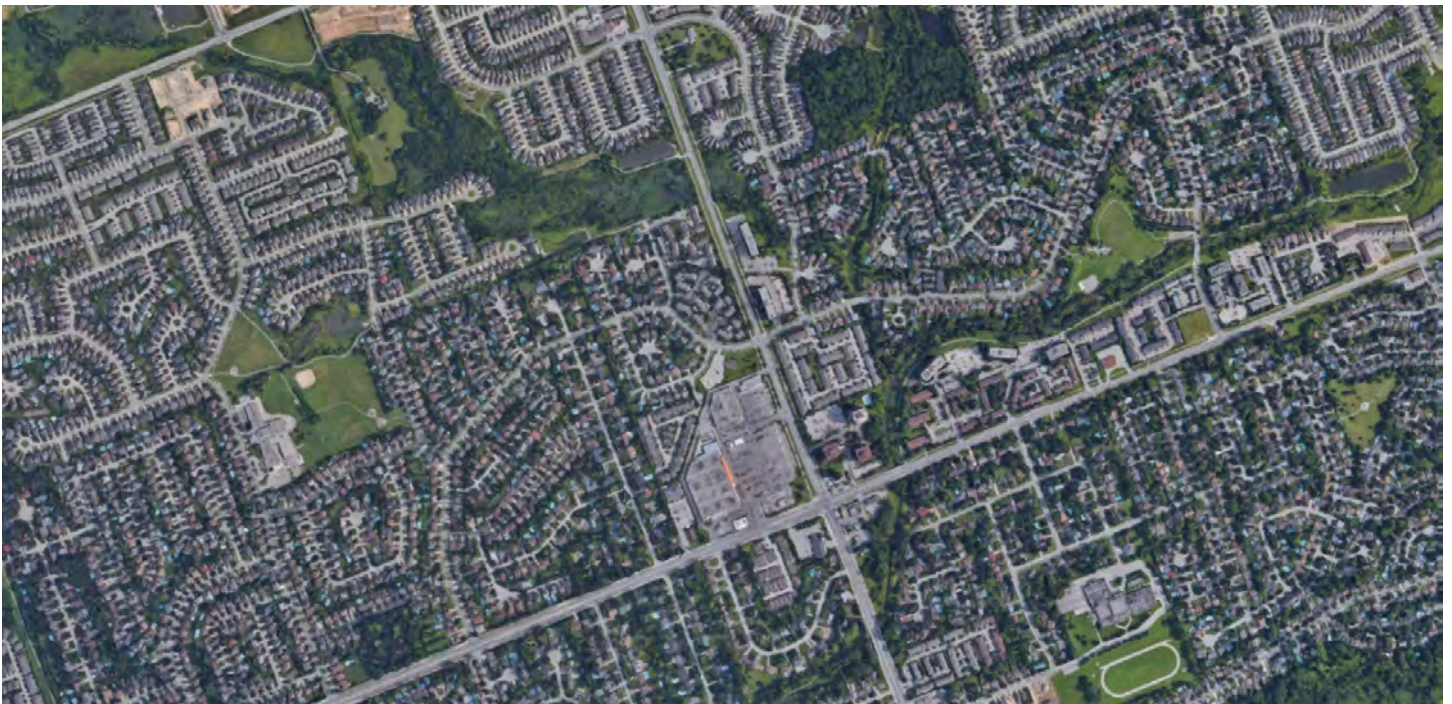


Figure 1. Aerial Image of Suburban Landscape (Source: Google)

Euclidean zoning (or traditional/conventional zoning) is the most prevalent zoning system in Canada. The system emerged in the early 20th century out of the need to protect public health, safety, and welfare by separating incompatible land uses. It permits, restricts, and prohibits uses that are deemed appropriate or inappropriate for a property, per its applicable zone and associated regulations. It regulates standards such as building heights, setbacks, and densities. Use-based zoning by-laws can be supplemented with non-statutory design guidelines to serve as an alternative zoning approach.

Form-based code (FBC) emerged as an alternative to traditional zoning in the late 20th century. During this time, the New Urbanist movement emerged as a planning approach that emphasized the design of human-scale neighbourhoods. As per the [Form-Based Codes Institute](#), FBC uses physical form as the organizing principle in a zoning by-law and encourages a mix of land uses. It focuses on the relationship between buildings and streetscapes, and the shared public realm. Regulations are concerned with context, site layout, building placement, and the scale and massing of buildings within their environments.

Ultimately, a FBC can be used as a tool to achieve a community vision resulting from a public design process. The development outcomes depend on the objectives of the community plan implemented by a code.

Many form-based codes are organized using the concept of a rural-to-urban “transect,” in which zones are primarily classified by the physical intensity of the built form, the relationship between nature and the built environment, and the complexity of uses within the zone. “SmartCode” – a form-based code template – allows for a gradual transition between different areas of a community that responds to local conditions. **Figure 2** demonstrates how different development density classifications for land use can be organized through a transect-based approach.



Figure 2. Transect Example from City of Laval Zoning By-Law (Transect des types de milieux)

Hybrid code is an approach that combines form-based zoning districts and other form-based standards with a conventional zoning approach. This approach seeks to integrate and balance development standards for use and form, while focusing on more predictable outcomes. A hybrid code can take the form of a chapter within the code, similar to a special district or overlay, and can be crossreferenced to other sections of the pre-existing code for selected development standards (e.g., parking dimensions or landscaping standards). For areas that fall within these regulatory area boundaries, development must abide by the new regulations for the form-based zones.

Performance-based zoning (or incentive zoning) is focused on impacts of a use or activity and where certain performance standards intended to minimize and mitigate impacts (e.g., site layout or operational requirement etc.) can be met and/or where a use can be permitted. This revenue-generating, market-based tool is commonly known as density bonusing and is leveraged by the development industry to increase heights or densities on a given site. Performance-based zoning can also serve as a tool for strategic growth or reinvestment initiatives.

It is important to note that zoning by-laws are context-specific and grounded in a framework that balances form, intensity, and use across different built and natural environments. *The London Plan* serves as the City’s roadmap to planning for change in the city over the long-term. It identifies several city-wide challenges – from the need for more compact growth and increased affordability to reducing or mitigating the effects of climate change. All lands within *The London Plan* fall within a Place Type and are subject to a range of policies that regulate permitted development (LP 47.5).

Adopting a place-based approach provides new opportunities for contemplating form, intensity, and use. The ReThink Zoning process will explore how a FBC could support the policy objectives of *The London Plan* and realize the vision for each Place Type. There is an opportunity for FBC principles to be applied to new development, urban infill and revitalization, and preservation.

Intensity:	<ol style="list-style-type: none">1. The magnitude of a quantity.2. The concentration of development and uses on a site. Intensity measures include height, gross floor area, floor area ratio, and density (e.g., the number of persons and jobs per hectare and the number of residential units per hectare).
-------------------	--

PART I

3.0 **STRUCTURE AND FORMAT**

3.1 Current Zoning By-Law

The City of London's current Zoning By-Law No. Z.-1 was prepared to implement the objectives of the 1989 *London Official Plan*. With a primary emphasis placed on land use, official plan designations are specifically referenced in its zone categories, which contain eight zone classes and 47 zone variations that implement the Plan's designations and policies. There is a total of 51 sections and two key map schedules ("A" for zoning designations and "B" for parking). Each zone forms its own section of the zoning by-law.

An overview of Z.-1's sections is provided in **Table 2**. A full table of contents is provided in [Appendix A](#).

Table 2. Overview of Zoning By-Law No. Z.-1 Sections

Overview of Zoning By-Law No. Z.-1 Sections	
Section(s)	Purpose
Disclaimer	<ul style="list-style-type: none"> • Outlines the purpose and intent of zoning by-laws and maps; • Content accessed through the electronic version of Z.-1 is not necessarily up to date; • Official versions of Z.-1 may be obtained by contacting City's Zoning Division; and • Official print publications take precedence (where text or maps differ online).
Section 1 – Administration/ Enforcement and Interpretation	<ul style="list-style-type: none"> • Administration, enforcement, and interpretation of Z.-1; <ul style="list-style-type: none"> • Example of Section 1.9 – Measurements provided (subject to the normal rules of rounding numbers). • Examples and illustrations do not form part of the Z.-1; and • Effective date of Z.-1.
Section 2 – Definitions	<ul style="list-style-type: none"> • 40 pages of terms and definitions, listed in alphabetical order, and • Seven pages of examples and illustrations (represented as figures) at the end of the section.
Section 3 – Zones and Symbols	<ul style="list-style-type: none"> • Establishment of zones, which may be referred to by class, symbol, or name (Note: A full list of classes, symbols, and zones is provided in Appendix B); • Zone symbols and provisions (density, private road, height, bonusing, holding zones, compound zones, and multiple zones); and • Interpretation of zone boundaries, map details, and uses.
Section 4 – General Provisions	<ul style="list-style-type: none"> • Application of general provisions (relating to any zone within the City of London for lands affected by Z.-1); • Conformity with the regulations specified by the applicable general provisions described in subsections of Section 4 (37 subsections in total); • Provisions vary for different uses, standards (such as Accessory Uses, Yard Requirements, Parking Standards, and Secondary Dwelling Uses), and sensitive uses; and <ul style="list-style-type: none"> • Road allowance requirements for specific roads provided. • Includes special provisions for bonus zones.

<p>Sections 5 through 51 – Zones (Residential, Office, Commercial, Institutional Facilities, Open Space and Recreation, Industrial, Agricultural, Miscellaneous)</p>	<ul style="list-style-type: none"> • Eight zone categories (with individual symbols and names); <ul style="list-style-type: none"> • Includes seven zone categories for specific uses (such as “Residential” and “Miscellaneous”). • Each zone contains a section on the zone’s general purpose; • Outlines permitted uses, regulations, and special provisions included for each zone; and • When applicable, table(s) for zone variations are included at the end of each section.
<p>Metric Conversion Table – Schedule A (Key Maps for Zoning Designations) and Schedule B (Key Maps for Parking)</p>	<p><u>Schedule A</u></p> <ul style="list-style-type: none"> • Maps for zoning designations, and • Index map and 20 key maps (A100-A120) provided. <p><u>Schedule B</u></p> <ul style="list-style-type: none"> • One map that identifies Parking Areas (three types).

3.1.1 Format

Z.-1 takes a traditional approach to formatting. The document is in black and white, applies Arial font throughout (except for page numbers which are in Times New Roman), and is maintained in Microsoft Word.

The online version of the document is divided into 51 distinct sections. Convenience features such as hyperlinks are not utilized except for the Urban Reserve Zone (although the link appears to be broken – page not found). Text within the document can be searched using the Control+F keyboard shortcut.

While some tables are included at the end of specific sections to summarize regulations and standards, the document’s use of tables and charts is minimal (see **Figure 3**). Lists are used throughout the document to organize information such as Road Allowance Requirements for Specific Roads (Z.-1, Section 4.21).

**TABLE 45.3
REGULATIONS FOR THE
AGRICULTURAL (AG) ZONE VARIATIONS**

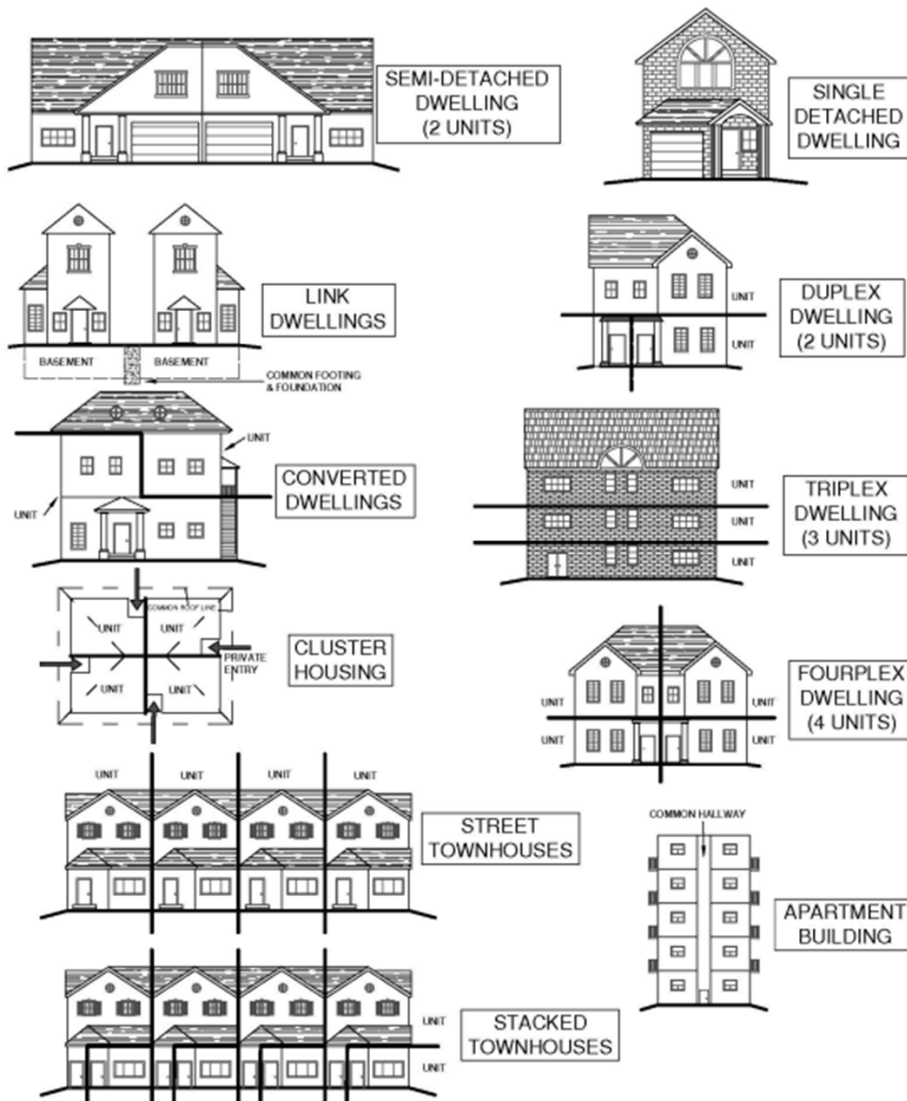
ZONES	AG1*	AG2	AG3	AG4	AG5
	*Approved by OMB R050168 February 20, 2008 Z.-1-051390				
PERMITTED USES	See Section 45.2				
LOT AREA (ha) (minimum)	40	40	40	As existing on the date of the passing of the by-law	40
LOT FRONTAGE (m) (minimum)	200	300	200		200
FRONT & EXTERIOR SIDE YARD DEPTH (m) (minimum)	15	30	15		15
REAR YARD DEPTH (m) (minimum)	15	30	15		15
INTERIOR SIDE YARD DEPTH (m) (minimum)	15	30	15		15
RESIDENTIAL HEIGHT (m) (maximum)	12	12	12		12
ALL OTHER BUILDING HEIGHT (m) (maximum)	15	15	15		15
COVERAGE (%) (maximum)	20	10	20		20

Figure 3: Excerpt from Zoning By-law No. Z.-1, Section 45: Agricultural Zone, Table 45.3

The use of illustrations at the end of Section 2: Definitions, are provided for clarification and convenience only, and do not form part of Z.-1 (see Figure 4).

FIGURE 1

ILLUSTRATION OF DWELLING TYPES



NOTE:
 THE ABOVE ILLUSTRATIONS ARE FOR CLARIFICATION AND CONVENIENCE ONLY AND DO NOT FORM PART OF THIS BY-LAW.
 PLEASE ALSO REFER TO THE DEFINITIONS AND THE GENERAL PROVISIONS OF THIS BY-LAW.

Figure 4: Excerpt from Zoning By-Law No. Z.-1, Section 2: Definitions

3.2 Best Practices

3.2.1 Analysis

A best practices review was undertaken to review the structure and format features of different municipal zoning by-laws. **Table 3** provides an overview of features and key takeaways. A comprehensive review of each zoning by-law is provided in **Appendix C**. Note that mapping features are explored in a separate section of this paper ([Section 4](#)).

Table 3. Zoning By-Law Structure and Format – Key Takeaways

Zoning By-Law Structure and Format – Key Takeaways			
Municipality	Zoning By-Law / Status / Purpose	Structure	Format
Ontario Municipalities			
Town of Newmarket	<p>Urban Centres Zoning By-Law 2019-06</p> <p>Status: Approved in June 2019 (by LPAT).</p> <p>Purpose: Implements the Town’s Urban Centres Secondary Plan through an area-specific zoning by-law.</p>	<ul style="list-style-type: none"> • Non-statutory preamble to assist the reader; • Minimal sections (9 total); • Separate sections for General Provisions, Parking, Loading, Queuing, Zone Provisions (Mixed Use, Institutional, and Open Space), Site-Specific Provisions; and • Minimal zoning categories (3). 	<ul style="list-style-type: none"> • Convenience features (hyperlinked table of contents, tables and charts to organize provisions, standards, etc.), and • Graphically oriented (use of 2D and 3D illustrations/diagrams and mapping overlays for site specific provisions, holding provisions, temporary use zones, interim control zones, etc.).
Town of Oakville	<p>Zoning By-Law 2014-014 (south of Dundas Street and north of Highway 407)</p> <p>Status: Passed by Council in February 2014, partially in-force February 2015 (by OMB), certain sections not yet in-force.</p> <p>Purpose: Replaces 1984 zoning by-law (zone categories removed and consolidated into a user-friendly document).</p>	<ul style="list-style-type: none"> • Non-statutory User Guide to assist the reader; • Separate sections for General Provisions, Parking, Loading, and Stacking Lane Provisions, Special Provisions, and Holding Provisions, etc.; • Individual parts and complete text available online; and • Minimal zoning categories (9). 	<ul style="list-style-type: none"> • Definition index provided for quick reference, followed by definitions; • Graphically oriented (use of 2D and 3D illustrations and diagrams); • Good use of charts and matrices to allow for cross-referencing and organization of definitions, regulations, standards, permitted uses, etc.; and • Use of colour in the User Guide mapping (described in Section 4 of this paper).

<p>City of Vaughan</p>	<p>By-Law No. 001-2021</p> <p>Status: Enacted by City Council on October 20, 2021.</p> <p>Purpose: Replaced the 1988 zoning by-law.</p>	<ul style="list-style-type: none"> • Separate sections for General Provisions, Specific Use Provisions, Parking, and Stacking and Loading Requirements; • A description of site-specific zoning exceptions is provided on the project webpage (in the zoning by-law and additional schedules); • Site-specific zoning exceptions schedules: <ul style="list-style-type: none"> • D-Schedule – mandatory part of the exception; • E-Schedule – map showing the site-specific exemption area/lands; and • T-Schedule – additional applicable zoning standards. • Minimal zoning categories (7). 	<ul style="list-style-type: none"> • Definition index provided for quick reference, followed by definitions; • Graphically oriented (use of 2D and 3D illustrations and diagrams); • Use of charts and matrices to allow for cross-referencing and organization of definitions, regulations, standards, permitted uses, etc.; • Use of colour for different zone categories; • Use of colour in illustrations (non-statutory); and • Bold visual contrast in tables. <p><i>Other Observations:</i></p> <ul style="list-style-type: none"> • No hyperlinked table of contents.
<p>City of Markham</p>	<p>Comprehensive Zoning By-Law Review (June 2021 DRAFT)</p> <p>Status: Final draft zoning by-law available for review.</p> <p>Purpose: Streamline and consolidate 46 parent by-laws enacted between 1954 and 2004.</p>	<ul style="list-style-type: none"> • Organized by parts (13); • Separate sections for General Provisions, Parking and Loading Standards, and Exceptions; • Short in length (draft is 202 pages); and • Minimal zoning categories (7). 	<ul style="list-style-type: none"> • Use of charts and diagrams to organize definitions, regulations and standards, permitted uses, etc.; • Hyperlinks to the <i>Planning Act</i>; • Use of coloured text (blue and green) in “Part” headings and subheadings; and • Use of photos (e.g., examples of different building types for each zone). <p><i>Other Observations:</i></p> <ul style="list-style-type: none"> • Uses excessive white margins, and • Small text in charts.

Out-of-Province Municipalities			
<p>City of Halifax, Nova Scotia</p>	<p>Regional Centre Land Use By-law</p> <p>Status: In effect as of November 2021.</p> <p>Purpose: Implements the Regional Centre Secondary Municipal Planning Strategy.</p>	<ul style="list-style-type: none"> • Sections on design and form (Built Form and Siting Requirements, General Design Requirements, and Landscaping); • Incentive/Bonus Zoning Section; • General requirements for view planes, sight lines, and waterfront view corridors; • Numbered definitions (287) included near the end of document; • Schedules (51); and • Many schedules listed separately online. 	<ul style="list-style-type: none"> • Convenience features (hyperlinked table of contents); • Tables and charts to organize definitions, standards, permitted uses, special provisions, etc.; • Use of colour in illustrations (non-statutory); and • Maps listed separately online (can be viewed individually). <p><i>Other Observations:</i></p> <ul style="list-style-type: none"> • Use of roman numerals impractical for user-friendliness (high number of parts), and • Subsections not numbered.
<p>Ville de Laval (City of Laval), Quebec</p>	<p>Projet de règlement CDU-1</p> <p>Status: Draft zoning by-law available for review (April 2021).</p> <p>Purpose: To replace the former by-law adopted in 1970 (modified 3,760 times, 3,500 zones).</p> <p>Note: Comprehensive Plan (no Official Plan), zoning by-law is in French.</p>	<ul style="list-style-type: none"> • Organized by Titles (10) (include Chapters and Sections); • Separate sections for General Development Provisions, Land uses, Transect Zones, and Special Areas; • Organizes the City using transects (landscapes and types of living environments); • Administration and procedures included near the end of document; and • Maps listed separately online (viewed individually). 	<ul style="list-style-type: none"> • Convenience features (hyperlinked table of contents, new webpage appears when clicking on main page hyperlinks); • Graphically oriented (use of 2D and 3D illustrations, diagrams, and colours for each zone category); • Tables and charts to organize definitions, standards, permitted uses, special provisions, etc.; • Use of colour in diagrams; • Use of colour (dark blue) in tables and section headers; • Use of colour in illustrations (non-statutory); and • Some use of columns.

3.3 Recommendations

Z.-1 was created with an emphasis on land use, with some consideration for intensity, and minimal attention directed to built form. Based on the review of Z.-1's structure and format, several challenges include:

- **Content heavy:** Numerous sections (51) with many different zone variations (47), and a long list of definitions;
- **Difficult to navigate:** Navigational challenges in the absence of formatting and convenience features (e.g., page numbers);
- **Lacking in design elements and document organization:** While some charts and illustrations are included in Z.-1, the document could benefit from enhanced, updated graphics in addition to the introduction of coloured or high-contrast elements to make the document more user-friendly; and
- **Online structure:** Due to the large volume of sections and page numbers, Z.-1's sections are uploaded individually to the City's webpage. Opportunities to consolidate and streamline the document should be considered.

ReThink Zoning presents an opportunity to introduce a new way of structuring and formatting the zoning by-law without compromising the regulatory nature of the document, and in a way that complements *The London Plan*. Preliminary recommendations are as follows:

- Definitions should be universal across municipal documents to ensure clarity and avoid repetition.
- Site-specific zoning regulations should list only those regulations that differ from the base zoning, thereby avoiding potentially unnecessary text.
- The zoning by-law should be structured and numbered in a way that allows for easy future amendments to maintain the document's structure and coherence.
- The inclusion of illustrations and sidebars within a zoning by-law are a relatively new approach to improve the readability and clarity of documents for use by the general public. Although these additions are not regulations in themselves, they can help illustrate the intent of regulations as visual aids or examples.

The best practices review revealed several key takeaways for London's new zoning by-law. All zoning by-laws explored in the Ontario context adopted a hybrid code approach to zoning that leveraged graphical elements (e.g., such as diagrams and illustrations) to help communicate building standards and to provide contextual examples for readers. While also considered a hybrid code approach, Halifax's zoning by-law leaned more toward form-based code requirements such as built form and siting. It also used an incentive-based, bonusing zoning approach in certain areas of the city. Laval's

zoning by-law is the only one reviewed that used the SmartCode transect approach. While all reviewed zoning by-laws made use of charts and tables to organize requirements, graphic design and formatting play a key role in their successful application. Colour can also improve navigation, as demonstrated in the City of Vaughan's zoning by-law. The use of small font with excessively wide margins should be avoided.

In summary, the following elements should inform the development of London's new zoning by-law:

- Clear and consistent templates for each regulation;
- Provision of links for easy cross-referencing of regulations and policies;
- Integrated text-based content and visuals (graphics, illustrations, charts, etc.);
- User-focused design tailored to the needs of its users;
- Plain language principles (including the use of accessible and inclusive language);
- Minimal jargon and repetition;
- Inclusion of a mini-glossary of defined terms with each regulation; and
- Ability to be routinely updated, as required.

As the world becomes increasingly digital, opportunities have emerged to use technology to access and interact with documents, such as a zoning by-law. Many municipalities are providing an interactive version of their zoning by-law online. Although online, interactive versions of zoning by-laws are typically non-official companions to traditional zoning by-law documents. It will be important to consider how zoning regulations will be presented (and kept up to date) in digital formats to ensure coherence between public information sources and better communicate the zoning by-law in a more engaging format.

PART II

4.0 **MAPPING**

4.1 Current Zoning By-Law

4.1.1 Key Maps and Schedules

The maps of Z.-1 may be accessed via the City of London’s [website](#) or viewed in print at the City’s municipal offices. The Z.-1 webpage includes contact information, should an individual have questions pertaining to the zoning by-law, and a disclaimer that states, “in any situation where the official printed publications of the City of London differ from the text or maps presented on this website, the official print publications take precedence.”

The maps of Z.-1 are presented online in two schedules: Schedule “A” – Key Maps (Zoning Designations) (see **Figure 5** and **Figure 6**) and Schedule “B” – Key Maps (Parking) (see **Figure 7**). These schedules delineate zoned areas and provide other elements for reference, including a scale and compass, property boundaries, streets, and topographic features such as waterbodies. The shaded areas identify lands that are extractive industrial areas, aggregate resource areas, or lands affected by the *Conservation Authorities Act*, which would require approval from the Conservation Authority before any development or redevelopment may occur. Conservation Authorities with jurisdiction in the City of London include:

- The Upper Thames River Conservation Authority,
- Kettle Creek Conservation Authority, and
- Lower Thames Valley Conservation Authority.

Topographic Features:	The physical features of an area on the surface of the Earth, including but not limited to: reliefs (e.g., mountains, valleys, slopes), hydrography (e.g., lakes, rivers, streams), vegetation (e.g., wooded areas), transportation (e.g., roads, trails, railways, bridges), culture (e.g., building footprints, urban areas), and boundaries (e.g., municipal, provincial, international).
------------------------------	--

The first page of Schedule “A” is an index map. Using thick, solid black lines to identify boundaries, the index map divides the City of London into smaller areas. Each area is numbered sequentially from A101 to A120. This number identifies the area’s associated key map, which is included as part of Schedule “A.” There are a total of 20 key maps, each of which provides the zone code for properties within its area. All key maps include a small image of the index map set in the bottom-right corner of the page for reference. Schedule “B” is comprised of a map of London’s downtown upon which parking standard areas are identified by bolded, italicized, capitalized text (e.g., **AREA 1**).

Overall, Schedule “A” and Schedule “B” are intuitive to navigate; however there are several opportunities to improve their interpretability, presentation, and effectiveness.

Firstly, all maps are scanned images, provided in black and white. The use of a limited colour scheme makes it challenging to distinguish between features and read text, which is often “fuzzy” and at times illegible due to the quality of the scan. Although individuals may view higher resolution maps in print at the City’s municipal offices, requiring travel to view maps is a barrier to accessibility.

Secondly, although street names are provided on the index map of Schedule “A” to aid orientation, they are not provided on the key maps of Schedule “A”, nor are they legible on the parking standard areas map of Schedule “B.” This inconsistency makes the maps challenging to understand and navigate. For Schedule “B,” challenges are further exasperated by the absence of an inset or locator map that identifies where the Downtown Area is located within the city.

Thirdly, although the key maps of Schedule “A” have similar layouts, several differences exist between the maps including different scales, scale bars, and orientations. For example, when the key map is presented in landscape orientation not all textual information is rotated to the same degree, which impacts the map’s legibility.

Fourthly, the maps included in Schedule “A” and Schedule “B” do not have a strong visual hierarchy. In introducing a stronger hierarchy of symbology for lettering, line weights, and shading, while more important features are larger and bolded, visual contrast, and overall legibility may be improved.

[Section 4.2](#) provides an analysis of key maps and schedules in other municipalities. Recommendations based on this analysis discuss how to maximize the legibility, presentation, and effectiveness of London’s zoning by-law maps and schedules.

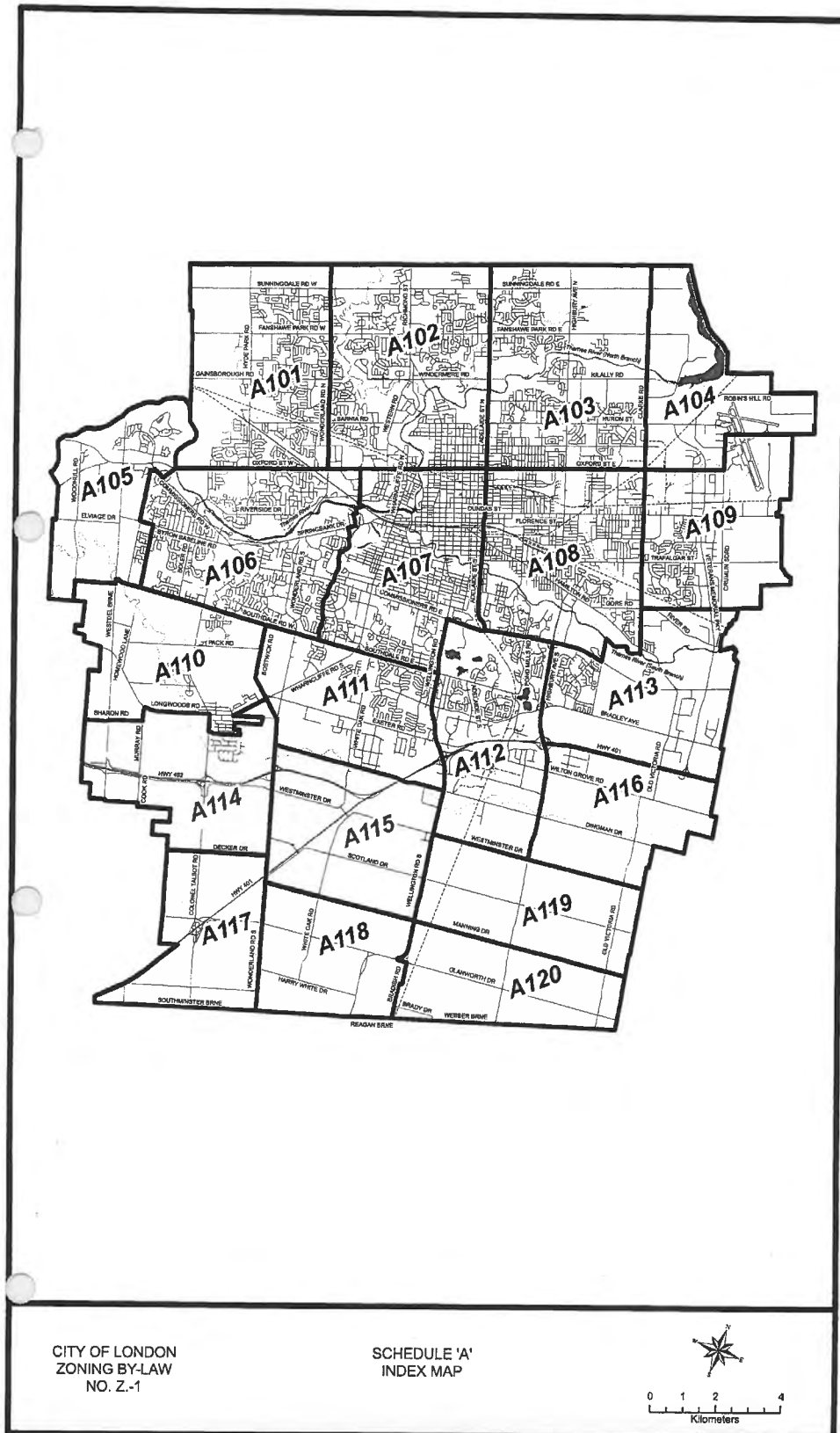


Figure 5: City of London Zoning By-Law No. Z.-1 Schedule "A" – Index Map

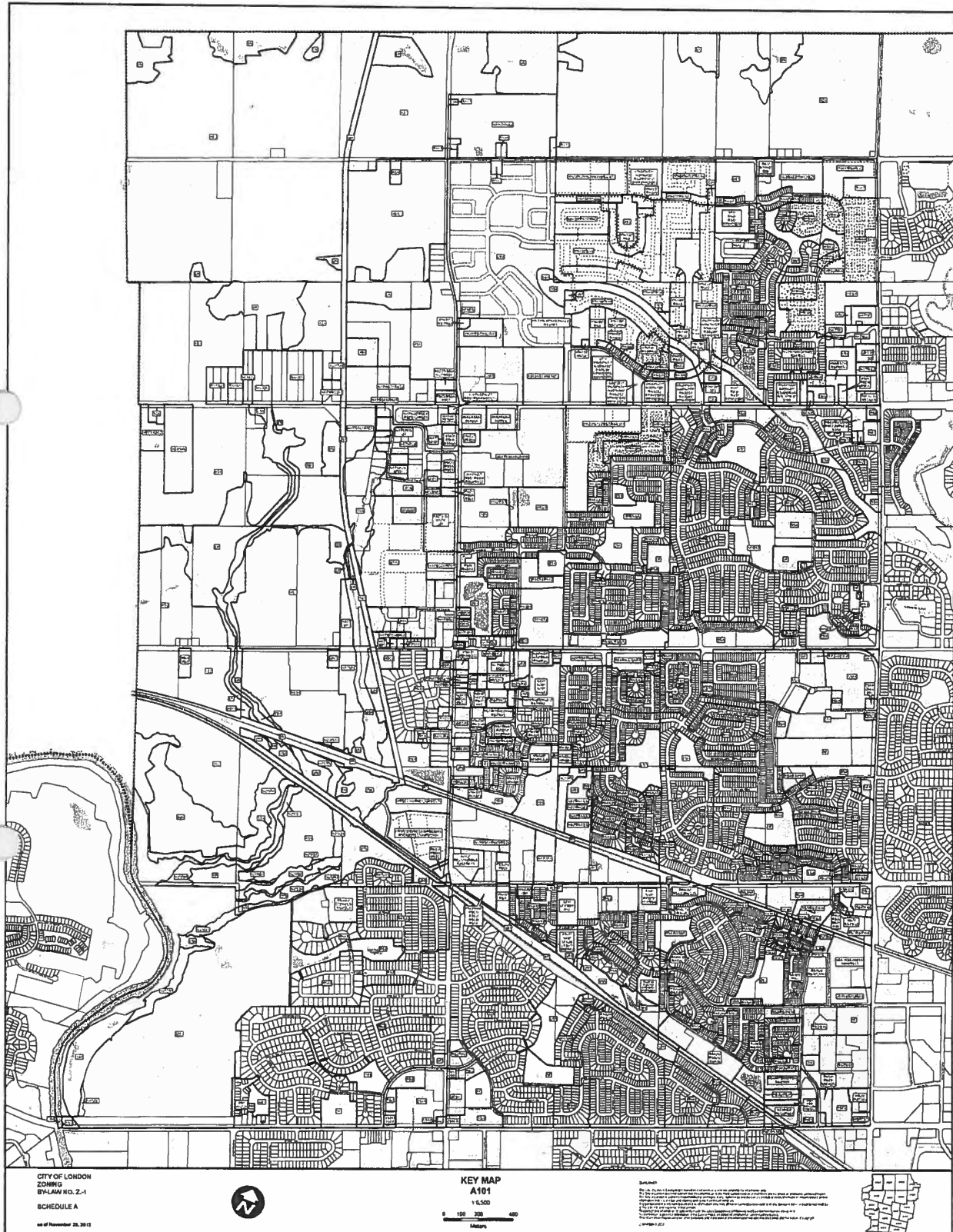


Figure 6: City of London Zoning By-Law No. Z-1 Schedule "A" – Key Map A101

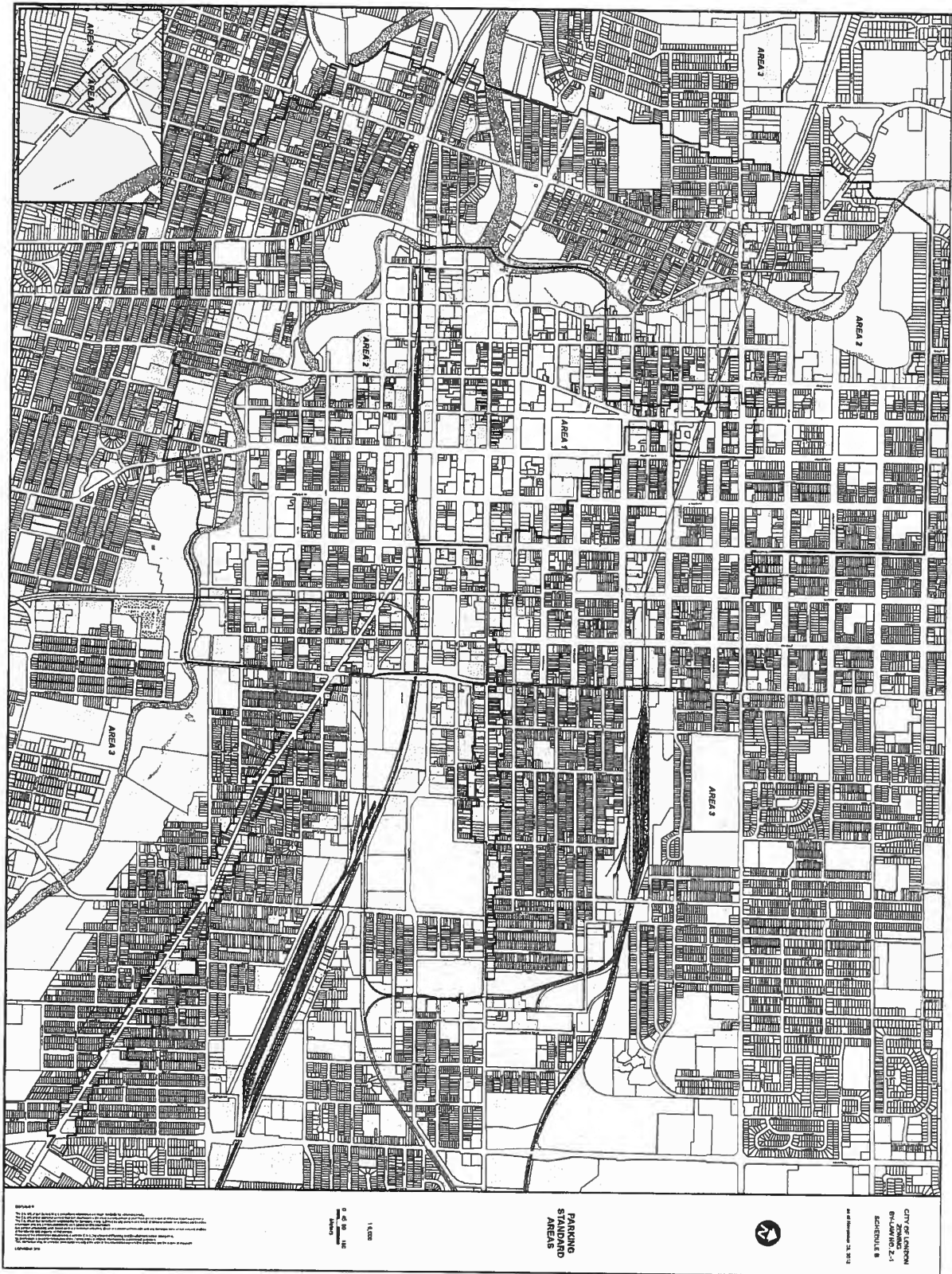


Figure 7: City of London Zoning By-Law No. Z.-1 Schedule "B" – Parking Standard Areas

4.1.2 Interactive Zoning City Map

On the Z.-1 [webpage](#), the City recommends that individuals view the [Zoning City Map](#) (see **Figure 8**) to determine the correct zoning for an area or specific business. Although a link to this application is provided on the webpage, the link does not work. Updating this link is an important step to ensuring that the new zoning by-law can be easily accessed by all. Alternatively, the Zoning City Map can be accessed through the City’s Zoning [webpage](#). This webpage includes a brief description of what zoning is and how it works, a link to the Zoning City Map, as well as instructions on how to use the interactive Zoning City Map.

The Zoning City Map is an interactive online application that utilizes a geographic information system to enable users to review the zoning of an area. Upon opening the Zoning City Map, a disclaimer notes that content accessed through the Zoning City Map may not be an exact and/or current reproduction of official documents. This disclaimer informs the user that revisions to the zoning by-law may be in progress and that official printed publications take precedence over the available digital information. The disclaimer also provides contact information should a user have any questions pertaining to the Zoning City Map, outlines the terms and conditions, and includes a note on the reproduction or distribution of the zoning maps. Users must check a box stating, “I agree to the above terms and conditions,” as detailed in the disclaimer, prior to accessing the zoning information.

Geographic Information System:	A computer system that creates, manages, analyzes, and displays geographically referenced information. Location data and descriptive information are integrated within the system to enable users to identify spatial patterns and relationships.
---------------------------------------	---

Geospatial:	Derived from or relating to data associated with a geographic location.
--------------------	---

Once the Zoning City Map is launched, users may see the following:

- Parcel boundaries;
- Building footprints;
- Greenspaces;
- Address labels;
- Street names; and
- Other features such as waterbodies and railways.

Users may use the search bar located in the top-left corner of the application to search for a property by address, street name, or intersection (i.e., Street A & Street B). Alternatively, users may move their cursor to navigate the map. The application’s navigational aids located in the top-left corner next to the search bar may also be used. Amongst other features, these aids include zoom-in and out buttons and a “My Location” feature which uses IP geolocation to identify a user’s current location on the map. Users may also use the scroll wheel of their mouse to zoom-in and out. The map’s scale is provided in the bottom-left corner.

The bottom-left corner of the application includes the “Basemap Gallery” icon, which allows users to alter the basemap of the Zoning City Map between orthoimagery and the default more simplified basemap. Streets and places of interest such as parks and community centres are labelled on all basemaps. Adjacent to the basemap gallery is the “Print” icon. Upon selecting this icon, users may select a map layout prior to exporting and/or printing. The map scale may be preserved or altered, labels and the legend may be toggled on or off, and the scale bar’s units as well as the map’s print quality may be set. Additionally, the map’s spatial reference may be viewed (e.g., NAD 1982 UTM Zone 17N).

Basemap:	A reference map on which other data layers are overlaid to visualize geographic information. Basemaps provide contextual information and often include topographic features.
Orthoimagery:	Aerial photography or satellite imagery that has been adjusted and geometrically corrected for topographic relief, lens distortion, and camera tilt to have a uniform scale.
Spatial Reference:	The coordinate system used to locate and measure entities on the surface of the earth.

The “Measurement” and “Draw” tools are located next to the “Print” icon. The first allows users to click on the map to measure the distance between two points or calculate the area of a defined region. Using the “Measurement” tool, a user may determine the longitude and latitude of a point on the map. Using the “Draw” tool, a user may place symbols on the map and/or draw shapes such as lines, triangles, squares, circles, and polygons. Moreover, this tool enables users to gather length or perimeter measurements for the shapes they draw and/or add text to the map.

The “About” icon is located in the top-right corner of the map. This icon provides a quick tip for using the Zoning City Map. The “Legend” icon is adjacent, followed by the “Layer List” icon. The components of the legend will reflect the features that are selected under the Layer List. Once layers are selected, a user may be required to zoom-in to view them on the map. The Layer List includes basemap information and nine layers:

- Conservation Authority Regulated Areas;
- Near Campus Neighborhoods Area;
- Regulatory Flood Line;
- Residential Rental Licenses;
- Parking Standards, Primary Transit Area;
- Tree Protection Area; and
- Zoning – As of April 29, 2022.

IMPLEMENTING THE NEW ZONING BY-LAW

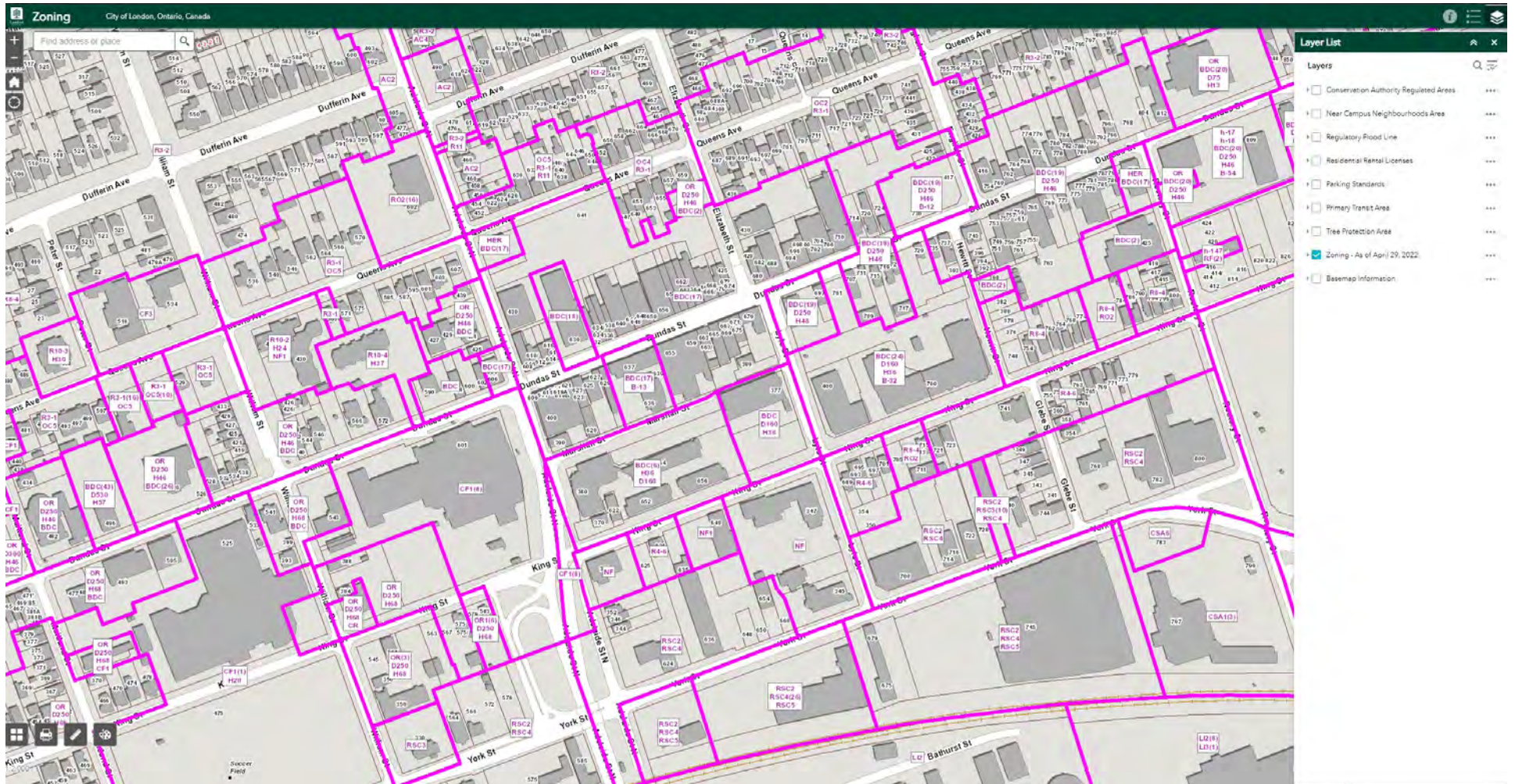


Figure 8. City of London Zoning Map

Layer:	The visual representation of a geographic dataset in a digital format. A layer may be comprised of point, line, and/or polygon features that represent real-world areas. A layer is often equivalent to data represented in the legend of a paper map.
---------------	--

When selecting the “Zoning – As of April 29, 2022” layer from the “Layer List,” users may view the zoning of any property or area within the City of London. Within the Zoning City Map, each Z.-1 zone is delineated by a pink line. Zoning regulations applicable to a zone are presented in a superimposed text box. To obtain information about the zone of a property, users may select the specific property on the map and a text box will appear with the zone code and a link to the applicable zoning by-law regulation(s).

Using the “Basemap Information” layer, users may review property information. The pop-up that appears upon selecting a site allows the user to select the “Next feature” icon to view this information. The user may click on the assessment parcel number, which provides them with additional information pertaining to the parcel, including the parcel’s roll number, legal description, electoral ward, and municipal address.

Overall, the current presentation of zoning information within the Zoning City Map reveals several challenges, specifically in regard to clarity. As the map utilizes a single pink outline for all zone boundaries and relies on a text box to communicate zoning regulations, it is difficult to determine the zoning of an area at a quick glance. Other challenges include the fact that the text box may exceed the extent of the area in question, and that all text within the box is formatted with capitalized and bolded pink text, despite pertaining to different zoning provisions.

For example, a property’s text box may read, “**DA2(5) D250 H25 B-3.**” For users unfamiliar with the zoning by-law, the meaning of these characters and numbers are unclear. If each zone’s class, symbol, density, height, and bonusing provisions were presented using separate layers which could be toggled on or off, technical regulations would be easier to understand. Zone classes, for example, may be differentiated by colour, while density provisions may be distinguished by the intensity of a hue or pattern to produce a more compelling, intuitive map that clearly communicates the aforementioned zoning information in an engaging way.

In [Section 4.2](#) of this paper, the online interactive applications of several zoning by-laws are analyzed to inform recommendations on how to address the challenges of Z.-1’s online application and improve how its geospatial components are communicated while enhancing accessibility.

4.2 Best Practices

The purpose of the best practices review is to identify potential solutions to the administration, presentation, and accessibility of Z.-1. Several elements from zoning by-laws in other municipalities were considered, including:

- Structure;
- Layout;
- Tools (if applicable);
- Major Features and Symbology;
- Map Elements;
- Scale;
- Units;
- Orientation; and
- Colour Scheme.

It is important to note that each online interactive application reviewed as part of the best practices analysis is analogous to London's Zoning City Map. All applications similarly:

- Require a connection to the internet;
- Require the use of a computer mouse to enable a user to zoom, pan, and interact with the map; and
- Provide additional information pertaining to a site presented via pop-up text when a specific parcel is selected.

That being said, each online interactive application provides various layers. To ensure consistency, only the "Major Features and Symbology" of zoning-related layers were reviewed for each zoning by-law's online interactive application.

See [Appendix D](#) for the key maps and schedules analysis, and [Appendix E](#) for the online interactive applications analysis.

4.3 Recommendations

A picture is worth a thousand words. By employing clear and intuitive spatial features, symbols, colours, and patterns, the new zoning by-law can transition from a primarily text-based document to a highly illustrative document that better captures the story of London's planned urban environment.

As visual representations of the zoning by-law, each map layer will play a critical role in public engagement and in the presentation and communication of ReThink Zoning. When these layers are superimposed in an online interactive application, spatial trends and relationships will emerge and provide valuable insights into London's planned regulatory framework.

The general findings from the best practices review are summarized in [Appendix E](#). These findings inform recommendations pertaining to the presentation of the new zoning by-law's key maps and schedules, as well as the online interactive application.

4.3.1 Key Maps and Schedules Recommendations

To ensure the new zoning by-law's key maps and schedules are accessible, visually compelling, legible, and easy to interpret and understand, the following approaches and implementation strategies are recommended. These approaches and implementation strategies are informed by the best practices analysis and will ensure the key maps and schedules provide comprehensive information in an engaging and clear format. Online interactive map application recommendations are provided in [Section 4.3.2](#).

Access

To increase the accessibility of the new zoning by-law, it is recommended that it be provided in both print and digital formats. Print versions may be accessed at the City of London's Municipal Offices and online versions may be hosted on the City's website. It is recommended that a link to the zoning by-law's online interactive application be provided on the same webpage as the online version of the zoning by-law.

Structure

An Index Map and Key Map structure is recommended to ensure that maps do not become cluttered with indistinguishable features. Further, index maps should designate key map boundaries along street lines, rather than by an arbitrary grid (see [Figure 9](#) and [Figure 10](#)). To increase map legibility, zoning provisions should be presented across several maps. For example, zone codes or classes should be presented on one map while height provisions be provided on another.

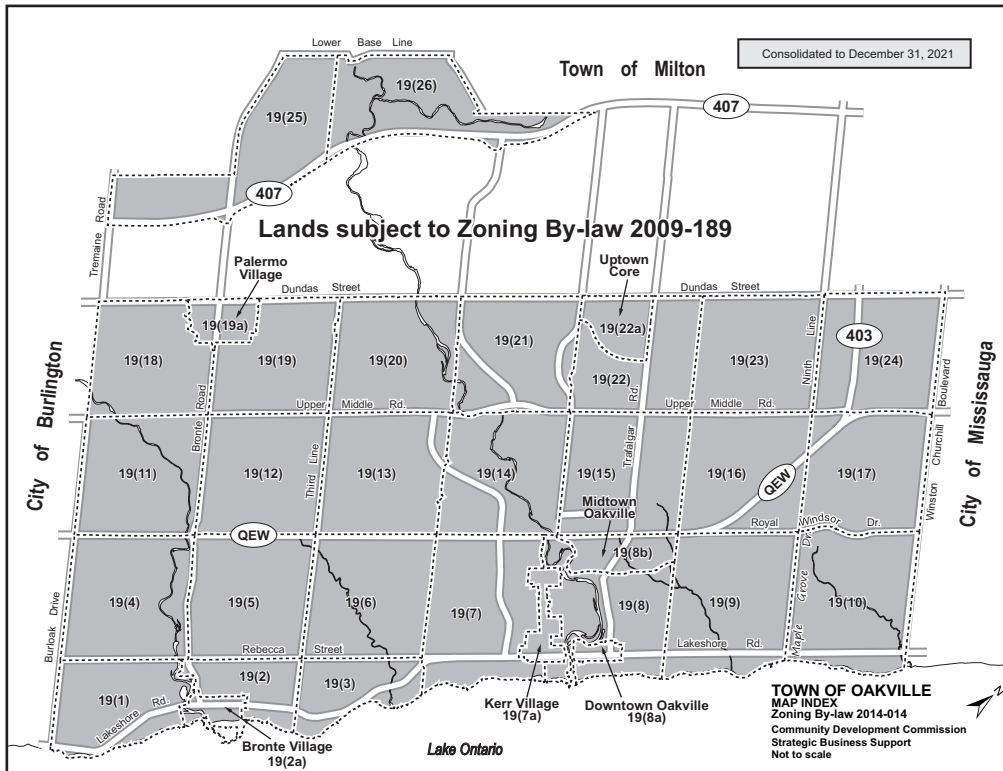


Figure 9. Town of Oakville Zoning By-Law 2014-014 Map Index

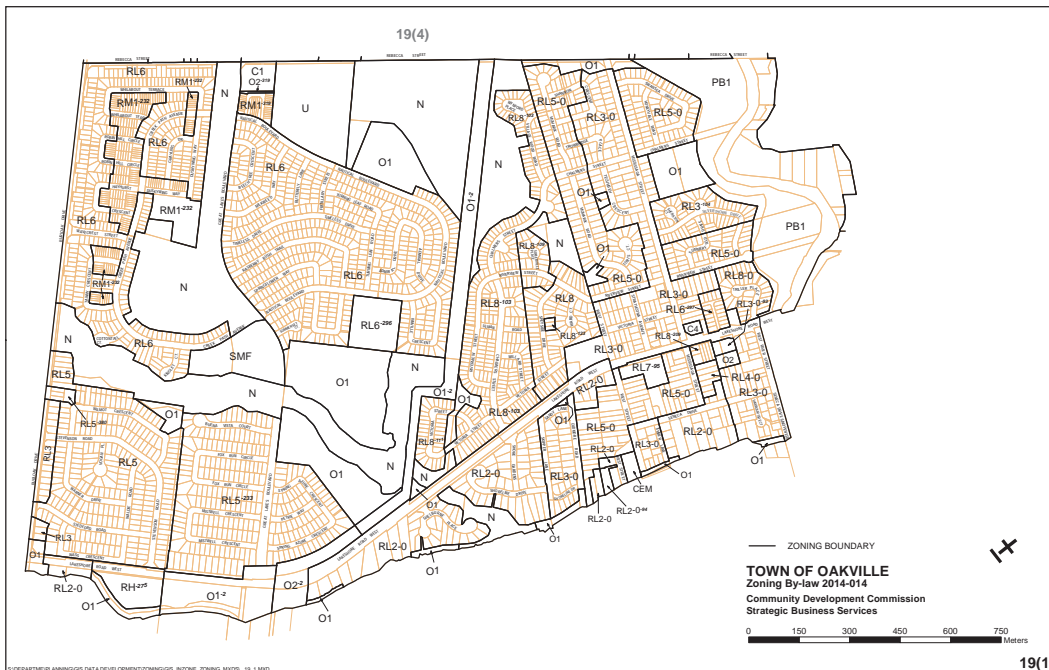


Figure 10. Town of Oakville Zoning By-Law 2014-014 Map 19(1)

Layout and Tools

To improve map content clarity, it is recommended that map elements, including the title, scale bar, legend, and orientation indicator be provided outside the mapping area and grouped in one location. Grouping map elements together (particularly in the bottom corner of the page) will assist users in locating map elements in one convenient location.

A **locator map** can be used to identify the location of a geographic region within its larger context. A **coordinate system** is the spatial reference system that measures and illustrates features on the Earth's surface. The integration of a locator map or coordinate system is recommended as it provides further context and improves the map's overall interpretability.

Major Features and Symbology

Employing a variety of typologies, colours, patterns, and symbols to create compelling structured layers that communicate zoning information in a visually appealing and intuitive manner is critical to the success of the new zoning by-law.

Reference features should include places of interest, waterbodies, major and minor streets, parcel boundaries, and building footprints to improve the map's readability. Intuitive symbology should be used for these features. For example, waterbodies may be identified by blue polygons, whereas building footprints may appear as grey polygons.

A strong visual hierarchy is recommended for the symbology of major and minor streets and parcel boundaries. The most important features should be darker and larger than less important features, such as using different line weights and colour intensities to differentiate between street types. It is recommended that the line weight and intensity of colour for streets be organized hierarchically, from highways to arterial roads, to minor roads and local streets. Parcel boundaries, which are plentiful and highly concentrated in particular areas of the city, should feature light symbols such as a light grey line, in order to not detract from other major features of the map. A similar approach to symbology and the use of visual hierarchy is recommended for boundary lines.

It is recommended that transparent, patterned polygon overlays be used to identify special site-specific zoning regulations, including zoning by-law appeal areas and exemption sites. In doing so, the underlying area's zone class may still be viewed.

For zoning provisions, the use of text annotations is recommended to identify zone codes or classes. Placing the annotations in the centre of a zone area (delineated by a black or dark grey, medium weight line), will ensure that users can easily identify the applicable zone code or class for an area or property. For legibility, it is recommended that capitalized, bolded black text with white outlines be used for the annotation.

It is recommended that zone classes be presented as coloured polygons with varying hue intensities that speak to the relationships between classes (see **Figure 11** and **Figure 12**). The latter will ensure that zones are easily distinguishable from one another while providing insight into the city's development patterns.

Traditionally, zoning regulations pertaining to intensity measures are provided as textual elements on maps. However, this approach is not user-friendly. It is recommended that a new and modern approach to mapping be implemented wherein zoning regulations related to intensity measures be provided as heat maps. Heat maps communicate the magnitude of a phenomenon through variations in colour hue and intensity, and so are well suited to showcasing numerical information with a set range. Building heights can be effectively illustrated through this approach. In associating greater heights with increased colour intensities, the user receives visual cues about how a phenomenon varies over space. For example, the tallest buildings may be identified by a navy blue coloured polygon while the shortest buildings are identified by a very light sky blue coloured polygon. As building heights increase, the colours intensify.

For the key maps and schedules, it is recommended that zone classes and zoning regulations be provided on separate maps to ensure legibility. For the online interactive application, it is recommended that separate map layers be used to communicate zoning regulations. For example, permitted form, intensity, and uses assigned to the various zone areas may be provided on three or more separate maps or map layers.

Map Elements

It is recommended that the following elements be provided: title, scale bar or ratio scale, north arrow, and legend.

Scale

A graphic scale bar is recommended for its clarity and user-friendliness (compared to a ratio scale).

Units

The standard unit of measurement is metres (m). Kilometres (km) may be utilized on city-wide maps.

Orientation

Key maps and schedules should be oriented in a manner that is best suited to the municipality's or exhibited area's geographic shape. It is important that all map elements be rotated to the same degree for consistency (see **Figures 9 to 12**).

Colour Scheme

To ensure that the key maps and schedules are visually appealing, legible, and engaging, a full colour scheme is recommended (rather than the existing greyscale colour scheme). A full colour scheme enables greater variability in the symbology of major features, allowing for clear and concise communication (see **Figure 12**).

Other

To improve interpretability, it is recommended that the map include the zoning by-law's enactment and approval date.

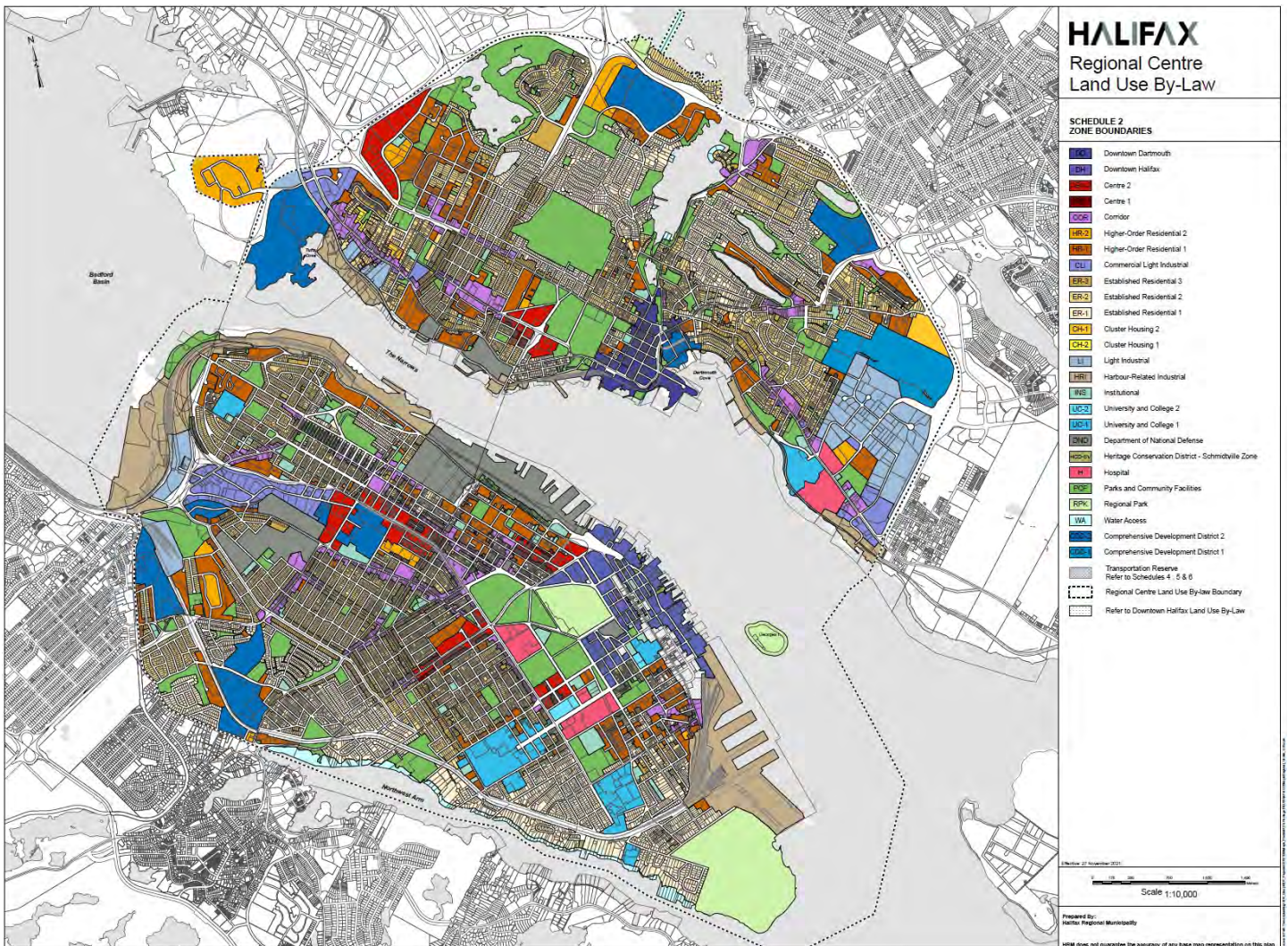


Figure 11. City of Halifax Regional Centre Land Use By-Law Schedule 2 - Zone Boundaries

Zoning By-law 001- 2021

Schedule A | Map 16

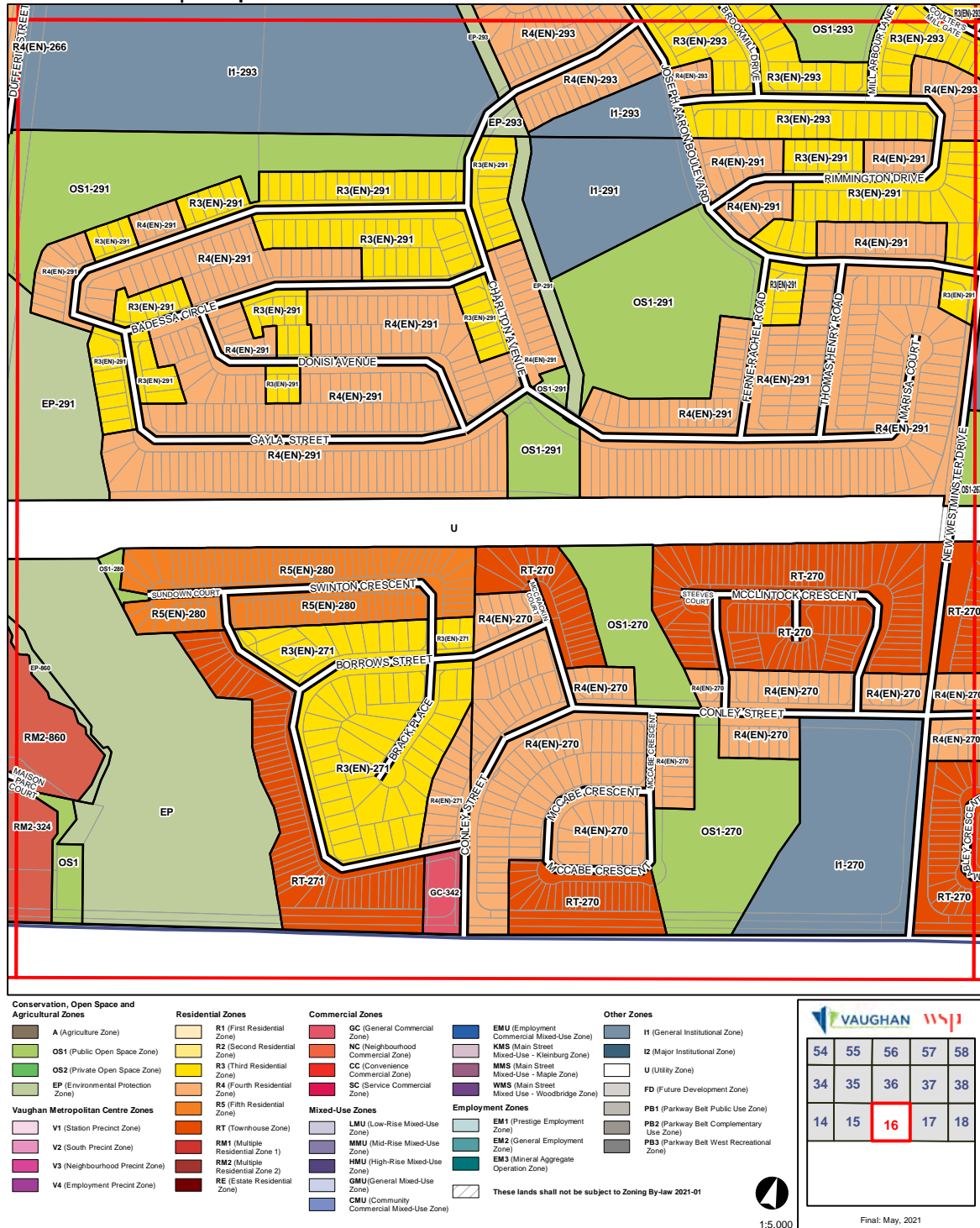


Figure 12. City of Vaughan Zoning By-Law 001-2021 Schedule A - Map 16

4.3.2 Online Interactive Map Recommendations

Various innovative approaches may be pursued to improve the zoning by-law's geospatial components and the user-friendliness of the online portal. Such approaches seek to enhance data and information accessibility and increase public engagement in planning matters. Further, the proposed approaches offer the opportunity to present all rules for development in an engaging way, in one convenient location. To ensure that the zoning by-law's online interactive application is accessible, visually compelling, and easy to interpret, the following approaches and implementation strategies are recommended.

Access

It is recommended that the new zoning by-law's online interactive application be accessed through the City of London's website, from the same webpage as the online version of the current zoning by-law.

Structure

Instructions on how to use the zoning by-law's online interactive application should be provided, either within the application itself or on the webpage (e.g., via a hyperlink to the application). Alternatively, instructions may be provided in the form of a tutorial video or "Take A Tour" feature. The purpose of the instructions is to demonstrate how to use the different functionalities of the interactive application and how to get the most out of the data. This will aid in making the zoning by-law more accessible, particularly for those who may be uncomfortable navigating new technology.

It is also recommended that a disclaimer or terms of use agreement be provided prior to launching the online interactive application. For liability purposes, it is recommended that users of the application be required to acknowledge the disclaimer and agree to the application's terms of use prior to accessing it.

Layout and Tools

Providing the title of the map at the top of the page and scale bar or ratio scale in the bottom-left corner is standard practice for online interactive mapping applications. This approach is recommended for the new zoning by-law. It is recommended that the legend be placed along the left or right edge of the page. (see **Figure 13**)

It is recommended that the following interactive tools be supported by the application:

- Zoom-In/Zoom-Out;
- Search;
- Identify;
- Help/About;
- My Location;
- Basemap Gallery;
- Layers/Layer List;
- Legend;
- Measurement; and
- Print.



Figure 13. City of Laval Online, Interactive Application

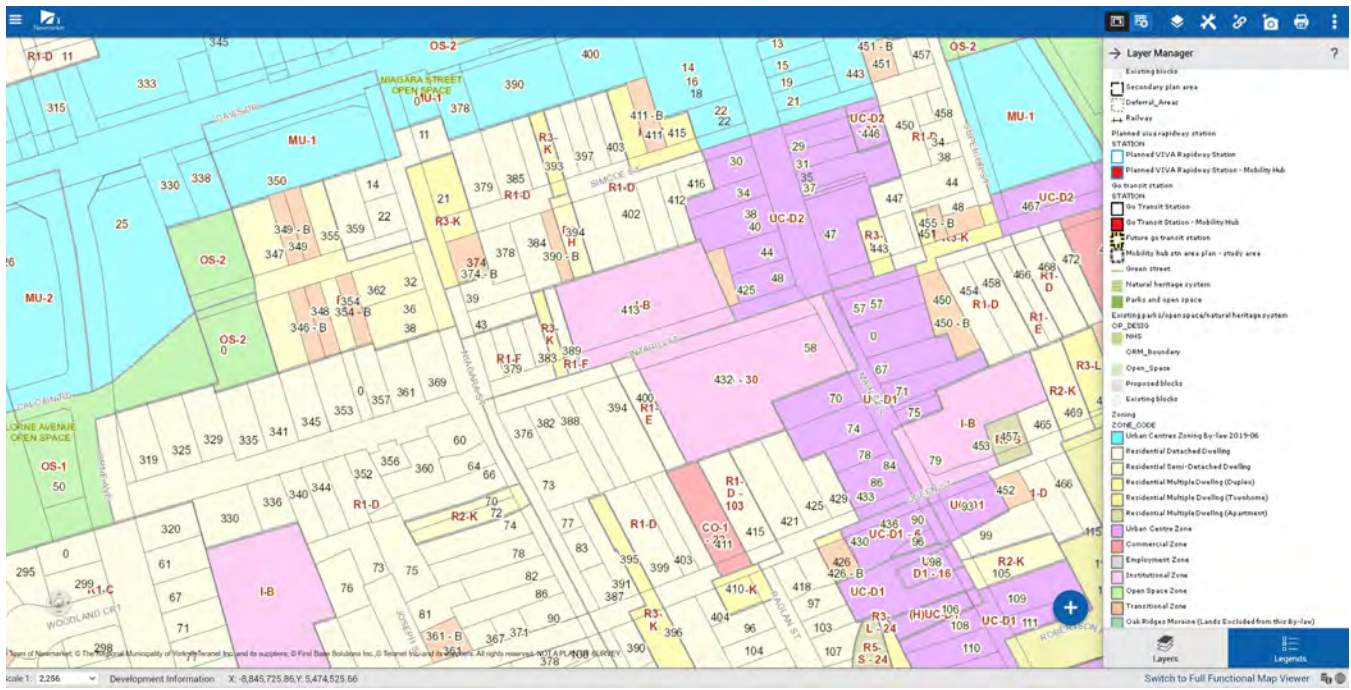


Figure 14. Town of Newmarket Online, Interactive Application

For ease of access, it is recommended that the tools be clustered together, either in the top-left or top-right corner of the application.

Major Features and Symbology

See the recommendations for key maps and schedules pertaining to the symbology of major features ([Section 4.3.1](#)).

Ensuring that a user can toggle on and off each layer within the online, interactive application improves the application's effectiveness at communicating geospatial information. This feature permits users to control which information is displayed on the map at a given time, enabling better legibility. This provides a degree of customization to the online interactive application experience, which in turn makes the application more engaging. Further, this capability would provide users with an opportunity to investigate relationships between features with the click of a button (rather than looking back and forth between two printed maps).

Map Elements

It is recommended that the following elements be provided: title, scale bar or ratio scale, north arrow, and legend.

Scale

A graphic scale bar is recommended as this is more readily understood and conceptualized than a ratio scale.

Units

The standard unit of measurement is metres (m). It is recommended that this measure be used on the online interactive application.

Colour Scheme

To make the online interactive application as visually appealing and engaging as possible, the use of a full colour scheme is recommended. A full colour scheme enables greater variability in the symbology of major features, allowing for clear and concise communication (see **Figure 14** and **Figure 15**).

Other

To improve the map's effectiveness and interpretability, it is recommended that the zoning by-law's enactment and approval date be provided within the online interactive application. This information should be included within the disclaimer.

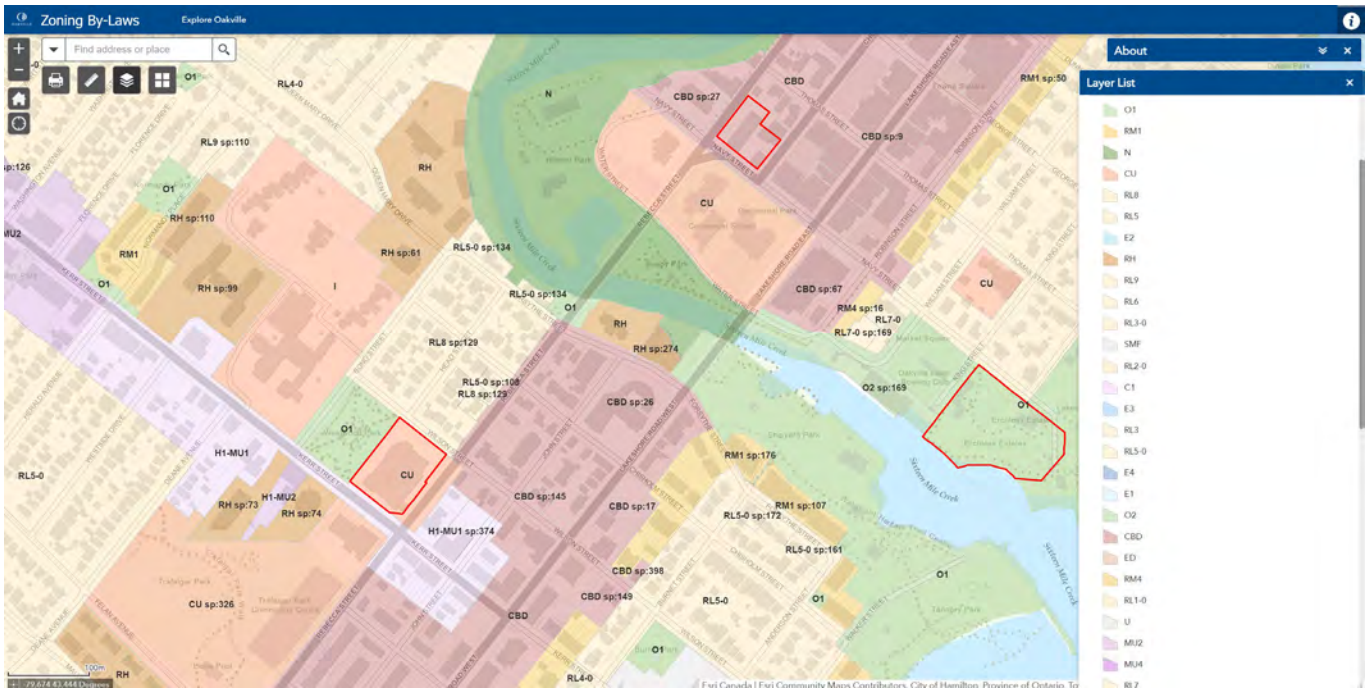


Figure 15. Town of Oakville Online, Interactive Application

5.0 CONCLUSION AND NEXT STEPS

The new zoning by-law will implement *The London Plan*, which provides the policy framework for how the City will manage growth and change over a 20-year horizon. This framework provides direction for how London will develop different geographic areas throughout the city (LP 747). The City of London takes a different approach by planning for a specific type of place, known as a Place Type, which seeks to plan highly functional, connected, and desirable places (LP 748). The new zoning by-law can support the realization of this vision by considering policies that establish the uses, intensities, and forms intended within each Place Type.

ReThink Zoning provides an opportunity to revisit traditional zoning approaches with a new lens – one that critically addresses London’s challenges for building more connected, complete communities. By conducting a review of contemporary zoning by-laws in the Ontario and Canadian context, we can better understand the best practices available to London for the development and implementation of its new zoning by-law.

The following summary identifies key findings and recommendations regarding next steps for implementation.

A zoning by-law that balances flexibility with certainty: The new zoning by-law must meet all requirements of the *Planning Act* and implement the directions of *The London Plan*. Euclidean or traditional zoning systems are typically effective in preventing unwanted development but do not always do a great job of promoting the most desirable form of development. The new zoning by-law will transition to a more form-based approach in order to implement *The London Plan*’s Place Type policies. There is an opportunity to place more emphasis on placemaking, as physical form emerges as a prominent principle in the zoning by-law. Ongoing discussions with City Staff from the Legal Department and Clerks Office will be critical to ensuring that legal requirements are considered throughout all stages of the ReThink Zoning process.

Ease and convenience: Integrated features such as a clear and consistent template to convenience features will allow for easy cross-referencing throughout the zoning by-law. By striking the “right” balance between text-based content and visual components, the new zoning by-law will make it easier for users to interpret its purpose, rules, and intended outcomes.

AODA compliant: The new zoning by-law will meet the requirements of the Accessibility for Ontarians with Disabilities Act (AODA). All deliverables informing the zoning by-law must be submitted in AODA compliant formats that are compatible with municipal programs, systems, and software. The Consultant Team will work closely with City Staff to ensure that municipal accessibility standards are met.

Simplifying and streamlining: Most contemporary zoning by-laws are shifting towards a streamlined approach that leverages structural features, formatting, and visual elements to communicate information in a clear manner. Other key trends include reducing the number of zoning classes and categories, and adopting a plain language approach.

Technology as a tool: The new zoning by-law will leverage modern geospatial technology to ensure that the zoning by-law’s key maps and schedules and online interactive application effectively communicate zoning regulations in a comprehensive, intuitive, and compelling way. Technology provides an opportunity for users to engage with the zoning by-law and visualize technical regulations and provisions. Moving forward, technology will play a key role in ReThink Zoning’s inventory and analysis of approved developments. Existing land uses, intensities, and forms will be reviewed, and development patterns that do not conform to *The London Plan* will be identified using geospatial technology. Findings from the development inventory and best practices review, in addition to ongoing discussions with City of London Geomatics Staff, will inform the preparation of the new zoning by-law’s key maps and schedules (including layers for the online interactive application).

A user-focused approach: Stakeholder engagement will play a critical role in consulting with different user groups (e.g., staff, industry, community stakeholders, and the general public). A virtual project re-launch and public event will inform the general public on the purpose and scope of a zoning by-law. It will also communicate how zoning by-laws can influence issues such as housing affordability, climate change, and intensification. Two working groups (industry and community stakeholders) will also be established to serve as sounding boards and allow for ongoing engagement during key milestones throughout the ReThink Zoning process. Part of this engagement will be to understand challenges that the planning and development community encounter with Z.-1, and to identify opportunities for improvement. Throughout all stages of the project, the Consultant Team will leverage different methods and tactics for engagement (digital and in-person), while providing clear and transparent communication (e.g., on feedback received and next steps).

Providing staff with the necessary tools: The ReThink Zoning Consultant Team will develop Staff Guidelines to support the transition and implementation of the new zoning by-law. The Staff Guidelines will outline the purpose of the Guidelines and how to use them, including key provisions, a glossary of terms, maps, and graphics. The Guidelines are intended to make it easier for staff to interpret and implement the zoning by-law and to advise users on its use and interpretation.



Source: The London Plan

6.0 REFERENCES

City of London (2020). Report to Planning and Environment Committee: ReThink Zoning Update (November 30, 2020).

CNU (2022). What is new urbanism. Retrieved from <https://www.cnu.org/resources/what-new-urbanism>

Dyett, Michael V. (2014). Approaches to Zoning. Retrieved from <https://nebula.wsimg.com>

Evans, Quindal C. (2009). Bradley: Understanding a Modern Zoning Trend. Retrieved from: <https://www.bradley.com/-/media/files/insights/publications/2003/10/understanding-a-modern-zoning-trend/files/ftd0910evans/fileattachment/ftd0910evans.pdf>

Form-Based Codes Institute at Smart Growth America (2022). Form-based Codes Defined. Retrieved from <https://formbasedcodes.org/definition/>.

Form-Based Codes Institute (2013). Form-Based Codes: A Step-by-Step Guide for Communities. Chicago Metropolitan Agency for Planning. Retrieved from <https://formbasedcodes.org/wp-content/uploads/2013/11/CMAP-GuideforCommunities.pdf>

Mazerolle, Louis (2022). Form Based Code: L'Atelier Urbain. Canadian Institute of Planners. Michigan Association of Planning. (2007). Form based codes: New approach to zoning. Smart Growth Tactics: Putting the MLULC recommendations into action – A how to series for local leaders. Retrieved from https://www.mml.org/pdf/map_article_issue28.pdf

Opticos Design, Inc. (2014). Cincinnati form-based code. Retrieved from http://formbasedcodes.org/content/uploads/2014/07/Cincinnati-Form-Based-Code_FinalDraft_Web.pdf

Perez, Tony (2014). Misconceptions about form-based code. Form Based Codes Institute. Retrieved from <http://formbasedcodes.org/articles/misconceptions-form-based-codes>

PlaceMakers, LLC (2015). The Codes Study. Retrieved from <http://www.placemakers.com/how-we-teach/code-score-impacts-of-form-based-codes/>

Rempel, Lea (2015). Case-in-Point: Form-based code: A road to diverse, mixed use urban environments. University of Manitoba. Retrieved from https://umanitoba.ca/faculties/architecture/media/CP_cip2015_Rempel.pdf

Schneider, Benjamin (2019). CityLab University: Zoning Codes. Bloomberg. Retrieved from <https://www.bloomberg.com/news/articles/2019-08-06/how-to-understand-municipal-zoning-codes>.

Strungys, Arista (2008). The Five Steps to a Hybrid Code. Retrieved from <https://planning-org-uploaded-media.s3.amazonaws.com/document/Zoning-Practice-2008-05.pdf>

APPENDICES

**Appendix A. Zoning By-Law No. Z.-1,
Table of Contents**

Disclaimer

Section 1 – Administration/Enforcement and Interpretation

- Short Title
- Compliance with Zoning By-Law
- Non-Conforming Uses
- Enforcement
- Compliance with Other Restrictions
- Severability Provisions
- Gender and Number
- Use and Occupy
- Measurements
- Examples and Illustrations
- Repeal of Existing By-laws
- Effective Date

Section 2 – Definitions

Section 3 – Zones and Symbols

- Establishment of Zones
- Schedules and Tables
- Zone Symbols and Provisions
- Density “D”
- Private Road “PR”
- Height “H”
- Bonusing “B”
- Holding “h” Zones
- Compound Zones and Multiple Zones
- Determining Zone Boundaries
- Map Details
- Interpretation of Use

Section 4 – General Provisions

- Application of General Provisions
- Accessory Uses
- Access Regulations
- Heritage Building Designation Bonus – Floor Area and Dwelling Unit Density Bonus
- Building Additions
- Temporary Structures
- Construction Use
- Model Homes
- Dwelling Units
- Foster Homes

- Group Homes
- Height Exemption
- Home Occupation
- Household Sales
- Landscaped Open Space
- Loading Space Requirements
- Lots Reduced by Public Acquisition
- Municipal Services Requirements
- Existing Uses Continued
- Open Storage
- Outdoor Patio Associated with a Restaurant
- Parking
- Public Uses
- Road Allowance Requirements – Specific Roads
- Lodging Houses
- Setback/Front Yard Exemption in Built-Up Residential Areas
- Sight Triangle
- Swimming Pools
- Uses Permitted in Listed Zones
- Yard Encroachments Permitted
- Yard Requirements Adjacent to Streets Greater Than 40.0 metres
- Yard Requirements, Exterior Side Yard Condition
- Yard Requirement, Rear Yard to Arterial Road
- Ancillary Sale of Automobiles
- Minimum Distance Separation (MDS)
- Setback Requirements Adjacent to Oil and Gas Wells
- Minimum Setbacks required for development adjacent to Railway Lines on lands annexed to City on January 1, 1993
- Drive-Through Facilities
- Clinic, Methadone and Pharmacy, Methadone
- Secondary Dwelling Units

Section 5 – Residential R1 Zone

Section 6 – Residential R2 Zone

Section 7 – Residential R3 Zone

Section 8 – Residential R4 Zone

Section 9 – Residential R5 Zone

Section 10 – Residential R6 Zone

Section 11 – Residential R7 Zone

Section 12 – Residential R8 Zone

Section 13 – Residential R9 Zone

Section 14 – Residential R10 Zone

Section 15 – Residential R11 Zone

Section 16 – Office Residential (OR) Zone

Section 17 – Office Conversion (OC) Zone

Section 18 – Restricted Office (RO) Zone

Section 19 – Office (OF) Zone

Section 20 – Downtown Area (DA) Zone

Section 21 – Regional Shopping Area (RSA) Zone

Section 22 – Community Shopping Area (CSA) Zone

Section 23 – Neighbourhood Shopping Area (NSA) Zone

Section 24 – Associated Shopping Area Commercial (ASA) Zone

Section 25 – Business District Commercial (BDC) Zone

Section 26 – Arterial Commercial (AC) Zone

Section 27 – Highway Service Commercial (HS) Zone

Section 28 – Restricted Service Commercial (RSC) Zone

Section 29 – Convenience Commercial (CC) Zone

Section 30 – Automobile Service Station (SS) Zone

Section 31 – Regional Facility (RF) Zone

Section 32 – Community Facility (CF) Zone

- Section 33 – Neighbourhood Facility (NF) Zone
- Section 34 – Heritage (HER) Zone
- Section 35 – Day Care (DC) Zone
- Section 36 – Open Space (OS) Zone
- Section 37 – Environmental Review (ER) Zone
- Section 38 – Commercial Recreation (CR) Zone
- Section 39 – Office Business Park (OB) Zone
- Section 40 – Light Industrial (LI) Zone
- Section 41 – General Industrial (GI) Zone
- Section 42 – Heavy Industrial (HI) Zone
- Section 43 – Resource Extraction (EX) Zone
- Section 44 – Rail Transportation (RT) Zone
- Section 45 – Agricultural (AG) Zone
- Section 46 – Agricultural Commercial (AGC) Zone
- Section 47 – Rural Settlement Commercial Uses (RRC) Zone
- Section 48 – Temporary Garden Suite (TGS) Zone
- Section 49 – Urban Reserve (UR) Zone
- Section 50 – Temporary (T) Zone
- Section 51 – Waste & Resource Management (WRM) Zone (Z.-1-091842)

Metric Conversion Table:

Schedule “A” – Key Maps (Zoning Designations)

Schedule “B” – Key Maps (Parking)

Appendix B. Zone Class, Symbol, and Name

Table B1. Zoning By-Law No. Z.-1 – Zone Class, Symbol, and Name

Zoning By-Law No. Z.-1 – Zone Class, Symbol, and Name		
Class	Symbol	Name
RESIDENTIAL	R1	Residential R1 Zone
	R2	Residential R2 Zone
	R3	Residential R3 Zone
	R4	Residential R4 Zone
	R5	Residential R5 Zone
	R6	Residential R6 Zone
	R7	Residential R7 Zone
	R8	Residential R8 Zone
	R9	Residential R9 Zone
	R10	Residential R10 Zone
	R11	Residential R11 Zone
OFFICE	OR	Office Residential Zone
	OC	Office Conversion Zone
	RO	Restricted Office Zone
	OF	Office Zone
COMMERCIAL	DA	Downtown Area Zone
	RSA	Regional Shopping Area Zone
	CSA	Community Shopping Area Zone
	NSA	Neighbourhood Shopping Area Zone
	ASA	Associated Shopping Area Commercial Zone
	BDC	Business District Commercial Zone
	AC	Arterial Commercial Zone
	HS	Highway Service Commercial Zone
	RSC	Restricted Service Commercial Zone
	CC	Convenience Commercial Zone
	SS	Automobile Service Station Zone
INSTITUTIONAL FACILITIES	RF	Regional Facility Zone
	CF	Community Facility Zone
	NF	Neighbourhood Facility Zone
	HER	Heritage Zone
	DC	Day Care Zone
OPEN SPACE AND RECREATION	OS	Open Space Zone
	ER	Environmental Review Zone (Z.-1-051390)
	CR	Commercial Recreation Zone

Table B1. Zoning By-Law No. Z.-1 – Zone Class, Symbol, and Name (cont'd)

INDUSTRIAL	OB LI GI HI EX RT	Office Business Park Zone Light Industrial Zone General Industrial Zone Heavy Industrial Zone Resource Extraction Zone Rail Transportation Zone (Z.1-051390)
AGRICULTURAL (Z.1-051390)	AG AGC RRC TGS	Agricultural Zone (Z.1-051390) Agricultural Commercial Zone (Z.1-051390) Rural Settlement Commercial Zone (Z.1-051390) TGS Temporary Garden Suite Zone (Z.1-051390)
MISCELLANEOUS	UR T	Urban Reserve Zone Temporary Zone

Appendix C. Summary of Best Practices Review – Structure and Format Features

Table C1. Summary of Best Practices Review – Structure and Format Features

Summary of Best Practices Review – Structure and Format Features			
Municipality / Zoning By-Law	Structure	Format	Summary
Ontario Municipalities			
<p>Town of Newmarket <i>Urban Centres Zoning By-Law 2019-06</i></p> <p>Status: Approved in June 2019 (LPAT)</p>	<ul style="list-style-type: none"> • Preamble (non-statutory); • Organized by Sections (9); • Includes Schedules (6) and Mapping; • Separate sections for General Provisions, Parking, Loading, Queuing, Zone Provisions (3 zones: Mixed Use, Institutional, and Open Space), Site-Specific Provisions, etc.; and • Total of 144 pages. 	<ul style="list-style-type: none"> • Convenience features (hyperlinked table of contents); • Illustrations and diagrams used in Section 3 (Definitions) and Section 6 (Zone Provisions); • Tables and charts used throughout to organize provisions, standards, etc.; and • Use of Overlay Zones (for site specific provisions, holding provisions, temporary use zones, and interim control zones). 	<ul style="list-style-type: none"> • Zoning by-law implements the Town’s Urban Centres Secondary Plan through an area-specific zoning by-law; • Minimal zoning categories; and • Graphically oriented zoning by-law (use of illustrations and mapping overlays).
<p>Town of Oakville <i>Zoning By-Law 2014-014 (south of Dundas Street and north of Highway 407)</i></p> <p>Status: Passed by Council in February 2014, partially deemed in-force February 2015 (OMB), certain sections not yet in-force</p>	<ul style="list-style-type: none"> • Disclaimer included; • User Guide (non-statutory); • Organized by Parts (20) (including maps); • Includes Appendices (3); • Separate sections for General Provisions, Parking, Loading, Stacking Lane Provisions, Special Provisions, Holding Provisions, etc.; • Zoning categories (9 total); and • Total of 640 pages. 	<ul style="list-style-type: none"> • Individual parts and complete text available online; • User Guide intended to make the zoning by-law easier to understand and reference, and outlines how to use the by-law to find basic zoning information; • Use of colour in the User Guide mapping (described in Section 4 of this paper); and • Tables and charts to organize definitions, standards, permitted uses, special provisions, etc. 	<ul style="list-style-type: none"> • Zoning by-law replaced previous 1984 zoning by-law (zone categories removed and consolidated to create a more streamlined and user-friendly document); • Minimal zoning categories; • Graphically oriented (use of 2D and 3D illustrations and diagrams); • Good use of charts and matrices to allow for cross-referencing and organization of regulations and standards; and • Definition index provided for quick reference, followed by a list of definitions.

Table C1. Summary of Best Practices Review – Structure and Format Features (cont'd)

<p>City of Vaughan <i>By-law No. 001-2021</i></p> <p>Enacted by City Council on October 20, 2021</p>	<ul style="list-style-type: none"> Organized by Sections (15); Separate sections for General Provisions, Specific Use Provisions, Parking, and Stacking and Loading Requirements; Zoning categories (7 total); Site-specific zoning exceptions are made up of various schedules in the by-law: <ul style="list-style-type: none"> D-Schedule – mandatory part of the exception. E-Schedule – map showing the lands where the site-specific exemption applies to. T-Schedule – additional zoning standards that apply to the lands. Total of 151 pages. 	<ul style="list-style-type: none"> Tables and charts used to organize definitions, standards, permitted uses, special provisions, etc.; Use of colour for different zone categories; Use of colour in illustrations (non-statutory); and No hyperlinked table of contents. 	<ul style="list-style-type: none"> Replaced the previous 1988 zoning by-law; Minimal zoning categories; Graphically oriented zoning by-law (use of 2D and 3D illustrations, diagrams, and colours for each zone category); Good use of charts and matrices to allow for cross-referencing and organization of regulations and standards; Definition index provided for quick reference, followed by a list of definitions; Bold visual contrast in tables; and A description of site-specific zoning exceptions is provided on the project webpage (in zoning by-law and additional schedules).
<p>City of Markham</p> <p>Comprehensive Zoning By-Law Review – June 2021 DRAFT</p>	<ul style="list-style-type: none"> Final draft of the zoning by-law; Organized by Parts (13); Separate sections for General Provisions, Parking and Loading Standards, and Exceptions; Zone categories (7 total); and Total of 202 pages. 	<ul style="list-style-type: none"> Use of coloured text (blue and green) in Part headings and subheadings; Use of coloured mapping (Part 1); Uses wide white margins; Hyperlinks to the <i>Planning Act</i>; Tables and charts to organize definitions, standards, permitted uses, special provisions, etc.; and Use of photos for different building types for each zone (Permitted Uses and Zone Standards). 	<ul style="list-style-type: none"> Streamlining and consolidation of 46 parent by-laws enacted between 1954 and 2004; Minimal zoning categories; and Good use of charts and diagrams to organize regulations and standards.

Table C1. Summary of Best Practices Review – Structure and Format Features (cont'd)

Out-of-Province Municipalities			
<p>City of Halifax, Nova Scotia</p> <p><i>Regional Centre Land Use By-law</i></p>	<ul style="list-style-type: none"> Organized by Parts (17) with individual chapters; Appendices (4) and Schedules included; Includes sections on design and form (such as Built Form and Siting Requirements (for different zones), General Design Requirements, and Landscaping); Includes a section on Incentive, or Bonus Zoning; Definitions included near the end of the zoning by-law (vs. upfront) (numbered, 287 total); Includes Schedules (51); and Total of 352 pages. 	<ul style="list-style-type: none"> Convenience features (hyperlinked table of contents); Tables and charts to organize definitions, standards, permitted uses, special provisions, etc.; Use of colour in illustrations (non-statutory); and Maps for the zoning by-law are listed separately online (and can be viewed individually). 	<ul style="list-style-type: none"> Includes general requirements for view planes, sight lines, and waterfront view corridors; and Includes many specific maps (schedules). Critiques: Use of roman numerals impractical from a user-friendly standpoint (due to high number of parts), subsections not numbered (may pose difficulties referencing sections).
<p>Ville de Laval / City of Laval Quebec</p> <p><i>Projet de règlement CDU- 1</i></p>	<ul style="list-style-type: none"> Organized by Titles (10) (under each Title are Chapters and Sections); Separate sections for General Development Provisions, Land uses, Transect Zones, and Special Areas; Administration and procedures included near the end of the zoning by-law; and Maps for the zoning by-law listed separately online (viewed individually). 	<ul style="list-style-type: none"> Convenience features included (hyperlinked table of contents); Tables and charts to organize definitions, standards, permitted uses, special provisions, etc.; Use of colour in illustrations (non-statutory); and Maps listed separately online (and can be viewed individually). 	<ul style="list-style-type: none"> Comprehensive Plan (no Official Plan) – Replaces former L-2000 by-law adopted in 1970, modified 3,760 times, 3,500 zones; and Inspired by a form-based code approach based on ideology of new urbanism, while taking to account the development issues specific to Laval.

Appendix D. Best Practices Review – Key Maps and Schedules

Table D1. Best Practices Review – Key Maps and Schedules

Best Practices Review – Key Maps and Schedules		
	Town of Newmarket, Ontario Urban Centres Zoning By-Law 2019-06 Enacted by Council on September 24, 2018 Approved by LPAT on June 10, 2019 (PL180854)	City of Vaughan, Ontario Zoning By-Law 001-2021 Enacted by Council on October 20, 2021
Zoning By-Law Type	Traditional	Traditional
Location and Access	Included as part of the zoning by-law, which may be viewed in print or accessed online through the Town of Newmarket's website .	Included as part of the zoning by-law, which may be viewed in print or accessed online through the City of Vaughan's website .
Structure	<ul style="list-style-type: none"> • Schedule "A" (Maps 1 – 6)*: Zoning; • Schedule "B" (Maps 7 – 12)*: Heights; • Schedule "C" (Maps 13 – 18)*: Holding Zones; • Schedule "D": Priority Commercial Areas; • Schedule "E": Floodplain and Other Natural Hazards; and • Schedule "F": Parking Reduction Areas. <p><i>*The first page of Schedules "A," "B," and "C" is an index map, which uses a thick, solid black line to delineate the boundaries of each subsequent key map included within the schedule.</i></p>	<ul style="list-style-type: none"> • Schedule A: Zoning; • Schedule B-1: Vaughan Metropolitan Centre – Special Provisions; • Schedule B-2: Wellhead Protection Areas; • Schedule B-3: Woodbridge Special Policy Areas; • Schedule B-4: Lands Subject to Minister Zoning Orders; • Schedule B-5: TransCanada Pipeline and Facilities; and • Schedule B-6: Oak Ridges Moraine Land Use. <p><i>*The first page of Schedules A is an index map, which uses a solid red line to delineate the boundaries of each subsequent key map included within the schedule.</i></p>
Layout and Tools (if applicable)	Title located in the top-left corner; north arrow in the bottom-left corner; scale bar in the bottom-right corner. All maps have a portrait orientation.	Title located in the top-left corner; legend in the bottom-left corner; north arrow, scale bar, and locator map (if present) in the bottom-right corner. Maps are in portrait or landscape orientation.

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Major Features and Symbology</p>	<p>Reference Features (included on all maps):</p> <ul style="list-style-type: none"> • Major Streets: medium grey text annotations; • Parcel Boundaries: light grey lines; • Key Map Boundaries: thick, solid black lines. <i>*Note: this feature is not included on Schedule “F.”; and</i> • Lands in Secondary Plan Area (Subject to By-Law 2010-40): grey and white diagonal hatched pattern. <i>*Note: this feature does not appear on several key maps due to their limited geographic extent.</i> <p>Schedule “A” (Maps 1 – 6): Zoning</p> <ul style="list-style-type: none"> • Zone Boundaries: solid black lines that overlay all other features of the map; and • Zone Codes: towards the centre of each zone area, black capitalized text is present. <p>Schedule “B” (Maps 7 – 12): Heights</p> <ul style="list-style-type: none"> • Height Provision Area Boundaries: solid black lines that overlay all other features of the map; and • Height Provisions: towards the centre of each height provision area, bold black text identifies the minimum and maximum height regulations for the area. <p>Schedule “C” (Maps 13 – 18): Holding Zones</p> <ul style="list-style-type: none"> • Holding Zone Boundaries: thick grey lines that overlay all other features of the map; • Proposed Roads: medium grey hashed line; and • Proposed Parks and Open Spaces: grey dotted pattern on a white background. <p>Schedule “D”: Priority Commercial Areas</p> <ul style="list-style-type: none"> • Priority Commercial Property Frontages: medium, solid black line that overlays all other features of the map except for the key map boundaries. <p>Schedule “E”: Floodplain and Other Natural Hazards</p> <ul style="list-style-type: none"> • Floodplain and Other Natural Hazards: grey dotted pattern on a white background. <p>Schedule “F”: Parking Reduction Areas</p> <ul style="list-style-type: none"> • Parking Reduction Areas: solid grey polygons. 	<p>Reference Features (included on the zone maps):</p> <ul style="list-style-type: none"> • Highways and Major Streets: thick, white lines with black text annotations; • Parcel Boundaries: light grey lines; and • Key Map Boundaries: solid red lines. <p>Schedule A: Zoning</p> <p>Each of the City of Vaughan’s 40 zone codes have a unique symbology, comprised of a coloured polygon with a black outline. Varying hue intensities are used to symbolize zone codes within the same class (i.e., employment zone areas are varying intensities of turquoise, mixed-use zone areas are varying intensities and shades of purple, residential zone areas are varying intensities and shades of yellow and orange...).</p> <ul style="list-style-type: none"> • Zone Boundaries: solid black lines that overlay all other features of the map; • Zone Codes: towards the centre of each zone area, black capitalized text is present; and • Lands Not Subject to Zoning By-Law 2021-01: white polygon with light grey hash marks and a black border. <p>Schedule B-1: Vaughan Metropolitan Centre – Special Provisions</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: thick, yellow lines with a light grey outline and black text annotations; • Minor Streets: thick, medium grey lines with black text annotations; • Parcel Boundaries: light grey lines; and • Office Uses Required: orange polygons with a grey outline;
--	--	--

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Major Features and Symbology (cont'd)</p>		<p>(Schedule B-1: Vaughan Metropolitan Centre – Special Provisions)</p> <ul style="list-style-type: none"> • Office Uses Permitted in the VMC Neighbourhood (V3) Zone: yellow polygons with a grey outline; • Active Use Frontage (Convertible): thick, medium blue line; and • Active Use Frontage (Required): thick, dark blue line. <p>Schedule B-2: Wellhead Protection Areas</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: black lines with black text annotations; • Minor Streets: light grey lines; and • Wellhead Protection Areas: Active Wellhead 100 m Radius (black polygon), Area 1 (orange polygon), Area 2 (magenta polygon), Area 3 (plum polygon). <p>Schedule B-3: Woodbridge Special Policy Areas</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: black lines with black text annotations; • Minor Streets: light grey lines; and • Woodbridge Special Policy Area: red polygon with a black outline. <p>Schedule B-4: Lands Subject to Minister Zoning Orders</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: dark green lines with black text annotations; • Minor Streets: light grey lines; • Minister’s Zoning Order: dark grey, black, and white hashed polygon with a thick, black border; • Minister’s Order: grey, black, and white hashed polygon with a thick, grey border; and • Lands Subject to Stayed Appeals by the Minister of Urban Affairs and Housing: white polygon with cross-hatched black line pattern and a thin, black border.
---	--	---

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Major Features and Symbology (cont'd)</p>		<p>Schedule B-5: TransCanada Pipeline and Facilities</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: thick, yellow lines with a light grey outline and black text annotations; • Minor Streets: thin, black lines; and • TransCanada Pipeline and Facilities: thick, red line. <p>Schedule B-6: Oak Ridges Moraine Land Use</p> <ul style="list-style-type: none"> • Highways: thick, yellow lines with a light grey outline and black text annotations; • Major Streets: dark green lines with black text annotations; • Minor Streets: light grey lines; • Oak Ridges Moraine Settlement Area: turquoise polygons; • Oak Ridges Moraine Natural Core Area: olive green polygons; • Oak Ridges Moraine Natural Linkage Area: light green polygons; and • Oak Ridges Moraine Countryside: yellow polygons.
<p>Map Elements</p>	<p>Title, North Arrow, and Scale Bar.</p> <p>Legends are provided for the maps of Schedules “C,” “D,” “E,” and “F.”</p>	<p>Title, North Arrow, Ratio Scale or Scale Bar, and Legend.</p>
<p>Scale</p>	<p>Graphic Scale Bar.</p>	<p>Graphic Scale Bar or Ratio Scale (Zoning Maps).</p>
<p>Units</p>	<p>Metres.</p>	<p>Metres.</p>
<p>Orientation</p>	<p>Portrait.</p>	<p>Varied (Portrait and Landscape).</p>
<p>Colour Scheme</p>	<p>Greyscale.</p>	<p>Full Colour.</p>
<p>Other Considerations</p>	<p>Descriptive text is used in place of a legend on several index and key maps. The following text is included beneath each map: <i>“Hatched areas indicate lands in Secondary Plan area subject to By-law 2010-40.”</i></p>	<p>Locator maps are provided on several schedules for reference.</p>

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Other Considerations (cont'd)</p>	<p>All index maps display the same geographic extent.</p> <p>In some instances, black text is placed over the black outline, affecting the map's legibility.</p> <p>Text annotations vary in size despite maps having the same scale.</p>	
---	---	--

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

	<p>Town of Oakville, Ontario Zoning By-Law 2014-014</p> <p><i>There are currently three comprehensive zoning by-laws in effect in the Town of Oakville. For the purposes of the best practices analysis, the key maps and schedules of Zoning By-Law 2014-014, the Town's most recently enacted zoning by-law, are reviewed.</i></p>	<p>City of Markham, Ontario Zoning By-Law 12345</p> <p><i>The City of Markham is currently undertaking a comprehensive review of its zoning by-laws and existing zoning framework. Although draft zoning by-law policies of Comprehensive Zoning By-Law 12345 have been published online, draft keys maps and schedules have yet to be released. At this time, the City of Markham directs individuals with interest in the forthcoming key maps and schedules to review draft mapping via an online, interactive application. For the purposes of the best practices analysis, the draft mapping is reviewed.</i></p>
<p>Zoning By-Law Type</p>	<p>Hybrid</p>	<p>Hybrid</p>
<p>Location and Access</p>	<p>Included as part of the zoning by-law, which may be viewed in print or accessed online through the Town of Oakville's website.</p>	<p>Draft mapping may be accessed online through the City of Markham's website.</p>
<p>Structure</p>	<ul style="list-style-type: none"> • Index Map; and • Key Maps (Maps 19(1) – 19(26)) <p><i>*The Index Map uses a thick, solid black line to delineate the boundaries of each subsequent key map included within the schedule.</i></p>	<p>To be determined. Currently, draft mapping can only be accessed online.</p>
<p>Layout and Tools (if applicable)</p>	<p>Title, north arrow, scale bar (if present), legend, and map information located in the bottom-right corner. Maps are in portrait or landscape orientation.</p>	<p>Title, Search, Zoom-In, Zoom-Out, Measurement, Bookmark, Layers, Change Basemap tools and Legend located in the top-left corner; location coordinates in the bottom-left corner.</p>

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Major Features and Symbology</p>	<p>Reference Features (included on all maps):</p> <ul style="list-style-type: none"> • Major Streets: black text annotations; • Parcel Boundaries: light orange lines; and • Key Map Boundaries: solid black lines. <p>Key Maps (Maps 19(1) – 19(26))</p> <ul style="list-style-type: none"> • Zone Boundaries: solid black lines that overlay all other features of the map; and • Zone Codes: towards the centre of each zone area, black capitalized text is present. <p>Site Specific Appeal to Zoning By-Law 2014-014 (By-Law Not in Effect): steel blue polygon.</p> <p><i>*Note: this feature does not appear on several key maps due to their limited geographic extent.</i></p>	<p>Draft Zoning</p> <ul style="list-style-type: none"> • Zone Boundaries: solid lime green lines that overlay all other features of the map. <p>Towards the centre of each zone area, the zone code is provided as a bolded, capitalized, white text annotation with a green outline.</p>
<p>Map Elements</p>	<p>Title, North Arrow, Scale Bar, and Legend.</p>	<p>Title, Scale, and Legend.</p>
<p>Scale</p>	<p>Graphic Scale Bar.</p>	<p>Graphic Scale Bar.</p>
<p>Units</p>	<p>Metres.</p>	<p>Metres by default but may be changed to feet, kilometres, miles, yards, or nautical miles.</p>
<p>Orientation</p>	<p>Varied (Portrait and Landscape).</p>	<p>Not Applicable.</p>
<p>Colour Scheme</p>	<p>Limited (Black, White, Orange, and Blue).</p>	<p>Full Colour.</p>
<p>Other Considerations</p>	<p>In some instances, black text is placed over the black outline, impacting the map's legibility.</p>	<p>No disclaimer pertaining to the accuracy of the information presented in the online, interactive application.</p> <p>No instructions (or a virtual tour) pertaining to how to use the online, interactive application are provided on the application's webpage.</p>

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

	City of Laval, Quebec Code de l'urbanisme (Urban Planning Code) Projet de règlement CDU-1 (Draft By-Law CDU-1)	City of Halifax, Nova Scotia Regional Centre Land Use By-Law Enacted by Council on October 26, 2021 Approved by the Minister of Municipal Affairs on November 27, 2021
Zoning By-Law Type	Form-Based	Form-Based
Location and Access	Included in Annexe A – Feuilles Cartographiques (Appendix A – Map Sheets) of Draft By-Law CDU-1, which may be viewed online through the City of Laval's website .	Included as part of the zoning by-law, which may be viewed in print or accessed online through the City of Halifax's website .
Structure	<ul style="list-style-type: none"> • Feuille 1 – Plan de Zonage (Map 1 – Zoning Plan); • Feuille 2 – Territoire du PIIA – Centre-ville (Map 2 – PIIA Territory – Downtown); • Feuille 3 – Territoire du PIIA – Grandes Artères (Map 3 – PIIA Territory – Major Arteries); • Feuille 4 – Territoires d'Intérêt Patrimonial (Map 4 – Territories of Heritage Interest); • Feuille 5 – Bâtiments et autres Constructions d'intérêt Patrimonial (Map 5 – Buildings and Other Structures of Heritage Interest); • Feuille 6 – Territoire du PIIA – Ensembles bâtis d'Intérêt (Map 6 – PIIA Territory – Built Areas of Interest); • Feuille 7 – Territoire du PIIA – Vitrine Autoroutière (Map 7 – PIIA Territory – Protected Motorway Area); • Feuille 8 – Territoire du PIIA – Territoire Riverain (Map 8 – PIIA Territory – Riparian Territory); • Feuille 9 – Territoire du PIIA – ZAEP – Secteurs de Développement (Map 9 – PIIA Territory – Special Ecological Zones – Development Sectors); • Feuille 10 – Milieux Naturels d'Intérêt (Map 10 – Natural Areas of Interest); 	<ul style="list-style-type: none"> • Schedule 1: Regional Centre Land Use By-law Boundary; • Schedule 2: Zone Boundaries; • Schedule 3A: Downtown Dartmouth Special Areas; • Schedule 3B: Downtown Halifax Special Areas; • Schedule 3C: Established Residential Special Areas and Sub-Areas; • Schedule 3D: University and College Special Areas; • Schedule 3E: Watercourse Special Areas; • Schedule 3F: Other Special Areas; • Schedule 4: Dundas Street Extension Transportation Reserve; • Schedule 5: Proctor Street Transportation Reserve; • Schedule 6: Robie Street Transportation Reserve; • Schedule 7: Pedestrian-Oriented Commercial Streets; • Schedule 8: Publicly Sponsored Convention Centre; • Schedule 9: Landmark Buildings; • Schedule 10: Lands Designated Halifax Harbour; • Schedule 11: Wetlands; • Schedule 12: Reference Line – Northwest Arm; • Schedule 13: Reference Line – Lake Banook; • Schedule 14: Reference Line – Lake Micmac;

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Structure (cont'd)</p>	<ul style="list-style-type: none"> • Feuille 11 – Contraintes Anthropiques (Map 11 – Anthropogenic Constraints); • Feuille 12 – Zonage de Production Agricole (Map 12 – Agricultural Production Zoning); and • Feuille 13 – Territoire du Périmètre d’Urbanisation (Map 13 – Urban Area Boundary). <p><i>To ensure a concise best practices analysis, only the “Major Features and Symbology” findings of Feuille 1 – Plan de Zonage (Map 1 – Zoning Plan) are detailed below. This schedule is most relevant to matters to be considered by the City of London’s ReThink Zoning project.</i></p>	<ul style="list-style-type: none"> • Schedule 15: Maximum Building Height Precincts; • Schedule 16: Average Finished Grade for Building Height Calculation – Scotia Square Complex (SSC) Special Area; • Schedule 17: Maximum Floor Area Ratio Precincts; • Schedule 18: Minimum Front and Flanking Setbacks; • Schedule 19: Maximum Front and Flanking Setbacks; • Schedule 20: Maximum Streetwall Heights – Downtown Halifax Zone; • Schedule 21: Harbour Orientation Lines; • Schedule 22: Heritage Conservation Districts; • Schedule 23: Schmitville Heritage Buildings; • Schedule 24: Permitted Rear Additions to Schmitville Heritage Buildings; • Schedule 25: View Terminus Sites; • Schedule 26: Halifax Citadel View Planes; • Schedule 27A: Halifax Citadel Rampart Sight Lines; • Schedule 27B: Halifax Citadel Cavalier Building Coordinates; • Schedule 27C: Halifax Citadel Cavalier Building Coordinates 2; • Schedule 28: Dartmouth View Planes; • Schedule 29: Morris Street Waterfront View Corridor; • Schedule 30: Bishop Street Waterfront View Corridor; • Schedule 31: Salter Street Waterfront View Corridor; • Schedule 32: Sackville Street Waterfront View Corridor; • Schedule 33: Prince Street Waterfront View Corridor; • Schedule 34: George Street Waterfront View Corridor; • Schedule 35: Best Street Waterfront View Corridor; • Schedule 36: Mott Street Waterfront View Corridor; • Schedule 37: Church Street Waterfront View Corridor; • Schedule 38: North Street Waterfront View Corridor;
----------------------------------	---	---

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Structure (cont'd)</p>		<ul style="list-style-type: none"> • Schedule 39: Ochterloney Street Waterfront View Corridor; • Schedule 40: Queen Street Waterfront View Corridor; • Schedule 41: Portland Street Waterfront View Corridor; • Schedule 42: Prince Street Waterfront View Corridor; • Schedule 43: Kings Wharf Place Waterfront View Corridor; • Schedule 44: Canal Street Waterfront View Corridor; • Schedule 45: Maitland Street Waterfront View Corridor; • Schedule 46: Old Ferry Road Waterfront View Corridor; • Schedule 47: Parker Street Waterfront View Corridor; • Schedule 48: Wind Energy Overlay Zone Boundaries; • Schedule 49: Accessory Parking Prohibition – Downtown Halifax Zone; • Schedule 50: Incentive or Bonus Zoning Rate Districts; and • Schedule 51: Shadow Impact Assessment Protocol – Identified Areas. <p><i>As over 50 schedules are included within the City of Halifax's Regional Centre Land Use By-Law, to ensure a concise best practices analysis, only the "Major Features and Symbolology" findings of the schedules in bold above are detailed below. These schedules are most relevant to matters to be considered by the City of London's ReThink Zoning project.</i></p>
<p>Layout and Tools (if applicable)</p>	<p>Title and North Arrow are in the top-right corner; graphic scale bar, ratio scale, and map information are located in the bottom-right corner.</p> <p>All maps have a landscape orientation and map elements are located within the right margin of the page.</p>	<p>North Arrow located in the top-left corner; title and legend in the top-right corner; scale bar and ratio scale in the bottom-right corner.</p> <p>Maps are in portrait or landscape orientation.</p>

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

<p>Major Features and Symbology</p>	<p>Feuillet 1 – Plan de Zonage (Map 1 – Zoning Plan) Each of the City of Laval’s 34 zone codes have a unique symbology, comprised of a coloured polygon with a black outline. Varying hue intensities are used to symbolize zone codes within the same class (i.e., residential areas are varying intensities of yellow, commercial and mixed-use areas are varying intensities and shades of red and orange, parks and open spaces, as well as agricultural lands, are varying shades of green...).</p> <ul style="list-style-type: none"> • Highway: thick, dark grey line with dark grey text annotations; • Major and Local Streets: medium grey line with medium grey text annotations. Note annotations are only present for Major Streets; • Parcel Boundaries: thin, black lines; and • Zone Boundaries: thick, black lines that overlay all other features of the map, with the exception of zone code labels. <p>Zone Codes: towards the centre of each zone area, black capitalized text is present. The text has a white outline.</p>	<p>Reference Features (included on all maps):</p> <ul style="list-style-type: none"> • Major Streets: black text annotations; • Parcel Boundaries: thin, black lines; • Regional Centre Land Use By-Law Boundary: thick, black and white dotted line; and • Refer to Downtown Halifax Land Use By-Law: white polygon with small black dot pattern. <p>Schedule 2: Zone Boundaries Each of the City of Halifax’s 26 zone codes have a unique symbology, comprised of a coloured polygon with a black outline. Varying hue intensities are used to symbolize zone codes within the same class (i.e., institutional zones are varying shades of light blue, residential zone areas are varying intensities and shades of orange and yellow...).</p> <ul style="list-style-type: none"> • Zone Boundaries: solid black lines that overlay all other features of the map; and • Zone Codes: towards the centre of each zone area, black capitalized text with a white outline is present. <p>Schedule 15: Maximum Building Height Precincts</p> <ul style="list-style-type: none"> • Maximum Height Precinct (Metres): white polygon with a thin black border and black text annotation (within the polygon) that identifies the precinct number; • Maximum Height Precinct of 90 Metres, subject to Schedule 17 – Maximum Floor Area Ratios: dark grey polygon with a black border; and • Rampart Maximum Height: white polygon with a thin black line hatch pattern. <p>Schedule 17: Maximum Floor Area Ratio Precincts</p> <ul style="list-style-type: none"> • Maximum Floor Area Ratio (FAR) Precinct: white polygon with a thin black border and black text annotation (within the polygon) that identifies the precinct number.
--	--	--

Table D1. Best Practices Review – Key Maps and Schedules (cont'd)

Major Features and Symbology (cont'd)		Schedule 49: Accessory Parking Prohibition – Downtown Halifax Zone <ul style="list-style-type: none"> • Areas where Accessory Surface Parking Lots are Prohibited: dark grey polygons.
Map Elements	Title, North Arrow, Ratio Scale and Graphic Scale Bar, Legend, and Coordinate System.	Title, North Arrow, Graphic Scale Bar, and Legend.
Scale	Graphic Scale Bar and Ratio Scale.	Graphic Scale Bar and Ratio Scale.
Units	Metres.	Metres.
Orientation	Landscape.	Varied (Portrait and Landscape).
Colour Scheme	Full Colour.	Limited (most schedules are in greyscale, and a few, including Schedule 2: Zone Boundaries, are in full colour)
Other Considerations	In some instances, black text is placed over the black outline, impacting the map's legibility.	In some instances, black text is placed over the black outline, impacting the map's legibility.

Appendix E. Best Practices Review – Online, Interactive Applications

Table E1. Best Practices Review – Online, Interactive Applications

Best Practices Review – Online, Interactive Applications		
	Town of Newmarket, Ontario Urban Centres Zoning By-Law 2019-06 Enacted by Council on September 24, 2018 Approved by LPAT on June 10, 2019 (PL180854)	City of Vaughan, Ontario Zoning By-Law 001-2021 Enacted by Council on October 20, 2021
Zoning By-Law Type	Traditional	Traditional
Location and Access	Included as part of the zoning by-law, which may be viewed in print or accessed online through the Town of Newmarket's website .	Included as part of the zoning by-law, which may be viewed in print or accessed online through the City of Vaughan's website .
Structure	<ul style="list-style-type: none"> • Instructions on Launch Page; • Terms of Use; and • Online, Interactive Application. 	<ul style="list-style-type: none"> • Disclaimer; and • Online, Interactive Application.
Layout and Tools (if applicable)	Search, Disclaimer, Help tools (in the top-left corner); title and scale (in the bottom-left corner); Metadata and Coordinate System Information, Zoom-In, Zoom-Out, Drag Pan, and Identify tools (in the bottom-right corner); Map Content and Legend (Layer Manager), More Tools (Selection, Markup, Measure, Metadata, Active Layer, Search by Coordinates, Document Viewer, Coordinate Transformer), Share URL, Map Snapshot, and Print tools (in the top-right corner), in addition to the Base Map selection panel.	Legend, Layers List, Zoom-In, Zoom-Out, My Location tools (in the top-left corner), and Search and Print tool (in the top-right corner).
Major Features and Symbology	Zoning <ul style="list-style-type: none"> • Urban Centres Zoning By-Law 2019-06: solid, cyan polygon with a medium grey border; • Residential Detached Dwelling: ivory polygon with a medium grey border; • Residential Semi-Detached Dwelling: light yellow polygon with a medium grey border; • Residential Multiple Dwelling (Duplex): medium yellow polygon with a medium grey border; 	Zoning <ul style="list-style-type: none"> • Oak Ridges Moraine Area: white polygon with light blue hash marks and a medium grey border; • Greenbelt Area: white polygon with light green hash marks and a medium grey border; • Agricultural: olive green polygon with a medium grey border; • Commercial: red polygon with a medium grey border; • Commercial/Residential: cyan polygon with a medium grey border;

Table E1. Best Practices Review – Online, Interactive Applications (cont’d)

<p>Major Features and Symbology (cont’d)</p>	<ul style="list-style-type: none"> • Residential Multiple Dwelling (Townhome): deep yellow polygon with a medium grey border; • Residential Multiple Dwelling (Apartment): yellow-green polygon with a medium grey border; • Urban Centre Zone: purple polygon with a medium grey border; • Commercial Zone: red polygon with a medium grey border; • Employment Zone: grey polygon with a medium grey border; • Institutional Zone: pink polygon with a medium grey border; • Open Space Zone: light green polygon with a medium grey border; • Transitional Zone: orange polygon with a medium grey border; • Oak Ridges Moraine (Lands Excluded from the By-Law): olive green polygon with a medium blue border; and • Lands Excluded from the By-Law: solid, white polygon with a grey hatching and a medium grey border. <p><i>Varying hue intensities are used to symbolize zones within the same class (i.e., residential zones are varying intensities of yellow).</i></p>	<ul style="list-style-type: none"> • Employment: blue polygon with a medium grey border; • Industrial: purple polygon with a medium grey border; • Open Space: orange polygon with a medium grey border; • Parkway Belt: lime green polygon with a medium grey border; • Residential: yellow polygon with a medium grey border; • Shopping Centre District: pink polygon with a medium grey border; and • Oak Ridges Moraine: beige polygon with a medium blue border. <p><i>Towards the centre of each zone area the zone code is provided with a bolded, capitalized, dark grey text annotation.</i></p>
<p>Map Elements</p>	<p>Title, Scale, and Legend.</p>	<p>Title and Legend.</p>
<p>Scale</p>	<p>Ratio Scale.</p>	<p>Not Provided.</p>
<p>Units</p>	<p>Metres by default but may be changed to feet, kilometres, miles, or yards.</p>	<p>Not Provided.</p>
<p>Orientation</p>	<p>Not Applicable.</p>	<p>Not Applicable.</p>
<p>Colour Scheme</p>	<p>Full Colour.</p>	<p>Full Colour.</p>
<p>Other Considerations</p>	<p>Upon opening the online, interactive application a pop-up window appears inquiring if the user would like to “take a tour” of the application.</p>	<p>Only the more general zone classes are symbolized.</p>

Table E1. Best Practices Review – Online, Interactive Applications (cont'd)

	<p style="text-align: center;">Town of Oakville, Ontario Zoning By-Law 2014-014</p> <p style="text-align: center;"><i>There are currently three comprehensive zoning by-laws in effect in the Town of Oakville. For the purposes of the best practices analysis, the key maps and schedules of Zoning By-Law 2014-014, the Town's most recently enacted zoning by-law, are reviewed.</i></p>	<p style="text-align: center;">City of Markham, Ontario Zoning By-Law 12345</p> <p style="text-align: center;"><i>The City of Markham is currently undertaking a comprehensive review of its zoning by-laws and existing zoning framework. Although draft zoning by-law policies of Comprehensive Zoning By-Law 12345 have been published online, draft keys maps and schedules have yet to be released. At this time, the City of Markham directs individuals with interest in the forthcoming key maps and schedules to review draft mapping via an online, interactive application. For the purposes of the best practices analysis, the draft mapping is reviewed.</i></p>
Zoning By-Law Type	Hybrid	Hybrid
Location and Access	Accessed online through the Town of Oakville's website .	Accessed online through the City of Markham's website .
Structure	<ul style="list-style-type: none"> • Online, Interactive Application. 	<ul style="list-style-type: none"> • Disclaimer; and • Online, Interactive Application.
Layout and Tools (if applicable)	Search, Zoom-In, Zoom-Out, My Location, Print, Measurement, Basemap Gallery, and Layer List tools (in the top-left corner); Graphic scale bar and location coordinates (in the bottom-left corner); and About tool (in the top-right corner).	Application Information and Search (in the top-left corner, via the "I want to..." button); Scale (in the bottom-left corner); Initial View, Print, and Export tools (in the top-right corner, via the "Tools" button).
Major Features and Symbology	<p>Zoning Each of the Town of Oakville's 51 zone codes have a unique symbology, comprised of a coloured polygon with a light grey outline. Varying hue intensities are used to symbolize zone codes within the same class (i.e., employment zone areas are varying intensities of light blue, residential zone areas are varying intensities of yellow).</p> <p><i>Towards the centre of each zone area the zone code is provided with a bolded, black text annotation.</i></p>	<p>Zoning</p> <ul style="list-style-type: none"> • Zone Boundaries: solid dark purple lines that overlay all other features of the map. <p><i>Towards the centre of each zone area the zone code is provided with a bolded, capitalized, purple text annotation.</i></p>

Table E1. Best Practices Review – Online, Interactive Applications (cont'd)

Map Elements	Title, Scale, and Legend.	Scale Bar.
Scale	Graphic Scale Bar.	Graphic Scale Bar and Ratio Scale.
Units	Metres by default but may be changed to feet, kilometres, miles, yards, or nautical miles.	Metres.
Orientation	Not Applicable.	Not Applicable.
Colour Scheme	Full Colour.	Full Colour.
Other Considerations	<p>No disclaimer pertaining to the accuracy of the information presented in the online, interactive application.</p> <p>No instructions (or a virtual tour) pertaining to how to use the online, interactive application are provided on the application's webpage.</p>	<p>No disclaimer pertaining to the accuracy of the information presented in the online, interactive application.</p> <p>No instructions (or a virtual tour) pertaining to how to use the online, interactive application are provided on the application's webpage.</p>

Table E1. Best Practices Review – Online, Interactive Applications (cont'd)

	City of Laval, Quebec Code de l'urbanisme (Urban Planning Code) Projet de règlement CDU-1 (Draft By-Law CDU-1)	City of Halifax, Nova Scotia Regional Centre Land Use By-Law Enacted by Council on October 26, 2021 Approved by the Minister of Municipal Affairs on November 27, 2021
Zoning By-Law Type	Form-Based	Form-Based
Location and Access	Accessed online through the City of Laval's website .	Accessed online through the City of Halifax's website .
Structure	<ul style="list-style-type: none"> Disclaimer (indicating that Public Consultation for Draft By-Law CDU-1 is currently underway, and that the By-Law is not currently in-force); and Online, Interactive Application. 	<ul style="list-style-type: none"> Instructions; Disclaimer; and Online, Interactive Application.

Table E1. Best Practices Review – Online, Interactive Applications (cont'd)

<p>Layout and Tools (if applicable)</p>	<p>Title, Search, Zoom-In, Zoom-Out, My Location, Search, Print, Draw, Measurement, and Select tools (in the top-left corner); Legend, Layer List, Filter, Basemap Gallery, and About tools (in the top-right corner); and Graphic Scale Bar (in the bottom-left corner).</p>	<p>Search, Zoom-In, Zoom-Out, Legend, Introduction Panel tools (in the top-left corner).</p>
<p>Major Features and Symbology</p>	<p>Zoning</p> <ul style="list-style-type: none"> • Zone Boundaries: solid red lines that overlay all other features of the map. <p><i>Towards the centre of each zone area the zone code is provided with a bolded, capitalized, red text annotation with a white border.</i></p>	<p>Zoning</p> <ul style="list-style-type: none"> • Comprehensive Development District 1: dark pink polygon; • Comprehensive Development District 2: navy blue polygon; • Centre 1: burgundy polygon; • Centre 2: red polygon; • Cluster Housing 1: yellow polygon; • Cluster Housing 2: light yellow polygon; • Commercial Light Industrial: lavender polygon; • Corridor: magenta polygon; • Downtown Dartmouth: medium purple polygon; • Downtown Halifax: dark pink polygon; • Department of National Defence: dark grey polygon; • Established Residential 1: light beige polygon; • Established Residential 2: medium beige polygon; • Established Residential 3: dark beige polygon; • Hospital: pink polygon; • Heritage Conservation District – Schmidville: brown polygon; • Higher-Order Residential 1: dark orange polygon; • Higher-Order Residential 2: orange polygon; • Harbour Related Industry: light purple polygon; • Institutional: turquoise polygon; • Light Industrial: medium blue polygon; • Park and Community Facility: lime green polygon; • Regional Park: light green polygon; • University and College 1: capri blue polygon;

Table E1. Best Practices Review – Online, Interactive Applications (cont'd)

<p>Major Features and Symbology (cont'd)</p>		<ul style="list-style-type: none"> • University and College 2: aquamarine blue polygon; and • Water Access: light blue polygon. <p><i>Varying hue intensities are used to symbolize zones within the same class (i.e., residential zones are varying intensities of orange and yellow).</i></p> <p><i>Towards the centre of each zone area the zone code is provided with a capitalized, black text annotation.</i></p>
<p>Map Elements</p>	<p>Title, Graphic Scale Bar, and Legend.</p>	<p>Title and Legend.</p>
<p>Scale</p>	<p>Graphic Scale Bar.</p>	<p>Not Provided.</p>
<p>Units</p>	<p>Metres by default but may be changed to feet, kilometres, yards, miles, or nautical miles.</p>	<p>Not Provided.</p>
<p>Orientation</p>	<p>Not Applicable.</p>	<p>Not Applicable.</p>
<p>Colour Scheme</p>	<p>Full Colour.</p>	<p>Full Colour.</p>
<p>Other Considerations</p>	<p>The About tool provides information pertaining to how to use the online, interactive application and its tools.</p> <p>In addition to the zoning layer, information contained in other draft By-Law CDU-1 schedules is provided, including but not limited to: the location of properties of heritage interest, protected motorway areas, riparian areas, natural areas of interest, anthropogenic constraints, and agricultural production zones. All these layers may be toggled on or off.</p>	<p>When a property is selected, additional zoning information beyond the zone code and class is provided, including but not limited to front and flanking yard, maximum building height, and bonus zoning rate provisions, in addition to whether or not the site is in a shadow impact assessment area, special area, or active or proposed heritage conservation district, if applicable.</p>

Appendix F. Mapping Best Practices Review – General Findings

Table F1. Mapping Best Practices Review – General Findings

Mapping Best Practices Review – General Findings		
	Key Maps and Schedules	Online, Interactive Application
Location and Access	Included within the zoning by-law, which may be viewed in print at a municipality’s Municipal Offices or accessed online through a municipality’s website. Often, key maps and schedules are attached to the zoning by-law as an Appendix item.	Accessed online through the municipality’s website, often from the same page where the online version of the zoning by-law may be viewed. An internet connection is required to access this resource.
Structure	<p>Most zoning by-laws utilize Index Maps and Key Maps, which are numbered sequentially, to communicate zoning information.</p> <p>Zoning information, including an area’s designated zone class or code or site-specific height and/ or density requirements, is typically provided by way of a text annotation located within a distinguished area. The zoning maps of the City of Vaughan and City of Markham are an example of this approach.</p> <p>However, to increase map legibility, zoning provisions may be presented across several maps. For instance, the zone code applicable to a site may be provided on one map, while a holding zone or intensity provisions, such as required minimum and maximum heights or floor area ratios, are provided on another. The Town of Newmarket and City of Halifax utilize this approach.</p>	<p>If instructions on how to utilize the online, interactive application are provided, they may be included on the webpage with the link to the application. Alternatively, instructions may be provided within the application itself under the “Info” tool or as a “Take A Tour” feature.</p> <p>Like the instructions on how to use the online, interactive application, a disclaimer may be provided on the webpage with the link to the application or within the application itself. If provided within the application itself, the disclaimer often appears in the middle of the screen upon the application’s launch. Terms of Use, if provided, are typically found in the same location as the disclaimer. A user may need to agree to the Terms of Use prior to accessing the online, interactive application.</p>

Table F1. Mapping Best Practices Review – General Findings (cont'd)

<p>Layout and Tools</p>	<p>The layout of zoning maps varies but can be summarized under three approaches.</p> <ol style="list-style-type: none"> 1. As utilized by the Town of Newmarket and City of Vaughan, the title of the map is at the top of the page, while all other map elements, including the scale bar or ratio scale and/or legend, are provided along the bottom of the page. 2. As demonstrated by the Town of Oakville, all map elements are placed adjacent to one another, typically near the bottom-right corner of the page. 3. As adopted by the City of Halifax and City of Laval, the map elements are in a column format, on the right side of the page. <p>For the second and third approach, there is a clear effort to avoid overlaying the title, scale bar, legend, and other elements on the map itself.</p> <p>Several key maps and schedules have locator maps and indicate the projection or coordinate system used to create the map. This information can provide further context and improve the map's overall interpretability.</p>	<p>Most frequently, the online, interactive application's title is provided at the top of the page. A scale bar or ratio scale is often found in the bottom-left corner and the default location of the legend is along either the left or right edge of the page.</p> <p>Interactive tools are usually clustered together in the top-left or top-right corners of the application. The most common tools supported by the application include:</p> <ul style="list-style-type: none"> • Zoom-In/Zoom-Out; • Search; • Identify; • Help/About; • My Location; • Basemap Gallery; • Layers/Layers List; • Legend; • Measurement; and • Print.
<p>Major Features and Symbolology</p>	<p>Reference features often include places of interest, such as parks and open spaces, community centres, and major landmarks; waterbodies; major and minor streets; parcel boundaries; and building footprints, which may be visualized as solid grey/black polygons or as white polygons with black outlines.</p>	<p>The symbology of major features in the online, interactive application closely reflects that of the key maps and schedules. However, a more varied colour scheme is often utilized by the online application.</p>

Table F1. Mapping Best Practices Review – General Findings (cont'd)

<p>Major Features and Symbology (cont'd)</p>	<p>With regards to major and minor streets and parcel boundaries, a visual hierarchy is achieved through the use of varying line weights and colour intensities. For instance, the weight of the line used to symbolize streets decreases from highways to arterial roadways to minor roads and local roads. Further, the intensity of the line's hue often decreases as well. In short, more important features are darker and larger than background information. Parcel boundaries, which are plentiful and highly concentrated, are often symbolized with thin, light grey lines to avoid overcrowding the map.</p> <p>Similar to the symbology used for different street features, boundary lines often have a strong visual hierarchy. If the municipal boundary is provided, it is usually a dark colour and of a heavy line weight. Boundary lines for other areas, such as zoning areas, are much lighter in comparison, both in terms of line weight and colour.</p> <p>Special policy areas, site specific appeals, and lands not subject to the zoning by-law are typically identified by lightly coloured polygons or with a patterned overlap. Most commonly, a hatched patterned overlay is used.</p> <p>Zoning provisions are provided by text annotations that are located toward the centre of a zone area, which is delineated by a black or dark grey, medium weight line.</p>	<p>A unique feature of the online, interactive application is the ability to toggle on and off different layers. This enables a user to define which features and information are displayed on the map at a given time. As such, a user can directly control a map's visual display and influence its legibility. Generally, the more layers activated, the more cluttered a map becomes, which detracts from its interpretability.</p>
---	--	---

Table F1. Mapping Best Practices Review – General Findings (cont'd)

<p>Major Features and Symbology (cont'd)</p>	<p>Capitalized, bold black text is often used for the annotation. To further improve legibility, the text may have a white outline (see the City of Vaughan’s Zoning By-Law 001-2021 Schedule A – Map 16 as an example).</p> <p>In addition to the delineated zone areas with text annotations identifying zone provisions, several municipalities present zone classes as coloured polygons with varying hue intensities to identify zones of a similar class. This is illustrated by the key maps and schedules of the City of Halifax’s and the City of Vaughan’s zoning by-laws. Interestingly, similar colours are used across the zoning by-laws of several municipalities for the same zoning classes. For instance, residential zone areas are often symbolized with yellow or orange polygons while mixed-use zones utilize purple or pink polygons.</p> <p>If intensity provisions such as height or density measures are visualized on a separate map from the zoning classes or codes, they are often visualized with a white polygon that includes a text annotation providing the provisions details, such as the minimum or maximum required height. The Town of Newmarket and City of Halifax both adopt this approach.</p>	
<p>Map Elements</p>	<p>Title, North Arrow, Scale Bar or Ratio Scale, and Legend.</p>	<p>Title, Scale Bar or Ratio Scale, and Legend. North Arrows are often absent as the default orientation of the online, interactive application sets the top of the page as the north direction.</p>

Table F1. Mapping Best Practices Review – General Findings (cont'd)

Scale	Graphic Scale Bar and/or Ratio Scale.	If a scale is provided, the Graphic Scale Bar is more common.
Units	Kilometres on city-wide maps and metres on all other maps.	Metres. However, the Measurement Tool allows other measures to be selected such as kilometres, feet, and miles.
Orientation	Dependent on the municipality's or exhibited area's geographic shape. To preserve map legibility, all elements should be rotated to the same degree.	Not Applicable.
Colour Scheme	Varied. Newer zoning by-laws often utilize a full colour scheme to provide zoning information. This approach is the most visually compelling and has a higher degree of map legibility than limited colour schemes or greyscale maps.	Full Colour.
Other Considerations	<p>Index maps that designate key map boundaries along street lines, such as the Town of Oakville, rather than by an arbitrary grid, as is the case for the City of Vaughan, are more easily interpretable and convenient. For instance, if street lines are used to establish key map boundaries, parcels that fall within a zone area are unlikely to be severed, which would then require the review of two key maps to identify the parcel's zoning.</p> <p>Important map information, including the zoning by-law's enactment or approval date, is beneficial to include as it improves the map's interpretability.</p> <p>When the same symbology is used for different features, a map's legibility and effectiveness is negatively impacted.</p>	<p>A special benefit of the online, interactive application is the ability for a user to review the zone provisions of a site then access the applicable regulations of the zoning by-law through a hyperlink that is provided in a text box when a user selects a parcel in the application. This is a convenient feature as the user does not have to view the zoning schedule then flip back through the zoning by-law to read the applicable regulations. Instead, in just a single click the user is directed to the correct section, chapter, or page.</p> <p>When the same symbology is used for different features, a map's legibility and effectiveness is negatively impacted.</p>