Kleinburg Village Parking Strategy Review

Final Report

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We would like to thank all the contributors and stakeholders who helped guide and complete this Kleinburg Village Parking Strategy Review.

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EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

The Kleinburg Village Core ("Kleinburg Village") is a picturesque and historic village located within Ward 1 of the City of Vaughan ("City"). Supported by the Kleinburg Business Improvement Area (KBIA), Kleinburg is home to over 60 retail and service businesses, as well as schools, libraries, parks and art galleries. As its popularity grows, Kleinburg is experiencing ever-increasing demand, and parking has become a significant concern.

To assess immediate and long-term parking needs and develop a parking management strategy, the City completed the Kleinburg Parking Strategy Study ("Study"). Following quantitative data collection and analyses, as well as qualitative surveying and consultation, the Study identified and assessed alternative solutions. Assessed solutions are used to identify recommendations as part of a parking strategy addressing future parking needs. The project limits for the Study are shown in Figure ES - 1.

NEEDS AND OBJECTIVES

The overall goal is to develop a comprehensive and forward-looking parking strategy with the following objectives:

- Assess existing parking conditions and mobility options
- Engage the public and stakeholders
- Determine short - (**1 to 5 years**), medium - (**5 to 10 years**), and long-term - (**2041**) parking needs
- Provide parking management strategies and implementable solutions

The Study has been organized into two phases:

- **Phase 1**: Existing Conditions Review
- **Phase 2**: Parking Strategy Development

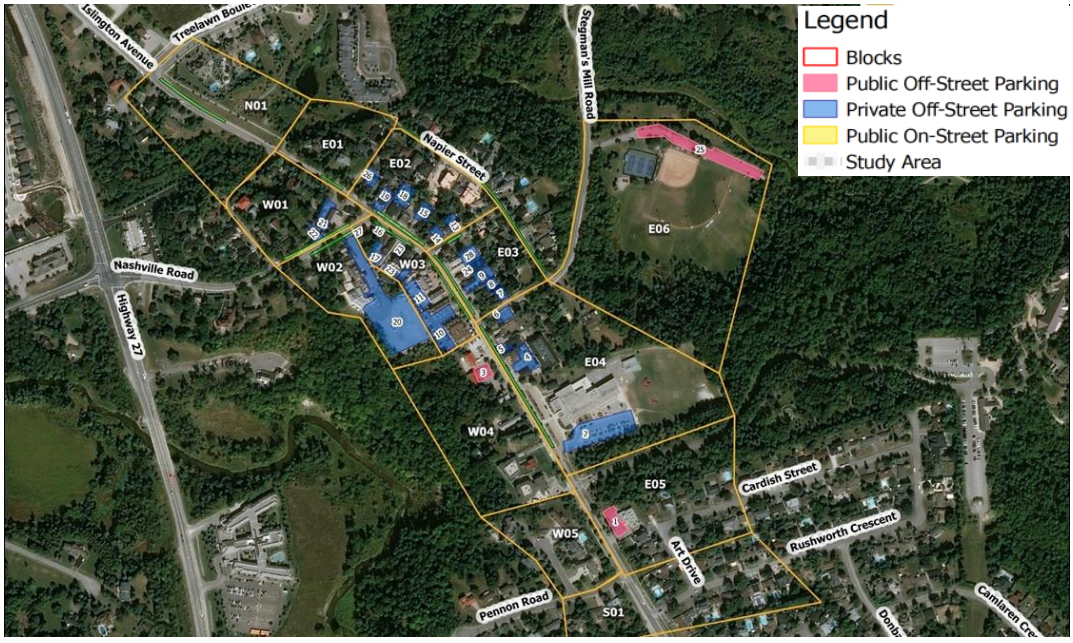

Figure ES - 1 Study Area Parking Supply

PUBLIC CONSULTATION

Phase 1 consultation involved introducing the Study to the public, agencies and stakeholders, informing them of survey results, gathering input on the existing conditions, and consulting on opportunities for Kleinburg Village.

Phase 2 consultation involved updating the public, agencies and stakeholders on the Phase 1 findings and the existing issues and opportunities in Kleinburg Village. Consultation also served as a means of presenting potential solutions to address existing parking needs, address longer-term goals, and to gather input from stakeholders to evaluate and refine the potential solutions.

PARKING SUPPLY AND DEMAND

Kleinburg Village currently provides a total of 690 non-residential core parking spaces (excluding Bindertwine Park [64 spaces], which is beyond a 5-minute walking distance of the Village core). Of the approximately 690 parking spaces available in Kleinburg Village, private off-street parking lots comprise the majority (**81%**). A total of 164 spaces are publicly owned, of which 129 public on-street parking spaces are free and available via unmarked spaces along Islington Avenue, Nashville Road, Kellam Street and Napier Street. Parking turnover and duration surveys were conducted during Fall and Summer weekdays and weekends in 2019, and during a special event. As shown in **Table ES-1,** the Village's peak parking demand across all survey periods is **55%**. Existing demand does not surpass "effective parking supply**" occupancy levels of 80%**, suggesting that a sufficient number of parking spaces are present within Kleinburg Village. Despite this, the existing configuration and management of the parking supply presents a number of challenges and concerns which are evaluated and addressed through this Study.

Table ES-1 Summary of Peak Parking Demand

	Survey Period	Peak Period	Total Occupancy	Off-Street		On-Street
				Private	Publicly Owned*	Public
Summer	Weekday - Aug 22, 2019	2:00 – 2:30 PM	49%	47%	60%	57%
	Weekend - Aug 24, 2019	2:00 – 2:30 PM	42%	39%	46%	50%
		8:30 – 9:00 PM	55%	53%	37%	68%
Fall	Weekday - Oct 24, 2019	1:30 – 2:00 PM	50%	46%	77%	60%
		8:30 – 9:00 PM	43%	36%	46%	70%
	Weekend - Oct 26, 2019	1:30 – 2:00 PM	55%	53%	20%	73%
Special Event	Weekday - Nov 29, 2019	7:30 – 8:00 PM	53%	47%	49%	75%

Based on the Study **Phase 1** findings, it is apparent that the current configuration of parking in Kleinburg Village results in an array of challenges, despite the demand for parking remaining within the available supply. Closer examination, specifically of the public parking space sub-group (on / off-street), shows a peak parking demand of **77%** which occurred during the Fall weekday survey.

Parking demand is greatest for public on-street parking, particularly within "hotspots" where a range of challenges were observed. Most of the residual parking was observed on private property. Residual on-street parking was observed, but outside of the core. Despite this finding, almost all Kleinburg's Village parking is within a 5-minute walk of the core. The parking surveys revealed several key observations:

1. **There are "hotspots", where peak parking occupancy is above 80%**
   - Former Starbucks and Kellam Street (all surveys)
   - Canada Post Plaza (most surveys)
   - East side of Islington Avenue, Kellam Street to John Street (Fall surveys)
   - South side of Nashville Road, Islington Avenue to Lester B. Pearson Street (Fall surveys)
   - Kleinburg Public School (Fall weekday survey)
2. **Hotspot areas feature limited public on-street parking**
   - Many of the businesses are concentrated near the Islington Avenue and Nashville Road intersection. Most reserve capacity is within private off-street lots. The low reserve capacity of public on-street parking contributes to the perception of parking scarcity.
3. **Signage and wayfinding in the Kleinburg Village is not legible and there is a lack of clarity of where parking is permitted**
4. **Special events could have improved organization and parking management**
5. **Recurring illegal parking in non-designated spaces was observed**
6. **The location of bicycle parking can be improved as demand for on-street facilities exists**

FUTURE PARKING DEMAND

Parking demand forecasts were based on future development within Kleinburg Village core for three future planning horizons, including short-term (1 to 5 years), medium-term (5 to 10 years), and long-term (beyond 10 years to 2041). Trip attraction rates were projected for each major land use type based on existing Gross Floor Areas (GFAs) and Summer and Fall Peak occupancy surveys completed in 2019. The rates were quantified by spaces per 100m^2 and were calibrated to match observed total peak occupancy.

Short-term GFA increases were based on development planning applications and planning policy information from the City of Vaughan's Official Plan (OP). It is anticipated that existing development applications will not capture all developments that will occur within the short-term horizon. In order to capture potential additional development, blocks containing commercial land uses with an existing Floor Space Index (FSI) significantly below the study area average were deemed overdue or prime candidates for redevelopment. Land use changes for the medium-term horizon were unknown during the study. As such, density increases for the medium-term horizon were based on Kleinburg Village study area development planning growth trends which assumed development density increase to an FSI of 0.4 for all commercial, restaurant, and service land uses.

Given that long-term planning targets for Kleinburg Village are unclear, forecasting assumptions were also made in the process of deriving long-term densities. The long-term GFA forecasting does not build directly on the medium-term assessment, however it considers a potential optimum development condition from present day (existing densities). Long-term densities were derived by evaluating trends in Kleinburg Village development applications, inferring a growth to an FSI of 0.6 for commercial, service and restaurant developments. It should be noted that the long-term forecast is highly conservative and intended to provide the City an understanding of parking solutions required to accommodate more intensive parking demand.

Parking demand for the Kleinburg Village core was forecasted as a product of trip attraction rate and corresponding horizon GFA. **Table ES-2** below shows the forecasted demand for the three horizons.

Table ES-2 Summary of Horizons Peak Parking Demand

Block	Key Site	Short-Term	Medium-Term	Long-Term
E01	North of John Street	5	6	9
E02	Former Starbucks	39	74	114
E03	Fitness Centre	46	76	116
E04	Kleinburg Public School	70	96	120
E05	Library	3	14	18
E06	Bindertwine Park	32	42	51
N01	North study limits	19	31	91
S01	South study limits	0	0	0
W01	RBC Bank	83	77	95
W02	Doctors House	116	129	235
W03	Post Office	62	118	186
W04	Pierre Berton Centre	63	68	68
W05	Residential	0	0	0
Total Parking Demand		**538**	**731**	**1,103**

ISSUES AND OPPORTUNITIES

Parking and related mobility issues were identified via input gathered from stakeholders, public consultation, survey data, as well as observations whilst on-site. Opportunities were identified to address the issues which formed the basis for developing future solutions. Issues and opportunities for the Study are defined below.

Issues

- High parking demand within high activity or “hotspot” areas
- Limited public parking spaces
- Private off-street lots are not available for general public use
- Inadequate signage and pavement markings
- Insufficient visibility or illumination of existing signage/restrictions
- Traffic volumes on Islington Avenue during peak periods
- Kleinburg Public School and YMCA daycare parking demand is high
- Safety concerns with respect to active transportation
- Special event communication to the general public can be improved

Opportunities

- Improve parking and travel efficiency by providing guidance (wayfinding, signage)
- Target and manage visitor groups to better utilize available parking
- Promote underused parking and review shared use of private parking spaces
- Improve or increase the supply of public parking using initiatives such as:
    - Delineating regular and accessible public on-street parking spaces
    - Review legalizing on-street parking spaces in restricted areas
    - Providing a centralized public parking facility

- Encourage Transportation Demand Management (TDM)
- Establish a pedestrian-oriented public realm
- Re-evaluate the role of Islington Avenue as a throughway versus a main street
- Explore new technologies in shared mobility and/or micro-mobility
- Consider implementing paid parking and a Parking Authority
- Update or change existing policies such as Cash-in-Lieu of parking
- Capitalize on and coordinate with the improvements planned for Islington Avenue

POTENTIAL SOLUTIONS

The potential solutions were developed responding to the issues and opportunities and were grouped into two main categories of **parking solutions** and **mobility / infrastructure improvements**. These solutions are intended to compliment and build on each other to continuously improve the parking dynamic in the Village. The potential solutions (**Table ES-3**) were evaluated using a number of criteria grouped into three main categories: **Technical, Social** and **Cost** with the criteria for each category measured using a scale of good, fair, and poor.

Table ES-3 Potential Parking Strategy Solutions

Solution Type	Short-term	Medium term	Long-term
Parking Solutions	Parking Restriction Signage	Parking Authority	Review/ Implement New Parking Technologies
	Public Parking Lot	Consolidated Private Parking	Redevelop Old Fire Hall (*if required*)
	Paid Parking (Village Core)	Paid Parking (Village Core)	Paid Village Wide Parking
	Parking Structure	Parking Structure	Parking Structure
	Parking Partnerships	Parking Partnerships	
	Parking Lay-by		
	Clear Delineation of Parking Spaces / Pedestrian Areas		
	Use of Bindertwine Park		
Mobility / Infrastructure Improvements	Wayfinding Strategy	Interconnected Bike / Pedestrian Paths	Mode-shift via Transit and TDM
	Canada Post Community Mailboxes	Village Square (Pedestrianized)	Pedestrian-only Village Core
		Real Time Parking / Dynamic Wayfinding Systems	
		Eco-mobility and Micro-mobility	

Legend **Good** **Fair** **Poor**

An average rating of all criteria measures was determined for each solution and used to identify the parking strategies recommended for each horizon.

PARKING SUPPLY AND DEMAND

To further understand the true benefit of the potential solutions, the parking supply and demand of the Village was evaluated, applying the recommended solutions at each study horizon. The short-term parking supply was estimated based on the existing supply, conversions of existing facilities, constructing of a new parking facility, engaging in public-private partnerships and parking forecasted for new developments per Zoning By-Law requirements. The medium-term parking supply was determined by adding the short-term planning horizon parking supply and parking forecasted per Zoning By-Law requirements for new non-residential developments. Long-term projections were based on parking supplies associated with the short-term horizon, the potential redevelopment of the Doctor's House, new Kleinburg Village developments, and a potential new parking facility at the Old Fire Hall (if required) north of the Village core. The redevelopment of the Fire Hall is subject to further monitoring, and is not recommended at this time. Total parking occupancy for the study area blocks within Kleinburg Village for the short-, medium-, and long-term were forecasted to be 59%, 72%, and 83% respectively. Parking occupancy is summarized in **Table ES-4**. Overall, the recommended solutions are anticipated to sufficiently accommodate parking demand in Kleinburg Village through the long-term (2041).

Table ES-4 Future Peak Parking Occupancy

Block	Key Site	Short-Term	Medium-Term	Long-Term
E01	North of John Street	33%	40%	60%
E02	Former Starbucks	38%	59%	75%
E03	Fitness Centre	58%	78%	93%
E04	Kleinburg Public School	69%	85%	87%
E05	Library	14%	67%	86%
E06	Bindertwine Park	50%	66%	80%
N01	North study limits	41%	67%	72%
S01	South study limits	0%	0%	0%
W01	RBC Bank	86%	80%	85%
W02	Doctors House	54%	60%	80%
W03	Post Office	57%	77%	87%
W04	Pierre Berton Centre	91%	99%	99%
W05	Residential	0%	0%	0%
Total Peak Occupancy (%)		**59%**	**72%**	**83%**



IMPLEMENTATION AND FUNDING STRATEGY

Implementation

The evaluation process was used to recommend solutions to develop the Study's parking strategy. An Implementation Plan was subsequently developed to deliver the parking strategy. The Implementation Plan will assist City staff by providing a framework of the steps needed to implement the recommended solutions. It will aid Council in making informed budget decisions in prioritizing solutions to be implemented and it will also seek input from stakeholder and service providers to reflect the growing needs of the Village community. Input will also be sought from stakeholders and service providers. A summary of the Implementation Plan is provided in **Table ES-5**. The Plan identifies that a number of the short-term solutions will be implemented through the Islington Avenue Streetscape Construction Project, which is scheduled to enter detailed design late 2020. The City can also engage Kleinburg Public School in the short-term to explore parking agreements for both vehicle and bicycle parking. The recommended method of implementation for the other solutions is identified as part of the Plan.

Table ES-5 Parking Strategy Implementation Plan Summary

Short-term
Parking Restriction Signage: an immediate measure with signage and temporary pavement markings to be implemented as early as possible (within year 1). Immediate measures are estimated to cost $4,400 for signage and pavement marking. Changes in parking restrictions, pavement marking and signage will be required as improvements to the streetscape take effect. Signage programme to be coordinated with supply changes and operating requirements i.e. school, library, partnership spaces, etc.
Parking Partnerships: require agreements to be made between the City and other parties. Establishment of parking partnerships will increase the Kleinburg Village parking supply providing new parking options for visitors. Implementation to be coordinated with signage restrictions and wayfinding.
Canada Post Community Mailboxes: implementation under the purview of Canada Post. City recommended to engage with Canada Post regarding implementation. City engagement process with Canada Post to be commenced immediately as duration of process is unknown. Notification of community mailboxes installation and operation would need to be provided to residents and business. Special arrangements will be required to be made for persons with disabilities and seniors with mobility challenges.
Parking lay-by: lay-by parking to be constructed as part of the **Islington Avenue streetscape improvement works**. Estimated to commence within the next two (2) years and is expected to progress as works proceed northwards on Islington Avenue.
Clear Delineation of Parking Spaces/Pedestrian Areas: delineation of parking spaces, improvement of pedestrian areas and provision of bicycle facilities to coincide and progress with implementation of lay-by parking and **Islington Avenue streetscape improvement works**.
Public Parking Lot: new parking lot in boulevard area north of John Street to be developed concurrently with **Phase 2** of the **Islington Avenue streetscape improvement works**.
Wayfinding Strategy: should be implemented concurrently with parking restriction signage. City to contact service provider to initiate terms and conditions to implement a **pilot program** for real-time parking technology. As parking supplies increases during the short-term, the wayfinding strategy must be dynamic to capture the evolving village parking.
Use of Bindertwine Park: parking spaces readily available. Use of spaces may initially become important due to streetscape works. City to engage KBIA and KARA to initiate and develop plan for short to long-term use of parking spaces. Development of bicycle facilities – repair stations, changing facilities, connections to trails to be explored.

Medium-term
Parking Partnerships: City to continue to pursue opportunities in the medium-term to deliver new parking partnership for the Village.
Consolidated Private Parking: consolidated parking assessments to be made on a case-by-case basis via the submission of parking justification studies. A review of the study would be used to determine feasibility and provide approval for a proposal to move forward.
Real-time Parking/Dynamic Wayfinding Systems: full roll-out of dynamic real-time wayfinding systems following completed pilot program. Supplemental technology to complement the system (webpage, mobile apps, payment options, etc.) would need to be established.
Interconnected Bike / Pedestrian Paths: identify and close prevailing gaps in pedestrian and cycle networks, integrate and expand networks where possible and include improvements along Stegman's Mill Road and connectivity to Islington Avenue.
Eco-mobility and Micro-mobility: City/parking authority to determine types of eco-mobility and micro-mobility to be implemented, docking station type, station locations, payment methods and options. Stations can be implemented gradually.
Village Square (Pedestrianized): engagement and agreement with property owners and KBIA to establish a pedestrian-oriented Village square / centre. Use, operation and maintenance of area coordinated and detail in established agreements for Village square.
Parking Authority: Not recommended as part of this study. Need for implementation subject to monitoring and future review
Paid Parking (Village core): Not recommended as part of this study. Need for implementation subject to monitoring and future review

Long-term
Review / Implement New Parking Technologies: New technology to be implemented would require cost-benefit assessments to identify those most suitable for the Kleinburg Village. Easily adaptable technologies requiring little infrastructural change such as Wi-Fi, can be incorporated into the development of a pedestrian-oriented core, micro-mobility stations, etc.
Mode-shift via Transit and TDM: The growth of alternative travel modes is anticipated via enhancement of existing measures to influence travel behaviour creating mode-shifts. Implementation of new measures (i.e. carpooling and car-share) can be introduced at new parking facilities and developments via agreements with relevant stakeholders.
Pedestrian-only Village core: Council approval required for closure of designated section of Islington Avenue to vehicle traffic. Consultation with stakeholders including KBIA and KARA required. Traffic calming measures required for surrounding road network, and coordination with York Region required. Policy guideline or by-law guidance for pedestrianized Kleinburg Village square to be developed.
Redevelop Old Fire Hall (at Grade Parking) or Parking Structure: Implementation to be determined by monitoring program with trigger for development proposed at 80% occupancy of Kleinburg Village parking supply. Redevelopment is not recommended at this stage. Alternatively, early redevelopment of the site to provide other City community facilities can also allow for an opportunity to provide public parking at the site.
Paid village wide parking: Not recommended as part of this study. Need for implementation subject to monitoring and future review



FUNDING

Sustainable funding measures will be needed to implement the solutions identified as part of this strategy. To fund the solutions of this strategy, the following tools can be explored:

- **Cash in Lieu** (CIL) – A policy tool that serves to reduce or waive the required number of on-site parking spaces, as mandated by the Zoning By-Law, via a payment to the City for said spaces. Fees to be paid by the developer are calculated via a formula specific to the Village.

  The current formula structure is used in Kleinburg Village:

  $$\$ = \{(P \times 40) + (S \times 28) + (L \times 12)\} \times M + \$m$$

  P = Land acquisition cost per m²

  S = Construction cost per m² of parking spaces

  L = Construction cost per m² of amenity/landscape/lighting

  M = multiplier (0.1 for conversions and renovations and 1.0 for new construction and additions)

  $m = Maintenance charge (recurring annual fee to be determined at time of agreement)

  It is recommended that a revision to the formula be implemented for the village.

  The following *revised formula* is recommended specifically for Kleinburg Village:

  Contribution = (**Construction** cost + (**Land** cost per m^2 x **Area** of parking space per m^2)) x **Number** of parking spaces x **Share** of contribution towards total costs.

  The revised formula discussed is more representative of the actual cost of construction and actual land acquisition required to provide parking. As well, the application of the "equity" factor of 50 percent is considered a means of demonstrating the City's willingness to work with and engage developers in having a shared a responsibility to provide parking for visitors to Kleinburg Village.

- **Development Charges (DCs)** – Are fees paid by developers for new development or redevelopment. The intention of the charge is to support the capital costs associated with growth and development within the City. This method of cost recovery is an equitable, consistent, and transparent way to recover costs. DCs specific to Kleinburg Village present an opportunity to fund parking improvements.

- **User Fees or Paid Parking** – Are funds gathered by charging the user a set rate to use a parking space. Paid parking could be implemented in Kleinburg Village in

the future to manage parking demand and to provide a revenue source. Alongside charged parking, parking enforcement could generate additional revenue, despite not being the primary intention of enforcement. While not recommended by this study for implementation, however, the potential for paid parking will be monitored and reviewed for the future consideration.

- **Parking Partnerships** – where the City sees an opportunity to meet parking demand but does not have the property or resources available, an agreement can be created with public or private entities to provide public parking.


SHARE
THE ROAD



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1 INTRODUCTION AND BACKGROUND

Kleinburg is one of Vaughan's premier commercial neighbourhoods with a charming residential community at its core and a rich and varied history. The Kleinburg Village core is a picturesque and historic village located within Ward 1 of the City of Vaughan ("City"). Supported by the Kleinberg Business Improvement Area (KBIA), the Kleinburg Village core is home to over 60 retail and service businesses, as well as schools, libraries, parks, and art galleries. As the population of the surrounding area and City increases and the popularity of the Village core grows, Kleinburg is facing increasing traffic volumes and visitors to the Kleinburg Village core, as well as growing concerns with respect to parking.

The 2011 Kleinburg Economic Development Strategy identified limited public parking as a significant challenge for developments in Kleinburg. To help assess the immediate and long-term parking needs in Kleinburg and develop an appropriate parking management strategy, the City retained McIntosh Perry Consulting Engineers Ltd. ("MP") to undertake the Kleinburg Parking Strategy Study ("Study"). This Study includes the evaluation and development of a comprehensive forward-looking strategy to accommodate existing demand and facilitate future growth, while supporting the City's Service Excellence Strategic Plan (2018-2022), with regard to transportation and mobility objectives. The Study explores opportunities and alternatives to accommodate long-term needs for parking in the Kleinburg Village core.

The Study has been organized in two phases, including:

- **Phase 1**: Existing Conditions Review – Seeks to understand the current conditions, including stakeholder and public opinions and needs

- **Phase 2**: Parking Strategy Review – Discusses parking options and strategies for immediate and future parking needs

As part of **Phase 1**, the team conducted several parking activity, turnover and duration-of-stay surveys of on-street and off-street parking facilities within Kleinburg to understand the daily and seasonal variations in parking demand. The team also observed and assessed current pedestrian activities and bicycle parking demand relative to available infrastructure. The existing and future needs based on parking supply-demand and the area's mobility options were coupled with a comprehensive public and stakeholder engagement strategy to obtain a detailed understanding of the parking issues and opportunities, and culminated in the project's Interim Report published in February, 2020.

Within **Phase 2**, the team developed and evaluated alternative solutions to address existing and future parking needs, such as improving parking space management to increase the available parking supply and identifying sustainable sources of funding or financing alternatives. To ensure participation and buy-in, public and stakeholders' input was obtained for the proposed parking strategy. This Final Report serves to review the immediate and future parking needs in Kleinburg and document potential solutions, evaluations and recommendations, and an Implementation Plan for the proposed parking strategy.

1.1 Study Purpose

The overall purpose of this Study is to develop a comprehensive and forward-looking parking strategy to facilitate growth and accommodate immediate and long-term parking demands in Kleinburg. The City has recently given increased consideration to parking demand in the area and at the request of the Kleinburg Business Improvement Area (KBIA) and the Kleinburg Area Ratepayers Association (KARA), has removed bollards along Islington Avenue to the south of John Street, unlocking up to ten (10) new parking spots. From a longer-term perspective, the City has initiated this Study to identify opportunities and to develop a strategy to accommodate future parking needs of the commercial core, as well as support existing parking demand.

1.2 Study Area

The study area encompasses the Kleinburg Village Core and is generally bound by Treelawn Boulevard to the north and Pennon Road to the south, as shown in **Figure 1-1**.

Within the study area, there is on-street parking along Islington Avenue and Nashville Road. Parking is allowed along portions of side streets, including along Kellam Street and Napier Street. Private customer parking lots are available at commercial / retail / institutional properties and mixed-use plazas, mostly fronting Islington Avenue. Also located within the study area is Bindertwine Park, which has its own parking lot with access from Stegman's Mill Road connecting to Islington Avenue.

During **Phase 1** of the project, the study area was divided into several blocks based on a consideration of both the area road network and land use. The blocks helped to categorize and understand the spatial context and variation in land use and parking needs, as well as to organize data collection through parking and online surveys. All on-street and off-street public/private parking facilities and the blocks within they are located are numbered and mapped in **Figure 1-1** for reference.

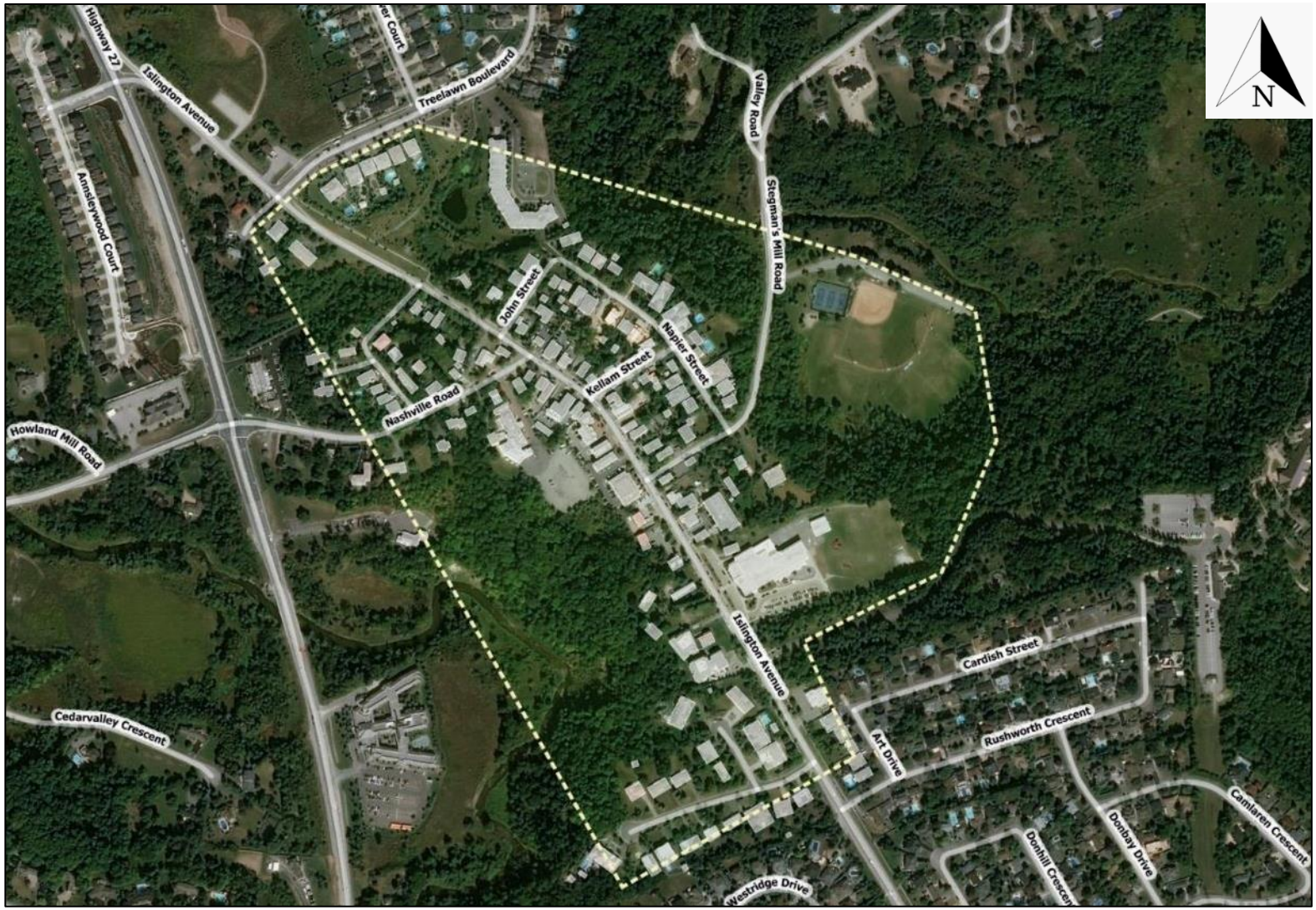


Figure 1-1 Study Area

2

2 NEEDS AND OBJECTIVES

2.1 STUDY BACKGROUND

The Village core is focused along Islington Avenue, a vibrant main street that runs through the heart of Kleinburg and is fronted by premier retail, commercial and mixed land uses that attracts thousands of local and regional visitors every year. Islington Avenue within the Kleinburg Village core features a pedestrian realm featuring urban design elements, engaging streetscapes, and on-street parking.

A number of background reports were reviewed to establish the groundwork for the Study, which provided an examination of Kleinburg's parking history, policies, guiding principles and recommendations for the study area. Where applicable, background documents will assist in framing the future parking context for the village of Kleinburg. Background document reviews are summarized in **Appendix A** and include:

- City of Vaughan Official Plan
- Village of Kleinburg Islington Avenue Streetscape Master Plan
- Kleinburg-Nashville Heritage District Study and Plan
- Kleinburg Economic Development Strategic Plan
- City of Vaughan Transportation Master Plan
- Pedestrian and Bicycle Master Plan
- Active Development Applications
- Cash-in-Lieu Policies
- City of Vaughan Draft Zoning By-law

- Bill 108

2.2 Study Objectives

This parking study seeks to assess existing parking supply and demand, as well as mobility options within the study area. Once identified, they will be used to determine immediate and future parking needs. Public engagement was undertaken to facilitate communication with the KBIA, KARA, and other stakeholders within the community to ensure inputs and concerns are reviewed and considered.

The following objectives are key to meeting the goals of this Study:

- Assess existing parking supply and demand, as well as mobility options in the study area
- Engage the public, KBIA, KARA, and other stakeholders to ensure inputs and concerns are reviewed and considered
- Determine short - (1-5 years), medium - (5-10 years), and long-term (2041) horizons parking needs
- Provide parking management strategies, implementable solutions and recommendations for improved accessibility to the Kleinburg area
- Recommend appropriate and sustainable sources of funding or financing alternatives available to the City to implement the recommendations of the Study

The Study will provide parking management strategies, implementable solutions, and recommendations for improved accessibility to the Kleinburg area. Appropriate and sustainable sources of funding or financing alternatives available to the City to implement recommendations are also identified.

3

3 PUBLIC CONSULTATION

3.1 CONSULTATION APPROACH

At the onset of the Study, a Consultation and Engagement Plan was developed to take a proactive and multi-faceted approach in reaching the various stakeholder groups and segments of the population in Kleinburg. This approach allowed the team to work with stakeholders and public to better understand the current existing parking issues in **Phase 1** of the Study and to review recommendations collaboratively in **Phase 2**, so as to meet a shared vision for the future.

A wide range of stakeholders as well as focus-groups were consulted and engaged through meetings, information and feedback sessions, online surveys and pedestrian intercept surveys. Stakeholders for this study included:

- Members of the public:
  - Individual members of the public including Kleinburg residents, individual citizens, local businesses, tourists, special interest groups or whose interest may be centered on specific issues and concerns
- City of Vaughan Staff / Departments
- Technical Agencies: York Region Transit, York Region District School Board
- Interest Groups: KBIA and KARA, Kleinburg Library, Kleinburg Public School
- Members of Council: Each (local) member of City Council and Regional Council member

3.2 PHASE 1 CONSULTATION

The goals of **Phase 1** Consultation were to introduce the Study to the public, agencies and stakeholders, inform them about Study intents, processes and outcomes, and gather

input on existing conditions, parking issues and needs, and opportunities in the study area. These were achieved through the following consultation activities shown in **Table 3-1**:

Table 3-1 Phase 1 Consultation Activities

Consultation Activity	Date/Location	Audience	No. of Participants/ Responses
Agency Stakeholder / Engagement Session #1	September 17, 2019, City of Vaughan administrative office	Technical Agencies, Interest Groups	24 + Project Team
Public Information and Feedback Session #1	September 26, 2019, Pierre Berton Heritage Centre, Kleinburg	Members of the Public	17 + Project Team
Online Survey #1	September 17, 2019 – October 31, 2019, Online	All Stakeholders	238 Responses
Pedestrian Intercept Survey	October 10, 2019, 10:00 AM to 2:00 PM, 6:00 PM to 9:00 PM, Kleinburg	Members of the Public	32
Focus Group Meetings			
KBIA Parking Task Force Meeting	October 02, 2019	KBIA	-
KARA Annual General Meeting	October 29, 2019	KARA	-
Council Presentations			
City Councillor Presentation	January 31, 2020	City of Vaughan Ward 1 Councillor	-
Regional Councillor Presentation	February 3, 2020	Vaughan Regional Councillors	-

The following key issues/comments were received through the **Phase 1** consultation efforts:

- Overall insufficient parking and illegal parking
- Congested traffic conditions on Islington Avenue
- Pedestrian movement and safety
- Lack of cycling infrastructure and bicycle parking within Kleinburg

- Traffic operations and parking at Kleinburg Public School
- Insufficient parking at post office
- Need for centralized public parking

Engagement though Online Survey #1 also found that while visitors to Kleinburg originate from various locations, most are local visitors, hailing from Kleinburg or within the City. Over 80% of survey respondents that visit the area travel by private vehicle, with less than 10% doing so by walking or cycling, and little to no transit usage. Many visitors perceive a continuous parking deficiency, difficulty in parking when visiting the post office and restaurants, including the former Starbucks, and also cite poor signage in the Village. This leads visitors to believe that additional public parking should be provided. This perception is consistent with the experiences of some visitors searching to find parking for long periods of time.

Details of the materials used and inputs received during **Phase 1** consultation activity can be found in **Appendix B**.

3.3 PHASE 2 CONSULTATION

The purpose of **Phase 2** Consultation was to update the public, agencies and stakeholders on **Phase 1** findings and the existing issues and opportunities in Kleinburg. Consultation also served as a means of presenting the potential solutions to address existing parking needs for the short- and longer-terms and to gather input from stakeholders to evaluate and refine potential solutions. **Phase 2** consultation activities have been summarized in **Table 3-2**. Details of **Phase 2** consultation inputs and activity is included in **Appendix B**.

Table 3-2 Phase 2 Consultation Activities

Consultation Activity	Date/Location	Audience	No. of Participants/ Responses
Agency Stakeholder / Engagement Session #2	April 20, 2020, Online/ Virtual	Technical Agencies, Interest Groups	30+ Project Team
Public Information and Feedback Session #2	June 8 – June 22, 2020, Online/ Virtual	Members of the Public	7 Responses
Online Survey #2	March 4 – June 5, 2020, Online	All Stakeholders	151 Responses

Phase 2 consultation coincided with the emergency response to the global COVID-19 pandemic. As such the **Phase 2** Stakeholder / Engagement Session #2 was held as a virtual meeting and the Public Information Feedback Session #2 was organized as a virtual

Open House in digital format and presentation boards were available for public view and feedback for a two week period from June 8, 2020 to June 22, 2020, at www.kleinburgparkingstudy.ca. The following key issues/comments were received through the **Phase 2** consultation efforts:

- Impacts of parking practices by Kleinburg Public School staff
- Immediate implementation of some short-term solutions
- Wider public use of Pierre Berton Heritage Centre parking
- Impacts of on-street parking by Kleinburg Village core employees
- Making the Kleinburg core area more pedestrian friendly

Online Survey #2 engagement found that of the 151 respondents 79% were classified as residents, 8% business owners or employees and 12% were visitors. Responses showed that 75% travelled by car to core with 17% walking, 7% cycling and 1% by other means.

Most respondents identified exploring shared parking options with existing private parking owners within the Village core as a preferred option for improving parking. The Pierre Berton Heritage Centre is considered one of the most desirable locations for shared parking use.

Details of the materials used and inputs received during **Phase 2** consultation activity can be found in **Appendix B**.

4

4 PARKING SUPPLY AND DEMAND

4.1 EXISTING CONDITIONS REVIEW

The first step in developing a strategy for managing parking in the Kleinburg Village core is to establish a baseline understanding of parking supply and demand in the area. Starting in late August 2019, several parking surveys of existing on-street, off-street, and bicycle parking, both publicly owned and private, were undertaken to determine the occupancy and turnover of parking within the Kleinburg Village core.

Phase 1 of the Study focused on reviewing the existing land use and planning polices, parking amenities, multi-modal transportation network, and traffic operations and safety conditions in the Study area. The Interim Report (February 2020) covers **Phase 1** of the Study and provides the findings of the background and existing conditions review, study methodology, results from both on-street and off-street parking surveys, and feedback received from initial consultation/ engagement sessions conducted by the City of Vaughan and project team.

4.1.1 Land use and Parking

Kleinburg Village, a small historic district, is comprised of a core area along Islington Avenue between John Street and just south of Stegman's Mill Road, which is predominantly commercial and mixed-use, with residential and open space areas surrounding the core. Along with commercial, retail, and institutional establishments of the core, there are several City heritage properties within the study area with direct access from Islington Avenue, which attract visitors to the area.

Kleinburg Village currently provides a total of 690 non-residential core parking spaces (excluding Bindertwine Park [64 spaces], which is beyond a 5-minute walking distance of the Village core). The study area parking supply is summarized in **Table 4-1**.

Table 4-1 Parking Supply Summary in Study Area

		Pavement Markings	Total Spaces (Accessible)	Bike Parking Stalls
Public Parking	On-street	Marked	2 (-)	-
	On-street	Un-marked	127 (-)	-
	Off-street[1]	Marked	35 (2)	5
Private Parking	Off-street[2]	Marked	467 (16)	64
	Off-street	Un-marked	59 (-)	-
SUB-TOTAL ESTIMATED NO. OF PARKING SPACES			**690 (18)**	**69**
Bindertwine Park	*Off-street[3]*	*Marked*	*64 (1)*	-
TOTAL ESTIMATED NO. OF PARKING SPACES			**754**	**69**

[1] Includes Kleinburg Public Library and Pierre Berton Heritage Centre, which are municipal properties but provide dedicated parking space to visitors.

[2] Parking spaces (20) at Avenue Cibi E Vini restaurant not included in supply values as the restaurant did not wish to participate in the parking demand after first survey on August 22, 2019.

[3] Bindertwine Park is beyond a 5-minute walk of the Village core.

The majority of the existing parking spaces are within private parking lots, accessible to patrons of the commercial plazas, retail/restaurant or service land uses to which they belong. There are 69 bike parking stalls available, most of which are located within the Kleinburg Public School parking lot. Off-street parking lots (3 public, 23 private) comprise many of the total parking spaces within Kleinburg. There are no on-street bicycle parking facilities.

Public on-street parking is either provided or permitted along Islington Avenue, Nashville Road, Kellam Street, and Napier Street without any payment or metering systems and are unmarked. Publicly owned parking spaces are available at the Kleinburg Library and the Pierre Berton Heritage Centre. These parking spaces are intended for use by patrons of the respective establishments.

Site reviews of parking facilities in the study area indicate:

- Insufficient directional and wayfinding signage at the vehicular level to available public on-street and private off-street parking spaces
- Lack of pavement markings to delineate parking spaces and their classification as regular or accessible spaces in most public parking areas
- Insufficient illumination and poor visibility of signage in some public parking areas, including along Napier Street where parking is permitted on the east side, and along the north side of Kellam Street where there are parking restrictions



4.1.2 Multi-modal Transportation

The road network in Kleinburg Village consists of collector roads and local roads. The sidewalk network provides access to properties from the main corridors in the study area, but a few gaps remain in the network, such as along Stegman's Mill Road. There are no dedicated cycling facilities within Kleinburg Village. A limited service York Region Transit (YRT) bus route operates through the study area.

Specific issues noted of the multi-modal travel options in Kleinburg Village include the following:

- Traffic congestion and long queues along Islington Avenue, especially in the northbound direction of travel during the afternoon peak hour
- Cut-through traffic and speeding along the parallel Napier Street during peak periods when Islington Avenue is congested
- Pedestrian areas encroached by parked cars along Islington Avenue or heavy vehicles (trucks and school buses) when completing turning movements
- Limited east-to-west pedestrian crossing opportunities along Islington Avenue, often resulting in jaywalking

A detailed review of the existing study area conditions is provided in **Appendix C**.

4.2 PARKING DEMAND RESULTS

An understanding of the current parking supply and demand in Kleinburg Village was established through parking utilization surveys, which is a count of the number of parking spaces occupied by a vehicle during specified intervals. Surveys identify locations where the greatest parking demand exists and where the parking supply is underutilized. Analysis result summaries are based on the number of parking lot spaces surveyed daily. Some variation occurred as access to some locations were restricted on some survey days.

4.2.1 Methodology

Licence plate surveys were completed by recording partial licence plate numbers at regular intervals of 30-minutes along specified routes through Kleinburg that covered all on-street, off-street and bicycle parking facilities in the study area. The surveys were completed during typical weekdays and weekends in the Summer and Fall seasons, as well as during a special event in late Fall, to include seasonal variations in parking demand, as shown in **Table 4-2.**

Table 4-2 Parking Demand Surveys – Dates and Times

Season / Event	Date	Day	Time	Total Survey Duration
Summer	August 22, 2019	Thursday	9:00 AM to 9:00 PM	12 Hours
	August 24, 2019	Saturday	9:00 AM to 9:00 PM	12 Hours
Fall	October 24, 2019	Thursday	8:00 AM to 9:00 PM	13 Hours
	October 26, 2019	Saturday	9:00 AM to 9:00 PM	12 Hours
Special Event - Christmas Tree Lighting	November 29, 2019	Friday	5:00 PM to 9:00 PM	4 Hours

Key measures of parking demand and supply that were developed from "daily" parking survey data at each parking facility included:

- **Accumulation** – number of vehicles parked at any given time
- **Occupancy** – ratio of the number of parking spaces occupied to the total parking supply expressed as a percentage. Based on industry standards this Study targets an occupancy level of 80% as "effective parking supply". Beyond 80% occupancy levels, it is anticipated that visitors will need to search longer for parking and experience reduced maneuverability within parking lots
- **Turnover** – average number of vehicles using a space during the survey period
- **Duration of Stay** – average length of time vehicles occupy parking spaces

4.2.2 Summer Survey

Accumulation: During the Summer weekday and weekend surveys, the combined parking accumulation increased gradually from the start of the survey at 9:00 AM and peaked at least once during the midday at 2:00 PM. Weekday parking demand tapered after the midday and continued to decrease until the end of the survey period, while weekend parking demand showed an evening peak from 8.30 PM to 9:00 PM, driven in part by more off-street parking use and use of the Doctor's House parking lot (an event venue that was hosting multiple weddings).

Occupancy: Through the peak periods of parking demand during the Summer surveys, both public and private parking facilities remained at occupancy levels below 70%, indicating overall reserve capacity. However, parking supply constraints were found to be present in certain sub-areas or segments where occupancy levels exceeded 80% and, in some cases, even exceeded the parking capacity by way of illegal parking. These locations are considered as "hotspots". This is not surprising considering that reserve capacity in private parking facilities is not accessible to all visitors (as these parking

facilities are private customer-only parking lots), and there is comparatively a much lower supply of public parking in Kleinburg versus private parking.

Parking occupancy levels during the Summer weekday / weekend peak periods for each public and private parking facility are mapped in **Appendix D.** Peak parking demand for the public and private parking observed during the summer surveys are summarized below in **Table 4-3.**

Table 4-3 Peak Parking Demand – Summer

Survey Period	Peak Period	Peak Parking Demand (Percent Occupied)	Off-Street		On-Street
			Private	Publicly Owned	Public
Weekday - August 22, 2019 9:00 AM to 9:00 PM	2:00 PM – 2:30 PM	351 (49%)	256 (47%)	21 (60%)	74 (57%)
Weekend - August 24, 2019 9:00 AM to 9:00 PM	Midday Peak 2:00 PM – 2:30 PM	284 (42%)	203 (39%)	16 (46%)	65 (50%)
	PM Peak 8:30 PM – 9:00 PM	378 (55%)	277 (53%)	13 (37%)	88 (68%)

Public On-Street Parking:

- **Kellam Street** consistently remained either at capacity or exceeding capacity (i.e. illegally parked vehicles) during each survey period. Illegally parked vehicles observed on-site throughout survey periods were a result of:
  - Former Starbucks patrons who are unable to find parking at Starbucks
  - Pedestrians and visitors enjoying the public realm in Kleinburg around Islington Avenue and Kellam Street
  - Wedding parties in limousines for photoshoots and events at the Doctor's House

Publicly owned Off-Street Parking:

- **Kleinburg Library** remained above 80% occupancy between 1:00 PM and 4:00 PM. The Kleinburg Library is open during weekdays between 1:00 PM and 8:00 PM

Private Off-Street Parking:

- **Former Starbucks** parking was almost always at occupancy levels above 80% and during several periods experienced more parking demand than the available parking supply on both weekdays and weekends

- **Canada Post Plaza** experienced close to or capacity conditions from 9:30 AM to 12:00 noon during the weekday and to 3:00 PM during the weekend
- **Commercial plazas** such as the Kleinburg Pharmacy Plaza, Cookie Crumble Café Plaza, and personal services such as Dean's Veterinary Hospital and Napa Valley Dental Care were hotspots during weekday peak period
- **Recreational establishments** such as Avlyn Gardens Ristorante and Inklein Fitness Centre showed higher levels of parking occupancy during the Summer weekend midday peak

Turnover: rates were calculated for 12-hour survey periods using 30-minute intervals for both summer weekday and weekend. The surveys indicated that average turnover rates (i.e. number of vehicles utilizing a single space during the survey) for all facilities were comparable between the Summer weekday and weekend, with the weekend being slightly higher. Turnover rates by facility were tabulated and mapped in **Appendix D.**

Amongst on-street parking, Kellam Street had the highest observed turnover rates, which are much higher than any other on-street segment. Similarly, amongst off-street parking, the turnover rate at the former Starbucks was significantly higher than any other off-street parking facility.

From the survey data, both Kellam Street and the former Starbucks exhibited at- or overcapacity conditions throughout the day. As observed on-site, this area at the intersection of Islington Avenue and Kellam Street was very busy during the survey periods. There were plenty of short-term visitors in the high-demand area, including vehicles that parked illegally along either side of Kellam Street or within the former Starbucks parking lot, leading to high turnover. Intuitively, without considering illegally parked vehicles, the turnover rates at both Kellam Street and the former Starbucks remained high, and at Starbucks, remained comparable (i.e., within 1 vehicle/space). A comparison of the turnover rates (vehicle/space for the survey period) with and without illegally parked vehicles at these two locations is shown in **Table 4-4**.

Table 4-4 Turnover Rate (Vehicle/Space)

	With Illegally Parked Vehicles	Without Illegally Parked Vehicles
Kellam Street	23.00	7.50
Former Starbucks	9.57	8.29

Duration of Stay: During Summer surveys, on-street parking in Kleinburg Village was occupied for 2 hours or less in the majority of the segments of on-street parking. At most off-street parking lots, the average duration of stay was approximately 4 hours or less. Durations of stay by facility are tabulated and mapped in **Appendix D.**

The average durations of stay exceeded time restrictions in the study area in the following locations:

- **Islington Avenue, north of John Street** showed the highest average duration of stay (3 hours and 7 minutes) for on-street facilities during the Summer weekday, marginally exceeding the City-wide parking allowed time limit of 3 hours
- **RBC Bank parking lot** (with 1-hour customer parking time limit) was found on average to be occupied close to 1.5 hours during Summer surveys
- **Kleinburg Pharmacy Plaza** includes 1-hour time limit for customer-only parking at spaces in the northwest section of the parking lot. The average duration of stay in the Summer is approximately 2 hours or less and within the general 3-hour limit in the lot. There is opportunity to review the 1-hour limit signage to confirm its applicability within the subject lot

Illegal Parking: Illegal parking refers to any parking activity in areas that are not designated parking locations and/or non-compliant with City by-laws – e.g. parking in front of fire hydrants, in reserved or accessible parking spaces without a permit, and in no-parking zones (hatched areas, signed areas, etc.). This does not refer to customers who overstay the 3-hour maximum parking time on-street or who visit other sites in Kleinburg while parked in a customer-only parking facility.

During Summer surveys, most illegal parking observed was not due to capacity constraints, but for improper parking occupying several spaces, parking in hatched areas or along fire routes, and parking in accessible spots without a permit. Illegal parking as a result of capacity constraints typically only occurred in the hotspot areas, around Kellam Street, the former Starbucks and the Kleinburg Clinic Plastic Surgery / The Laser Clinic.

Bicycle Parking: During Summer surveys, cyclists were seen throughout the day visiting or passing through Kleinburg. The former Starbucks was noted to be a popular meeting place for cyclists. The usage of available bike parking facilities in Kleinburg was generally low. However, during both Summer surveys, bicycles were found to be parked in non-designated spots in front of the Old Firehall Confectionary.

4.2.3 Fall Survey

Accumulation: Similar to Summer surveys, the combined parking accumulation in Fall increased gradually from the start of the surveys and peaked at least once during the midday at 1:30 PM. However, during the Fall weekday survey, there was an additional evening peak from 8.30 PM to 9:00 PM. A possible cause for this difference from the Summer weekday pattern could be that local area residents who may be on holiday in the Summer tend to visit restaurants, dessert shops and cafés during fall weekdays and park on-street.

Occupancy: The Fall weekday and weekend peak periods generally showed higher occupancy of public on-street parking during corresponding peak periods in the Summer. Parking occupancy levels during the Fall weekday / weekend peak periods for each public and private parking facility are mapped in **Appendix D.** Peak parking demand for public and private parking demand in the Fall are summarized in **Table 4-5**.

Table 4-5 Peak Parking Demand - Fall

Survey Period	Peak Period	Peak Parking Demand (Percent Occupied)	Off-Street		On-Street
			Private	Publicly Owned	Public
Weekday – October 24, 2019 8:00 AM to 9:00 PM	Midday Peak 1:30 PM – 2:00 PM	348 (50%)	243 (46%)	27 (77%)	78 (60%)
	PM Peak 8:30 PM – 9:00 PM	296 (43%)	190 (36%)	16 (46%)	90 (70%)
Weekend – October 26, 2019 9:00 AM to 9:00 PM	1:30 PM – 2:00 PM	378 (55%)	277 (53%)	7 (20%)	94 (73%)

The same hotspot segments identified during Summer peak periods experienced at- or overcapacity conditions during the Fall peak periods, including key locations that remained near, at, or exceeding capacity for long periods throughout the survey days:

- **Kellam Street**, which exhibited the highest parking occupancies in Kleinburg
- **Former Starbucks**, which remained either at capacity or exceeding capacity (with illegally parked vehicles)
- **Canada Post Plaza**, which remained a hotspot from 9:30 AM to 2:30 PM on both the weekday and weekend

Additional to the hotspots identified during the Summer surveys, the section of Islington Avenue south of Stegman's Mill Road was a hotspot during the Fall weekday peak period. This was likely a result of staff from the Kleinburg Public School using public parking as observed along this segment. The Kleinburg Public School also remained close to at- or overcapacity from 8:30 AM to 3:30 PM, reflecting normal school hours.

Turnover: The turnover rate statistics for the Fall are very similar in magnitude to those for the Summer and tend to be higher at the identified hotspots during peak periods. The highest turnover rate for on-street parking continued to be observed at Kellam Street. The highest turnover rates for off-street parking lots were found at the former Starbucks. These rates are significantly higher than the next busiest on-street parking segment and off-street parking lot, respectively. Illegal parking contributed to the high turnover rates observed, especially for the on-street parking along Kellam Street.

As expected, the turnover at the Kleinburg Public School is highest during the Fall weekday (3.41 vehicles/space) compared to any other survey (turnover rates remained below 2 vehicles/space). This turnover rate captures the pick-up/drop-off periods,

including when parents were observed to park in tandem (i.e. not in legal parking spaces) during the pick-up period. Turnover rates by facility are mapped in **Appendix D.**

Duration of Stay: overall, visitors parked for longer durations in Fall than in Summer. On-street parking in Kleinburg was occupied for 3 hours or less at the majority of the on-street parking segments. The average duration of stay for off-street facilities was approximately 4.5 hours or less for both weekdays and weekends. The average durations of stay exceeded time restrictions in the study area in the following locations:

- **East side of Islington Avenue south of Stegman's Mill Road** where vehicles exceeded the City-wide parking allowed time limit of 3 hours during the Fall weekday. This is supported by the observations made on-site and heard through the public consultation regarding school staff parking along Islington Avenue in front of the School
- **RBC parking lot**
- **Pierre Berton Heritage Centre** is a municipal property, allowing only authorized parking as per the City of Vaughan By-Law 064-199. The average duration of stay in the Fall was over 4 hours long

Illegal Parking: Illegal parking behaviours were consistent between Summer and Fall, but also included additional locations:

- **Kleinburg Public School** (11 vehicles) during the Fall weekday afternoon pick-up period. In comparison, no more than 4 illegally parked vehicles were noted in other parking lots
- **Islington Avenue, north of John Street** (up to 6 vehicles) in sections that are signed as no-parking zones. This section is located north of the busier sections of Kleinburg and do not contain land uses with excess parking demand. The observed illegal parking could be a result of customer demand for convenient on-street parking south of this area, of signage not being visible and/or of the parking restrictions not being enforced. There is potential to review the no parking zone along this section

Bicycle Parking: Fewer cyclists were observed to park their bikes in Kleinburg during the Fall surveys compared to the Summer and overall bike parking utilization remained low.

4.2.4 Special Event – Christmas Tree Lighting

The special event parking survey was conducted during the annual Christmas Tree Lighting in Kleinburg on Friday, November 29, 2019. Although it was a cold evening, there was no snow on the ground impacting parking opportunities or traffic circulation. The event started at 6:30 PM and continued until the tree lighting at 8:00 PM in front of the Kline House at the northwest quadrant of the Islington Avenue and Nashville Road intersection. Nashville Road was closed from Islington Avenue to approximately 234m west of the intersection from approximately 6:30 PM to 8:15 PM. Access to the Doctor's House remained open but required a detour from Islington Avenue via Lester B. Pearson Street or Highway 27 and Nashville Road.

Accumulation: Unlike the Summer and Fall surveys, the special event parking survey was conducted for a shorter period from 5:00 PM to 9:00 PM to capture the event-related parking activity and mobility patterns. During the special event survey, the total parking usage in Kleinburg started to increase from 6:00 PM to peak between 7:30 PM and 8:00 PM. After the tree lighting occurred at 8:00 PM, the surge in parking usage due to the event quickly dissipated.

Occupancy: During the peak period for the Christmas Tree Lighting event between 7:30 PM to 8:00 PM, on-street parking occupancy was significantly higher than off-street parking occupancy. Although there appears to be reserve parking capacity in both types of facilities, on-site observations showed use of non-designated parking spaces in both facility types, which is considered illegal parking in the absence of any special parking exemptions. No such special parking exemptions or signage permitting parking for the event was noted on-site. The special event parking demand is summarized in **Table 4-6.**

Table 4-6 Peak Parking Demand – Special Event

Survey Period	Peak Period	Peak Parking Demand (Percent Occupied)			
		All Facilities	Off-Street		On-Street
			Private	Publicly owned	Public
Friday, November 29, 2019	7:30 PM – 8:00 PM	**362 (53%)**	**248 (47%)**	**17 (49%)**	**97 (75%)**

Kellam Street and the former Starbucks parking lot remained hotspot areas much like in the Summer and Fall. However, some areas showed high parking occupancies, inconsistent with Summer and Fall evening parking data:

Public On-Street Parking:

- Both sides of Islington Avenue were 80% or more occupied excepting the section which was directly across from the event
- The east side of Islington Avenue north of John Street was occupied beyond capacity reflecting full utilization of available parking with illegal parking along sections of the boulevard with parking restricted signage
- Napier Street experienced occupancy levels of over 50% indicating that visitors to the event at the Kline House sought parking close to the event

Private Off-Street Parking:

- RBC Bank faced excess parking demand given the proximity of the lot to the event
- The Canada Post Plaza and Kleinburg Public School experienced much higher occupancy, indicative of the irregular demand due to the special event within Kleinburg

These trends highlight a need to review both the amount of and guidance/wayfinding to public parking spaces during special events in Kleinburg.

Turnover: The relatively highest turnover rates were observed at parking facilities in the immediate surroundings of Kline House, the busiest areas during the Christmas Tree Lighting, including the Canada Post Plaza, Chrome Hair One, the former Starbucks, RBC Bank and Islington Avenue north and south of Nashville Road.

Duration of Stay: The average durations of stay were approximately 1.5 hours in on-street spaces and generally below 3 hours in off-street lots. The parking time limit at RBC Bank was disregarded as visitors parked for an average of 1 hour 50 minutes, which is longer than most other survey days (except the Fall weekday) during the bank's operational hours. This is primarily driven by the eventgoers using the RBC lot, as it is located adjacent to the Kline House.

Illegal Parking: During the Christmas Tree Lighting special event, up to 16 vehicles were noted to be parked illegally along the east side of Islington Avenue, north of John Street at approximately 7:30 PM. This was the highest number of illegally parked vehicles captured across all survey periods.

Bicycle Parking: There were no bicycles parked along the street or within off-street lots during the Christmas Tree Lighting special event. Evening peak periods were also identified to capture peaking characteristics of on-street parking facilities

4.2.5 Summary of Parking Demand Surveys

Parking turnover and duration surveys were conducted during Fall and Summer weekdays and weekends, and during a special event. The surveys show the study area parking occupancy (i.e. the ratio of parking demand to supply) peaks at least once during midday on the surveyed weekdays.

> Parking demand is greatest for public on-street parking, particularly within hotspot areas where challenges were observed. The former Starbucks at the intersection of Kellam Street and Islington Avenue had been a major contributor to the hotspots but has since closed following completion of surveys. This is expected to have an impact on the area. However, the business that replaces it (potentially another coffee chain) may continue to have a similar impact. Most of the residual parking was observed on private property. Residual on-street parking was observed, but outside of the core. Despite this finding, almost all of the Village's parking is within a 5-minute walk of the core. Peak parking demand for the study area observed during a fall weekend survey (October 26, 2019) at 1:30 PM and the main village core hotspot area and illustrated in

Figure 4-1.

A summary of survey peak period parking activity is shown in **Table 4-7**.

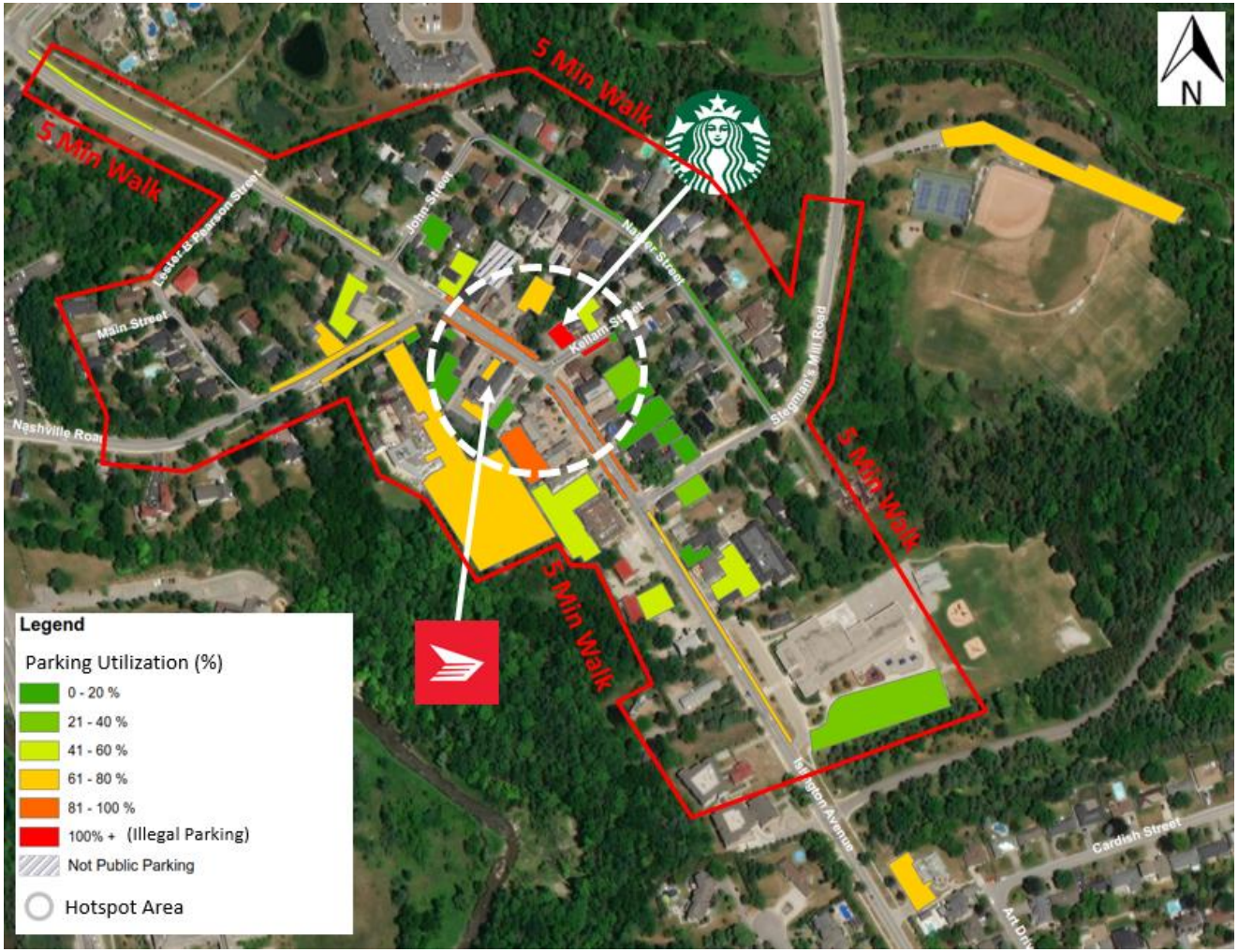


Figure 4-1 Village Peak Parking Demand

Total Occupancy = **55%**

- Private Off-Street = **53%**
- Publicly-Owned Off-Street = **20%**
- Public On-Street = **73%**

- **Overall reserve parking available**
- **Notable parking demand in "hotspot" areas** (key activity areas)

Table 4-7 Summary of Peak Parking Demand

	Survey Period	Peak Period	Peak Parking Demand (Percent Occupied)	Off-Street		On-Street
				Private	Publicly Owned	Public
Summer	Weekday - August 22, 2019 9:00 AM to 9:00 PM	2:00 PM – 2:30 PM	351 (49%)	256 (47%)	21 (60%)	74 (57%)
	Weekend - August 24, 2019 9:00 AM to 9:00 PM	Midday Peak 2:00 PM – 2:30 PM	284 (42%)	203 (39%)	16 (46%)	65 (50%)
		PM Peak 8:30 PM – 9:00 PM	378 (55%)	277 (53%)	13 (37%)	88 (68%)
Fall	Weekday - October 24, 2019 8:00 AM to 9:00 PM	Midday Peak 1:30 PM – 2:00 PM	348 (50%)	243 (46%)	27 (77%)	78 (60%)
		PM Peak 8:30 PM – 9:00 PM	296 (43%)	190 (36%)	16 (46%)	90 (70%)
	Weekend - October 26, 2019 9:00 AM to 9:00 PM	1:30 PM – 2:00 PM	378 (55%)	277 (53%)	7 (20%)	94 (73%)
Special	Weekday - November 29, 2019 5:00 PM to 8:00 PM	7:30 PM – 8:00 PM	362 (53%)	248 (47%)	17 (49%)	97 (75%)

The parking surveys revealed several key observations:

1. **There are "hotspot" areas, where peak parking occupancy is above 80%.**
   a. Former Starbucks and Kellam Street (all surveys)
   b. Canada Post Plaza (most surveys)
   c. East side of Islington Avenue, Kellam Street to John Street (Fall surveys)
   d. South side of Nashville Road, Islington Avenue to Lester B. Pearson Street (Fall surveys)

e. Kleinburg Public School (Fall weekday survey)

2. **Hotspot areas feature limited public on-street parking.**
   a. Many of the businesses are concentrated near the Islington Avenue and Nashville Road intersection. Most reserve capacity is within private off-street lots. The low reserve capacity of public on-street parking contributes to the perception of parking scarcity

3. **There is limited signage for time restrictions; however, they are generally followed.**

4. **While most visitors parked for reasonable periods of time across all survey days, the average duration of stay at a few parking facilities exceeded the posted time limit or the 3-hour on-street parking limit under By-Law 064-199.**
   a. Islington Avenue to the north of John Street (summer weekday)
   b. East side of Islington Avenue south of Stegman's Mill Road (fall weekday)
   c. The RBC Bank parking (exceeded posted 1-hour limit on all survey days)

5. **Special events could have improved organization and parking management.**

6. **Recurring illegal parking in non-designated spaces was observed.**

7. **The location of bicycle parking can be improved as demand for on-street facilities exists.**

4.3 User Behaviour and Perceptions

To understand parking user behavior and perceptions in Kleinburg Village, a robust consultation and data collection programme was conducted, consisting of online surveys, pedestrian intercept survey, site observations, and parking demand surveys.

The online survey and pedestrian intercept survey had a varied group of respondents including area residents, local and non-local visitors, tourists, and employees who travel to Kleinburg for a wide range of purposes. Survey respondents did indicate that, on average, they did not face any severe problems in finding parking close to their destinations. It was identified that most of these individuals travelled to Kleinburg mostly

by vehicle. The breakdown of the mode of travel chosen by the respondents can been seen in **Figure 4-2**.

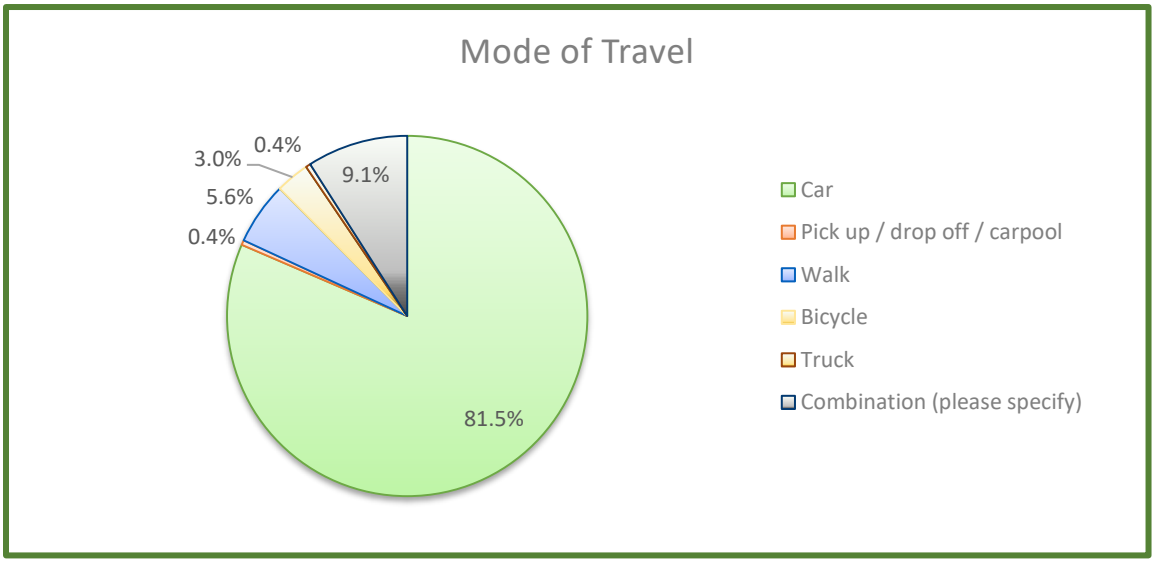
Figure 4-2 Travel Mode

Typical Trip Frequency and Mode

- The majority of respondents (**42%**) also indicated that they typically visit Kleinburg for non-work purposes more than 3 times a week. This is supported by the fact that the survey attracted proportionally more input from local visitors hailing from Kleinburg and Vaughan (external to Kleinburg), who are likely to make more frequent trips to Kleinburg compared to visitors from other municipalities.
- The majority of respondents (**82%**) travelled to Kleinburg by car. Amongst those who indicated they travelled by a combination of modes, most (**85%**) specified "car" and "walking", indicating the primary mode was likely by car, and the respondent walked from their car to the ultimate destination.

Parking Block and Destination Block

- The time to find parking varied for visitors to each destination block, except for Bindertwine Park where **100%** of visitors took less than 5 minutes to find parking. Overall, **47%** of respondents took less than 5 minutes to find parking, while less than **10%** took over 15 minutes.



Many visitors to the study area expressed a belief that an ongoing parking deficiency exists in the study area. Parking demand survey summaries, however, as shown in **Table 4-7** confirm the study area peak parking demand across all survey periods is 55%. Closer examination, specifically of the public parking space sub-group (on / off-street), show a peak parking demand of 77% which occurred during the Fall weekday survey. Existing demand does not surpass "effective parking supply**" occupancy levels of 80%**, thus indicating that a sufficient number of parking are present within the Village core.

Visitor perception of continuous parking deficiencies appear to be generated by arrangement of parking and public versus private parking, and the tendency to access parking spaces in desirable or hotspot areas such as the post office and the former Starbucks which are heavily subscribed for extended periods of time. This is further compounded by poor signage to direct visitors to other public parking opportunities, a general lack of public parking where it is in highest demand, a somewhat illegible parking supply that can be confusing to the user, particularly involving where parking is permitted or not, and the challenge visitors encounter in locating available parking spaces.

Fully summarized input from survey respondents are provided in **Appendix H**.

5

5 FUTURE PARKING DEMAND PROJECTIONS

5.1 PARKING FORECASTING

Whilst the total existing parking supply within the study area is greater than its parking demand, future growth forecasted in Kleinburg Village can increase parking demand. Parking demand projected for future conditions in the study area is based upon development planning application information from both the City of Vaughan policies contained within the Vaughan Official Plan, and general Kleinburg Village growth assumptions. Forecasts identify future parking demand, measure parking supply shortages (if any), while providing an evidence based, best estimate of customer parking requirements as it relates to area developments.

Parking forecasting was assessed for three (3) future planning horizons, including short-term, medium-term, and long-term. Future demand projections were supported by a comprehensive review of background reports, various planning information, four (4) parking activity surveys conducted in **Phase 1** during the Summer and Fall of 2019, and online survey data.

The analysis of parking demand involved the following data:

- Quantity, type and change in land use for assessed planning horizons
- Peak period parking demand generated by each land use type
- Parking supply
- Planning horizons:
  - short-term (1 to 5 years)
  - medium-term (5 to 10 years)
  - long-term (beyond 10 years to 2041)

Parking demand estimates identify where supply/demand imbalances occur, the extent of imbalances in these areas, and how these disparities would be addressed via Kleinburg Village's parking management strategy.

As part of the parking survey and forecasting analysis, the study area was divided into several blocks based on consideration of both the area road network and land use. The blocks or sub-areas of the study area delineated within are intended to help categorize and understand the spatial context, as well as variation in land use and parking needs. A description of each block, key feature of the block (for reference purposes), and assigned block identification code are provided in **Table 5-1**.

It is noted that although no commercial developments are located in Blocks N01, W05 and S01, theses areas have been included for spatial referencing purposes as it relates to the overall study area. As such no parking surveys were conducted for these blocks.

Table 5-1 Blocks within Kleinburg Village Study Area

Block ID	Description	Key Site
N01	Areas from the north of Lester B. Pearson Street to the study boundaries	North study limits
S01	Areas south of the study boundaries (while no parking data have been collected in this block, it was included in the Online Survey to better understand trips and related parking in Kleinburg)	South study limits
W01	Areas to the west of Islington Avenue, bounded by Nashville Road and Lester B. Pearson Street. This block contains personal services including RBC Bank and Registered Massage Therapist	RBC Bank
W02	Areas to the south of Nashville Road containing only the Doctor's House and XXI Chophouse (large event space and restaurant)	Doctors House
W03	Areas to the west of Islington Avenue, between Nashville Road and Stegman's Mill Road. This block contains several plazas (Kleinburg Pharmacy Plaza, Cookie Crumble Café Plaza, Nuage Med Spa Plaza, Canada Post Plaza), boutique shops and restaurants	Post Office
W04	Areas to the west of Islington Avenue, between Stegman's Mill Road and the roadway to McMichael's Art Gallery on the east side of Islington Avenue. This block contains the Pierre Berton Heritage Centre	Pierre Berton Centre
W05	Areas to the west of Islington Avenue, between the roadway to McMichael's Art Gallery and Pennon Road. This block contains residential units	Residential
E01	Areas to the east of Islington Avenue, between Lester B. Pearson Street and John Street	North of John Street
E02	Areas to the east of Islington Avenue, bounded by John Street and Kellam Street. This block contains restaurants/cafes and personal services (hair salon, plastic surgery, etc.)	Former Starbucks
E03	Areas to the east of Islington Avenue, bounded by Kellam Street and Stegman's Mill Road. This block contains realtor offices, a dentist's office, a fitness centre and a boutique	Fitness Centre
E04	Areas to the east of Islington Avenue, bounded by Stegman's Mill Road and roadway to McMichael's Art Gallery. This block contains the institutional land uses such as the Kleinburg Public School and a music school, a veterinarian's office and the Immanuel Florist Plaza	Kleinburg Public School
E05	Areas to the east of Islington Avenue, between the roadway to McMichael's Art Gallery and the southern study area limits. This block contains the Kleinburg Public Library	Library
E06	Area located east of Islington Avenue, located off Stegman's Mill Road. This block contains Bindertwine Park.	Bindertwine Park

Note: Parking surveys were not conducted in Blocks N01, W05 and S01 as they contain no commercial developments

Figure 5-1 Study Area Block Map

5.2 SHORT-TERM PROJECTION

Short-term parking projections are based on a five (5) year horizon, from present day (2020) and are detailed in the following sections. The process included the computation of peak period parking demands based on forecasted growth for each horizon period. Estimation of the peak period parking ratios (the number of parking spaces for every 100 square metres of a land use type) are multiplied by the floor area of that land use type for the study horizon to obtain parking demand.

5.2.1 Land Use Projections

The Study calculated the increase in floor area within the Village as a method for determining parking demand attraction. Existing land use types were verified through the municipal property assessment corporation (MPAC) in most cases, as well as through field checks, KBIA's online business directory and Google Maps in other cases. Residential developments were not inventoried or surveyed due to access and public safety concerns, as well as the ascribed parking stalls were specifically reserved for residential units. Therefore, throughout the forecasting exercise, residential development floor areas and parking stalls were not analyzed.

Non-residential land use types were aggregated into simple land use categories for estimation of peak period parking demand. Through a process of checking each property address against KBIA's online business directory and other sources mentioned above, a profile of floor areas and their respective land use types was compiled for parking demand forecasts.

Gross Floor Area (GFA) increases for the short-term are based on development planning applications and planning policy information from the City of Vaughan's Official Plan (OP). Development applications were reviewed from online sources in addition to data provided by the City of Vaughan. Known developments containing commercial land uses considered for the short-term horizon are shown in **Figure 5-2**.

It is anticipated that new development applications would be received and approved by the City and subsequently constructed as part of the short-term beyond known planning information. To account for this additional development, Area Specific Policies in the City's OP were used to inform areas for commercial growth in the Village which are shown in **Figure 5-3**. Floor space index (FSI) guidelines from the OP for Mainstreet Commercial areas (maximums of 0.2 to 1.0) in addition to trends in FSI increases for planned non-residential developments for the study area were used to forecast additional short-term GFA increases. Blocks containing non-residential land uses with existing FSI significantly below the study area average were deemed overdue or prime candidates for redevelopment. Development densities for these areas were forecasted to increase to an FSI of 0.4, which is consistent with the scale of redevelopment planned for existing sites in the short-term horizon based on submitted planning data. **Table 5-2** shows the total forecasted change in GFA from existing conditions to the short-term horizon.

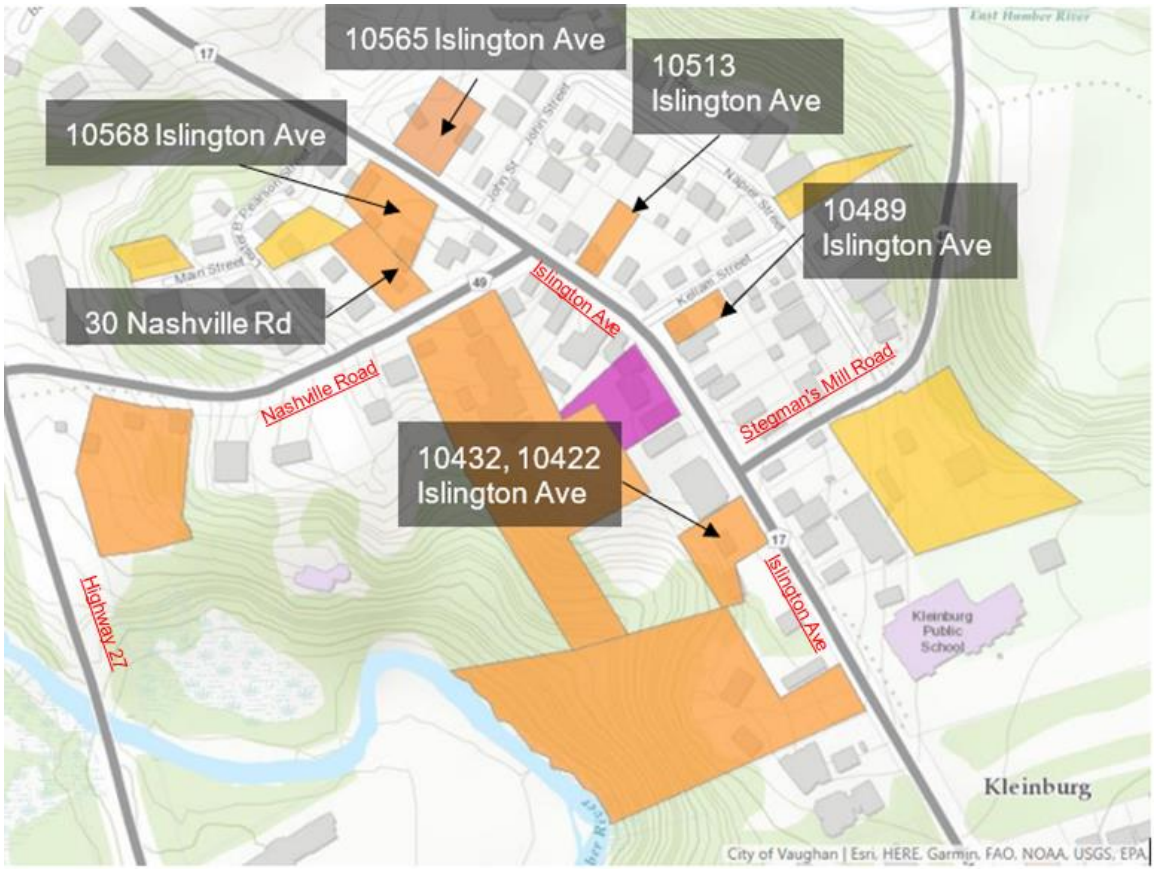


Figure 5-2 Future Non-Residential Developments

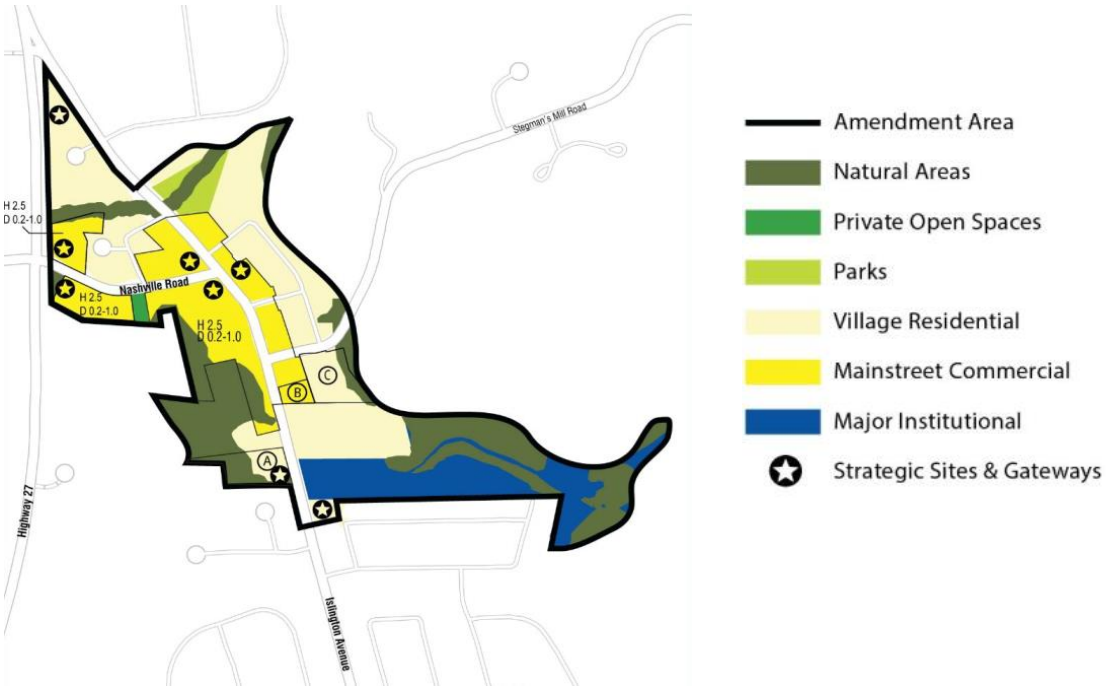


Figure 5-3 Kleinburg Core Land Uses

Table 5-2 Short-Term Land Use Changes

Land Use Type	Existing Quantity in (m^2)	Change in GFA (m^2)	Total GFA (m^2)
Commercial	4,609	1,421	6,030
Cultural	1,055	0	1,055
Event	3,644	0	3,644
Institution	6,365	0	6,365
Restaurant	1,040	0	1,040
Service	1,999	2,109	4,108
TOTALS	***18,712***	***3,530***	***22,242 (19% increase)***

Development GFA will increase by a total of 3,530 square meters, an overall 19% increase on existing study area conditions. GFA increases include 1,421 square meters of commercial space (31% increase on existing) and 2,109 square meters of service uses (105% increase on existing).

5.2.2 Peak Parking Demand Ratios

Parking ratios were projected for each major land use type based on existing GFAs and **Phase 1** Summer and Fall peak occupancy surveys completed in 2019. Trip attraction rates were quantified by parking spaces per 100m^2 and were calibrated to match observed total peak occupancy.

To account for variation in the observed peak period demand (four survey days), a confidence interval of ±11% was developed based on the existing survey data. The confidence interval provided upper and lower limits for attractions rates. **Table 5-3** summarizes peak period attraction rates (mid range) and upper and lower limits (±11%).

Table 5-3 Peak Period Attraction Parking Rates

Land Use Type	High End (+ 11 %)	Mid Range	Low End (-11%)
Commercial	3.02	2.72	2.42
Cultural	1.01	0.91	0.81
Event	3.55	3.19	2.84
Institution	0.29	0.26	0.23
Restaurant	2.68	2.42	2.15
Service	4.72	4.25	3.78

The mid range attraction rates were used for short-term demand analysis. It is anticipated that the quantification of short-term demand using mid-range rates is an appropriate

methodology as it based on observed existing parking behaviour and detailed planning information for the horizon.

It is noted that attraction rates in **Table 5-3** were based on GFA and existing parking demand per land use. Bindertwine Park is underutilized under existing conditions (thus having a very low demand and attraction rate) and therefore the application of this methodology was not considered appropriate.

Parking rates for Bindertwine Park, however, were forecasted based on planned use of the site for future horizons. An ultimate occupancy level of 80% was used as a long-term planning target, regressing to 50% occupancy for the short-term, whilst maintaining the existing parking supply of 64 spaces. Parking rates for Bindertwine Park assumed during future study horizons and based on occupancy targets are shown in **Table 5-4**.

Table 5-4 Bindertwine Park Peak Period Attraction Parking Rates

Land Use Type	Short-term	Medium-term	Long-term
Bindertwine Park	0.017	0.022	0.028

5.2.3 Short-Term Parking Demand

Parking demand is the product of parking ratios in **Table 5-3** and the short-term horizon GFA assumptions in **Table 5-2**. Although parking demand will be generated by sites located in specific blocks, some redistribution of where parking demand will manifest in the Village has been incorporated into the forecasting exercise, as public parking supply locations are expected to change through the study horizon, further detail of which is provided in **Section 7**. Peak parking demand by study area block has been summarized in **Table 5-5**. A detailed summary of block parking demand by land use type is provided **Appendix E**.

Table 5-5 Short-Term Parking Demand by Block

Block	Key Site	Parking Demand
E01	North of John Street	5
E02	Former Starbucks	39
E03	Fitness Centre	46
E04	Kleinburg Public School	70
E05	Library	3
E06	Bindertwine Park	32
N01	North study limits	19
S01	South study limits	0
W01	RBC Bank	83
W02	Doctors House	116
W03	Post Office	62
W04	Pierre Berton Centre	63
W05	Residential	0
Total Parking Demand		**538**

As shown in **Table 5-5,** the short-term total parking demand for the Kleinburg Village study area is 538 vehicles during the peak period. The short-term parking demand represents a 161 parking space (42%) increase in parking demand over existing conditions.

Figure 5-4 Short-Term Demand Projection Summary

Short-Term
1 to 5 years

- Kleinburg Village has an existing peak parking demand of 378 spaces.
- The study area is forecasted to experience 3,530 m^2 of non-residential growth for the short-term study horizon, a 19% increase in GFA.
- Parking ratios were projected for each major land use type based on existing GFAs. An 11% confidence interval was calculated to account for peak period variation, resulting in high-end, mid-range and low-end peak period attraction parking rates.
- Short-term parking demand was calculated using mid-range attraction rates.
- The study area was forecasted to generate a short-term parking demand of 538 which is a 42% increase on existing parking demand.

5.3 MEDIUM-TERM PROJECTION

The medium-term planning horizon was defined as five (5) to ten (10) years. The process of estimating medium-term parking projections is based on short-term demand forecasts and implements a similar approach to the short-term analysis.

5.3.1 Land Use Projections

Details regarding land use changes for the five (5) to ten (10) year medium-term horizon were unknown during the Study. As such, assumptions were made to forecast the medium-term GFA growth and resulting parking demand for commercial, restaurant and service land uses located within the Village's Mainstreet Commercial areas. Density increases for the medium-term horizon were based on known development trends considered for the short-term. Density characteristics of medium-term growth are thus anticipated to be similar in stature to new or redeveloped short-term properties. Existing FSI for commercial, restaurant and service land uses located within the Village's Mainstreet Commercial areas were therefore increased to 0.4 for the horizon. It is noted that medium-term density increases however were not applied (no additional growth attributed) to new or redeveloped properties assumed to be constructed as part of the short-term horizon. **Table 5-6** shows the change in the GFA for the medium-term and resulting forecasted planning densities.

Table 5-6 Medium-Term Planning Horizon Land use Changes

Land Use Type	Short-Term GFA (m^2)	Change in GFA (m^2)	Total GFA (m^2)
Commercial	6,030	2,470	8,500
Cultural	1,055	0	1,055
Event	3,644	0	3,644
Institution	6,365	0	6,365
Restaurant	1,040	568	1,608
Service	4,108	786	4,894
TOTALS	***22,242***	***3,824***	***26,066 (17% increase)***

Kleinburg Village is expected to experience a total GFA increase of 3,824 m^2 for the commercial, restaurant and service land uses. The planned change in development GFA is an overall 17% increase in land use density. It is anticipated that no changes will occur in terms of cultural, event, and institution land uses.

5.3.2 Medium-term Parking Demand

Medium-term demand was assessed by applying similar procedures described in the short-term projections. The difference in calculation is that peak period attraction rates used in calculating the demand were based on the high-end range (+11%) as presented

in **Table 5-3**. The high-end attraction rate provides a more conservative demand and will capture any spikes in demand during peaks.

Based on the assumptions made above and land use changes expected, the parking demand for the medium-term horizon is presented in **Table 5-7.**

Table 5-7 Medium-Term Parking Demand by Block

Block	Key Site	Parking Demand
E01	North of John Street	6
E02	Former Starbucks	74
E03	Fitness Centre	76
E04	Kleinburg Public School	96
E05	Library	14
E06	Bindertwine Park	42
N01	North study limits	31
S01	South study limits	0
W01	RBC Bank	77
W02	Doctors House	129
W03	Post Office	118
W04	Pierre Berton Centre	68
W05	Residential	0
Total Parking Demand		**731**

As shown in **Table 5-7,** the medium-term total parking demand for the Kleinburg Village study area is 731 vehicles during the peak period. The medium-term parking demand represents a 192 (36%) increase in parking demand from the short-term to medium-term conditions.

.

Figure 5-5 Medium-term Demand Projection Summary

Medium-Term
5 to 10 years

- The study area is forecasted to experience 3,824 m^2 of non-residential growth, a total GFA of 26,066 m^2 for the medium-term study horizon, a 17% increase in GFA from the short-term horizon.
- Medium-term parking demand was calculated using high-end attraction rates and is therefore conservative.
- The study area was forecasted to generate a medium-term parking demand of 731 which is a 36% increase on short-term parking demand.



5.4 LONG-TERM PROJECTION

A 2041 horizon was defined as the long-term planning horizon for the study. Development of land uses within the Mainstreet Commercial designation identified in **Figure 5-3** provide development densities that will generate Kleinburg Village's parking demand for this horizon. The long-term forecasting doesn't build directly on the medium-term assessment. However, it considers a potential more ultimate development condition from present day (existing densities) for the long-term horizon.

5.4.1 Land Use Projections

Given that long-term planning targets for Kleinburg Village are unclear, forecasting assumptions were made to derive long-term densities. Long-term growth assumptions were derived from the City's OP, relying on Mainstreet Commercial area FSI guidelines from the Kleinburg Village Area Specific Policies, and *known planning information* for future area development. As such, long-term development densities were derived from predominately known short-term condition and were forecasted as follows:

- GFA for proposed developments with planning applications included in the short-term horizon have been included in the long-term forecasting scenario
- Existing floor area for, commercial, service and restaurant developments in study area blocks were increase to an FSI of 0.6 for the long-term, based on conservative ongoing development trends
- No significant changes in densities were anticipated or considered for cultural, event and institution land uses
- Redevelopment of the Doctor's House site was included in the long-term horizon based on available planning information. The site is to be redeveloped from its existing GFA of 3,644 m^2 to 7,569 m^2

Forecasted long-term horizon density increases are summarized in **Table 5-8**.

Table 5-8 Long-Term Planning Horizon Land use Changes

Land Use Type	Short-Term GFA (m^2)	Change in GFA (m^2)	Total GFA (m^2)
Commercial	6,030	6,008	12,038
Cultural	1,055	0	1,055
Event	3,644	3,925	7,569
Institution	6,365	0	6,365
Restaurant	1,040	1,372	2,412
Service	4,108	2,739	6,847
TOTALS	***22,242***	***14,044***	***36,286 (63% increase)***



5.4.2 Long-term Parking Demand

Long-term parking demand is assessed using a similar process and assumptions to that of the medium-term forecasting. The product of high end peak attraction rates (+11%) as shown in **Table 5-3** and long-term GFA's show in **Table 5-8** were used to forecast long-term peak parking demand. Forecasted long-term parking demand is summarized in **Table 5-9**.

Table 5-9 Demand and Supply Summary – Long-Term

Block	Key Site	Parking Demand
E01	North of John Street	6
E02	Former Starbucks	114
E03	Fitness Centre	116
E04	Kleinburg Public School	134
E05	Library	21
E06	Bindertwine Park	51
N01	North study limits	27
S01	South study limits	0
W01	RBC Bank	111
W02	Doctors House	268
W03	Post Office	186
W04	Pierre Berton Centre	69
W05	Residential	0
Total Parking Demand		**1,103**

As shown in **Table 5-9,** the long-term total parking demand for the Kleinburg Village study area is 1,103 vehicles during the peak period. The long-term parking demand represents a 564 (105%) increase in parking demand from short-term conditions. It is important to note that this scenario is highly conservative and assumes a dense built-form in the Village, and the occurrence of high-end parking demand rates. This scenario has been generated to provide an idea of future parking demands in the Village given more advanced development and more conservative parking demand.

Figure 5-6 Long-term Demand Projection Summary

Long-Term
10+ years

- The long-term study horizon is forecasted to have a total GFA of 36,286 m^2. This represents a non-residential growth of 14,044 m^2 for the study area from the short-term horizon.
- Long-term parking demand was calculated using high-end attraction rates, resulting in a highly conservative analysis.
- The study area is conservatively forecasted to generate a long-term parking demand of 1,103, which is an increase of 105% from short-term conditions.

6

6 PARKING ISSUES AND OPPORTUNITIES

The review of the existing conditions, parking demand and supply, and user behaviours and perceptions has resulted in identifying several parking and mobility issues in Kleinburg Village. Additionally, several opportunities have been identified to be carried forward to **Phase 2** of this Study which will involve developing solutions to address the identified issues.

6.1 KEY PARKING AND MOBILITY ISSUES

Overall, the parking and related mobility issues gathered through open discussions and comments from stakeholders and the general public align with the issues noted during on-site reviews. In particular, the feedback from the parking demand surveys on the issue of near-capacity conditions noted at “hotspots” during the peak periods correlated to the on-site review. The three streams of data from public consultation, parking demand surveys and online user surveys, highlight a set of key parking issues within the Village:

- **High parking demand within high activity or hotspot areas**: While the parking demand surveys indicate that the study area does not have a severe parking shortage, there are key hotspot areas which are main attractors within the Village core. Visitors to Kleinburg Village seek to park as close as possible to these locations. This behavior creates a high demand in these hotspot areas giving visitors the perception of severe parking shortage within the Village core.
- **Public parking spaces are not widely available:** Most of the total 690 parking spaces in Kleinburg (excluding Bindertwine Park) are private off-street parking (526

spaces). Public parking includes on-street spaces (129 spaces) and publicly owned parking (35 spaces) for patrons of the Kleinburg Public Library and the Pierre Berton Heritage Centre. The only off-street public parking is provided in Bindertwine Park (64 spaces). However, this parking lot is located outside the Village core and accessed via Stegman's Mill Road, which is on a steep grade with sidewalk available only on one side. As a result, there are limited public parking spaces available during peak periods within the busy blocks containing the hotspots.

- **Private off-street lots are not available for general public use:** Although private off-street parking lots within the busy blocks offer reserve capacity during peak periods, not all spaces are readily available to the general public. Additionally, considering the public preference to park close to destinations, visitors to specific land uses can continue to see a parking shortage and resort to parking illegally (e.g. former Starbucks parking lot and on-street spaces along Kellam Street).
- **Signage and pavement markings are limited or inadequate:** Lack of signage and clearly demarcated on-street parking spaces impacts visitors being able to easily identify public parking spaces.
- **Existing parking signage or restrictions are not visible or apparent:** Lack of visibility or illumination of signage and restrictions contributes to illegal parking.
- **Traffic volumes are high on Islington Avenue during peak periods:** Heavy traffic volumes lead to queuing on Islington Avenue, which has a two-lane cross section, and impacts access to parking facilities. Likewise, on-street parking activity on Islington Avenue can affect traffic operations.
- **Kleinburg Public School and YMCA daycare staff parking demand is high:** While pick up-drop off operations at Kleinburg Public School are found to be well managed, staff were noted to utilize public on-street parking as a result of parking shortages within the school lot.
- **Safety concerns related to active transportation are present:** Lack of dedicated cycling facilities, limited pedestrian crosswalks, and sidewalks often encroached by parked vehicles and large vehicles maneuvering through intersections contribute to safety concerns for active transportation users.
- **Communication of closures and plans for special events**: In the absence of guidance from special event management and/or enforcement regarding parking, visitors either parked on-street areas signed as "No-Parking" or parked in private lots as close to the event venue as possible.

6.2 Opportunities for Key Issues

The following opportunities have been identified to address key issues and to develop short, medium and long-term implementable solutions.



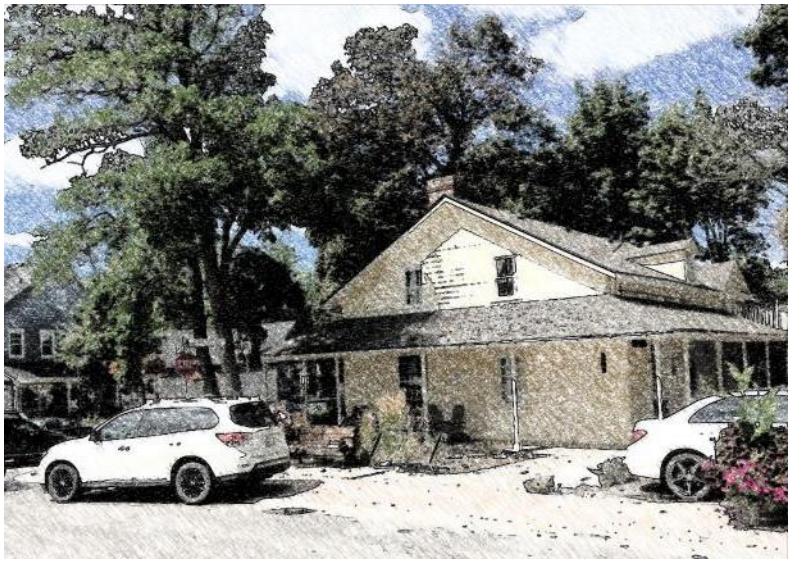
1. **Improve parking and multi-modal travel** efficiency by providing guidance to visitors. These may include well illuminated and visible directional or wayfinding signage to available on-street and off-street parking spaces to avoid vehicles circulating through the area.
2. **Target and manage visitor groups** such as cyclist groups that use Kleinburg Village as a meeting place to better utilize available public parking and reduce demand at hotspot locations. Employee parking for businesses within the Village can also be managed.
3. **Promote underutilized parking and review shared use** of private parking spaces through public private partnerships or use of publicly owned lots during off-peak periods.
4. **Improve or increase supply of public parking** using initiatives such as:
   - Delineate regular and accessible public on-street parking spaces.
   - Review legalizing on-street parking spaces in restricted areas (e.g. Islington Avenue, north of John Street)
   - Provide a centralized public parking facility
5. **Encourage Transportation Demand Management (TDM**) to reduce reliance on single-occupant vehicles.
6. **Establish a pedestrian-oriented public realm** and remove boulevard parking. This opportunity has been highlighted in the Kleinburg Islington Avenue Streetscape Master Plan to provide Islington Avenue the ability to accommodate improved boulevards with pedestrian-oriented amenities such as street furnishings, lighting, and increased space for pedestrian use. There is an opportunity to designate a Village "centre" with a pedestrian-oriented public realm, active streetscaping and more crossing locations.
7. **Capitalize on planned improvements** to the Islington Avenue corridor. The Islington Avenue Streetscape Phase 1 is currently underway, and opportunities to integrate solutions to improve parking along Islington Avenue are provided as part of future phases.
8. **Re-evaluate the role of Islington Avenue** as a throughway versus a main street. This highlights an opportunity to address traffic congestion along Islington Avenue which has impacts on front-lot parking access.
9. **Explore new technologies** such as shared mobility, micro-mobility and real-time parking information systems. Adoption of emerging technologies will impact existing parking requirements, curbside management strategies and mobility options, and a forward-thinking parking strategy will need to consider these opportunities.
10. **Consider implementing paid parking and a Parking Authority**. There is an opportunity to review the incorporation of paid parking in Kleinburg and create a Parking Authority to manage the parking strategies.

11. **Update/change existing policies such as cash-in-lieu of parking**. This includes updating the cash-in-lieu formula and reviewing the study area in conjunction with zoning policies to identify an appropriate area for cash-in-lieu application limits.

6.3 Development of Solutions

Issues and opportunities identified through the Study were used to develop solutions that would enhance mobility, parking, circulation in and through the core and the safety of non-motorized users. Analysis and surveys of existing and future conditions illustrate a common trend of residual parking capacity within the study area, as parking demand increases across study horizons.

Solutions were developed for each of the three (3) future horizons adopting a measured approach of improving operations within the Village with consideration given to planned improvements scheduled for the area. In addressing the short-term needs of Kleinburg Village, the project team reviewed areas where opportunity exists to better match supply and demand. These opportunities include some quick-win strategies that address issues users of Kleinburg Village encounter daily. Beyond the short-term, more comprehensive solutions were developed to ensure the sustainability of parking conditions in the Village through the medium- and long-term.



7

7 POTENTIAL SOLUTIONS

An array of solutions are necessary to tackle the range of existing challenges the Village faces. Outcomes presented in the following sections form part of any array of remedies that form the parking strategy for Kleinburg's Village core. The solutions that form the parking strategy also contain urban design features, safety considerations, and a balanced approach to a wide range of mobility options (bicycles, mopeds, scooters, ride-share, walking, transit etc.).

In addition to collected data and forecasting analysis, development of solutions for Kleinburg Village have been informed by feedback from the public and stakeholders. Feedback provided from both the public and stakeholders were obtained throughout the duration of the study in both **Phase 1** and **Phase 2**.

7.1 PUBLIC AND STAKEHOLDER ASSESSMENT

Following the existing conditions review and the development of the potential solutions, the public and stakeholders were consulted for their impressions and opinions on the Study's identified challenges and opportunities, and the Study's potential solutions. Overall, the stakeholders and public provided highly valuable input at both Phases of the Study. The existing conditions review largely echoed the input of the public and stakeholders, framing the key challenges and opportunities to be addressed by the potential solutions. The potential solutions were also well received by the public and stakeholders, as they offered more highly valuable input, contributing to the evaluation of the solutions and to their adjustment.

The sections below provide a summary of the feedback from the public and stakeholders through **Phase 1** and **Phase 2** of the Study. A summary is then provided of the impact on the potential solutions.

7.1.1 Stakeholder Engagement

The Agency / Stakeholder Engagement Session #1 was held on September 17, 2019, at the City of Vaughan administrative office. There were 24 participants plus the Project Team that attended the session. Agency/Stakeholder Engagement Session #2 was hosted as a virtual meeting on April 20, 2020, by the project team because of social distancing regulations due to COVID-19. The virtual meeting consisted of 30 participants plus the project team. The comments that were provided by participants for further consideration included:

- Businesses/buildings are deficient of parking and the situation has worsened with time, especially for residents, as more businesses have opened and more services in the community continue to attract visitors
- Parking at Kleinburg Public School (KPS) is designated for school staff. Currently, there are 50 staff and the number will increase to 70, at which point they will not be accommodated within the school parking lot
- Employees cannot find places to park and end up parking in customer lots. Private lots are being used by patrons of different establishments
- Kleinburg Public Library parking is acting as a de facto customer lot, which is causing problems for library patrons (e.g., seniors trying to visit the library or parents with children and must park on a side street and walk)
- The walk to and from Bindertwine Park is on a steep grade and likely not used by people coming to the Kleinburg Village core
- On-street parking does not look aesthetically pleasing against the building fronts and unique architecture of Kleinburg and consideration should be given to building a parking lot behind the street, comparable to Unionville in the City of Markham
- Parking is very confusing, especially since on-street parking is not delineated
- The success of the Village core depends on enabling pedestrian movements and creating opportunities for a great public realm/environment in the area
- School buses cannot turn without encroaching onto opposing lanes (at Islington Avenue and Stegman's Mill Road), or complete the turning movement if vehicles are parked close to the intersection/blocking the street
- The on-going construction in the area adds to the issues. There are multiple schools in the area and traffic is heavy in both directions of travel on Islington Avenue
- The school experiences traffic operations issues as vehicles and school buses try to enter/exit the school driveway during morning and afternoon drop off and pickup

- Islington Avenue is a through corridor with steady traffic flow and provides a segue to travel from Stegman's Mill Road to Teston Road
- Post office boxes for Kleinburg are located at the plaza on Islington Avenue, which contributes to congestion in the area
- There is limited public transit in Kleinburg resulting in a car-centric culture. In 2016 York Region Transit (YRT) reviewed transit needs and there was low demand in Kleinburg at the time
- Existing conditions pose a safety problem for vulnerable road users as the boulevard space is shared between vehicles, pedestrians and cyclists, and visibility is constrained in some locations
- Currently there is no municipally owned cycling infrastructure within the Kleinburg Village core
- The 2012 Islington Avenue Streetscape Master Plan provides the vision and framework to support cycling and public realm improvements. It is important to include this document as part of the parking strategy review
- There is no paid parking in Kleinburg. Enforcement is based on complaint and response
- Consider applying strategies and technology to inform users about parking locations and available parking spaces within an area

Comments received through the **Phase 2** consultation efforts include:

- Boulevard parking is utilized all day or for extended periods by teachers when parking spaces are available at the school
- Parking solutions for the short-term solutions could be further broken down into solutions that will be completed immediately or earlier than others
- Parking at Pierre Berton Heritage Centre changed from public to authorized parking and spaces are not being fully utilized, frequently remaining empty
- Employees in the Kleinburg Village core often use on-street parking along Islington Avenue limiting availability for customers. There is either the need to mitigate this through enforcement, or consider additional boulevard parking on Islington Avenue north of John Street
- Providing improvements to the Kleinburg Village core to make the area more pedestrian friendly, especially encouraging residents close to the core to walk rather than drive

7.1.2 Public Feedback

The Public Information and Feedback Session #1 was held on September 26, 2019, at the Pierre Berton Heritage Centre in Kleinburg and had 17 attendees. Attendees consisted of a mixture of residents and business owners. The session included an overview of project

presentation boards as well as facilitated interactive boards to gather input on the existing conditions and key issues / topics which should be addressed through the Study. Participants had the opportunity to provide comments on parking and traffic related issues along with participating or filling in interactive boards that were part of the presentation materials.

An overview of the comments received from Session #1 is provided below:

- Traffic issues at the intersection of Stegman's Mill Road/Kellam Street and Islington Avenue. Heavy vehicles restrictions signage exist, however, there is limited enforcement
- Develop a gateway concept that has a centralized area for parking
- Searching for available parking is generating more traffic congestion on Islington Avenue
- Cycling groups often meet at the former Starbucks and park around Kellam Street for long periods of time
- Vehicles not obeying stop-control at the intersection of Nashville Road and Islington Avenue
- New developments appear to be approved with inadequate parking
- Parking spaces are constrained and too tight making it difficult to park
- Parking at the post office is insufficient combined with the bank and other store customers using the parking spaces
- Parking is a challenge for meetings at the Pierre Berton Heritage Centre since the adjacent municipal lot does not permit public parking
- Weddings (generally in the proximity of the Doctor's House) cause an influx of people in Kleinburg. Visitors have blocked parking spaces and disrupt traffic flow while taking photos along the road

The Public Information and Feedback Session #2 was delayed due to the impacts of COVID-19 and social distancing guidelines and had thus been presented to the public as a web-based presentation. The presentation has been made available on the City's website for a year beginning June 8, 2020. However, user feedback was accepted for a two-week period from June 8 – June 22, 2020.

An overview of the comments received from Session #2 is provided below and detailed responses provided to respondents is provided in **Appendix B**:

- Traffic issues at the intersection of Stegman's Mill Road/Kellam Street and Islington Avenue. Heavy vehicles restrictions signage exist, however, there is limited enforcement
- Develop a gateway concept that has a centralized area for parking

- Searching for available parking is generating more traffic congestion on Islington Avenue
- Cycling groups often meet at the former Starbucks and park around Kellam Street for long periods of time
- Vehicles not obeying stop-control at the intersection of Nashville Road and Islington Avenue

7.1.3 Online Survey

Two online surveys were prepared and administered via the SurveyMonkey platform to obtain public participation and inform the study team of resident, worker, visitor behaviours and opinions. Online Survey #1 collected input on current parking needs, issues, opportunities, and desired outcomes from the Study. Online Survey #2 focused on participant input on potential short- medium and long-term solutions to address Village parking challenges.

Online Survey #1 was available from September 26, 2019 to October 31, 2019, obtaining a total of 238 responses. Online Survey #2 was available online from March 4, 2020, to June 5, 2020, and received 151 responses. A complete set of Online Survey #1 and #2 questions and summary of responses is provided in **Appendix H.**

The Online Survey #1 identified several key issues and parking needs of the Kleinburg Village core. Based on the results, the majority of the respondents' trip making profiles involved visiting Kleinburg Village on weekdays with most being local (i.e. from Kleinburg and Vaughan). The most common primary trip purposes were recreational, dining, residence, and personal service, and 50% of respondents stayed in Kleinburg Village for an hour or less.

The parking experience and parking service of respondents indicated that on-street parking was used to visit all blocks with the most popular parking blocks being W03 – Daniel Luis, Sugar Plum, E04 – Kleinburg Public School, Immanuel Florist, and E02 – Chrome Hair, Plastic Surgery. Additionally, it was gathered that on-street users are less satisfied with the parking service relative to the off-street parking service, with comments indicating shortages and difficulty in parking to visit the post office and restaurants.

Online Survey #2 helped gather public opinion on the various solutions that were developed. Based on responses, it was noted that the clear delineation of on-street parking spaces as well as improved parking control signage are preferred solutions over methods of locating public parking, and enforcement of parking space usage. This can be related to the observations recorded during the site survey with on-street parked cars encroaching onto the sidewalk and impacting the safety of the pedestrians.

Where the provision of consolidated public parking was concerned, respondents were mostly in favour of Pierre Berton Heritage Centre, with Bindertwine Park being the least preferred. This is attributed to the walk time and proximity of sites to Kleinburg Village core

destinations. The steep grade of Stegman's Mills Road to access Bindertwine Park is assumed to have also factored into the location being the least desired of the proposed options.

Most respondents scored any sort of paid parking introduction in the Kleinburg Village as the least favourable solution. In addition, comments were provided by respondents on their concerns regarding the Study. These comments were tagged for common themes and sorted to easily categorize and determine a pattern. The following list identifies the key points that were raised by respondents based on frequency:

1. Concerns regarding implementation of paid parking
2. Traffic congestion
3. Parking enforcement
4. Use of Kleinburg Public School facility for public parking
5. Improved signage within the area
6. Implementation of post office super mailboxes

Online survey responses were used to develop parking strategy solutions provided in **Section 7** to address community concerns and issues. A detail review of survey responses is provided in **Appendix H.**

7.1.4 Key Takeaways

Collating public and stakeholder input and the evaluation of the potential solutions, the list below provides a summary of the key takeaways and areas of focus for the City:

- **Implement Infrastructure Improvements**: Solutions that result in constructing consolidated public parking, clearly identified on-street parking and the ability to easily and efficiently navigate the Kleinburg Village to locate parking will satisfy the needs of the Kleinburg Village community. These solutions will address a multitude of concerns expressed by the public, including public parking accessibility, traffic and parking conflicts on Islington, driver legibility of the Kleinburg Village, pedestrian safety, and driver sightlines
- **Explore Partnerships**: The City will explore opportunities to partner with property owners in the area to provide additional parking options. This will include exploring partnerships with existing developments such as the Kleinburg Public School and the Doctor's House and new developments under future study horizons. In terms of super mailboxes, the City intends to engage Canada Post to explore the implementation of super mailboxes. The City will also investigate opportunities to offer general public parking at Pierre Berton Heritage Centre when events are not being held

- **Encourage Change**: Through the medium- and long-term, the City will explore opportunities to encourage changes in how people travel to and within Kleinburg. The solutions of establishing a Parking Authority, exploring emerging technologies, practicing TDM, and pedestrianizing the Kleinburg Village core will be considered as parking and traffic conditions in the Kleinburg Village are monitored. The City will also continue to evaluate the appropriateness of paid parking in the Village

7.2 List of Solutions

A key constraint within the Kleinburg Village core is the ability to locate parking within hotspot areas. A lack of public off-street parking within the vicinity of main attractors in these hotspot areas, result in visitors navigating the area in a search for a parking space, once parking at their intended destination is not attainable. Parking solutions in the first instance will increase the Kleinburg Village parking supply thus making more parking spaces available for the public. Solutions will then seek to make a more efficient use of the Village parking supply while also fostering changes to user behaviours and travel modes.

Solutions are intended to work in tandem with each other; building on one another as they are implemented, thereby continuously improving the parking dynamic in the Village core. Proposed solutions were grouped into the following two main categories:

- **Parking solutions**: Directly impacts parking supply or use of parking spaces
- **Mobility/infrastructure improvements**: Related to infrastructure or mobility improvements in the study area that would impact how people traverse Kleinburg Village

The selected solutions for consideration are summarized in **Table 7-1**. Some solutions were reviewed under different horizons to assess effectiveness of the solution over time and to identify a suitable timeline for implementation. Since the Islington Avenue Streetscape construction project will be revitalizing the Islington Avenue corridor in the Village in the short-term, more substantial active transportation improvements are contemplated beyond the short-term. Instead, recommendations are provided for active transportation improvements to be implemented through the Islington Avenue Streetscape project.

Table 7-1 Potential Parking Strategy Solutions

Solution Type	Short-term	Medium term	Long-term
Parking Solution	Parking Restriction Signage	Parking Authority	Review/Implement New Parking Technologies
	Public Parking Lot	Consolidated Private Parking	Redevelop Old Fire Hall
	Paid Parking (Village core)	Paid Parking (Village core)	Paid Village Wide Parking
	Parking Structure	Parking Structure	Parking Structure
	Parking Partnerships	Parking Partnerships	
	Parking Lay-by		
	Clear Delineation of Parking Spaces / Pedestrian Areas		
	Use of Bindertwine Park		
Mobility / Infrastructure Improvements	Wayfinding Strategy	Interconnected Bike / Pedestrian Paths	Mode-shift via Transit and TDM
	Canada Post Community Mailboxes	Village Square (Pedestrianized)	Pedestrian-only Village Core
		Real Time Parking / Dynamic Wayfinding Systems	
		Eco-mobility and Micro-mobility	

7.3 Solution Evaluation Criteria

Potential solutions identified in this section were informed by the issues and opportunities detailed in **Section 6** of this Study. Ultimately, potential parking solutions were assessed through an evaluation process resulting in recommended solutions for the Village. The process of developing and evaluating solutions is illustrated in **Figure 7-1**.

Figure 7-1 Solution Development and Evaluation Process

Potential solutions listed in **Table 7-1** were evaluated using a number of criteria grouped into three main categories: **Technical, Social** and **Cost**. Evaluation criteria used in these categories are shown in **Figure 7-2** and have been detailed further in **Appendix F**. Evaluation criteria were applied to all potential solutions over each study horizon to determine the best solutions for the study area implementation.

Figure 7-2 Evaluation Criteria

Each criteria measure was rated using a scale of *good, fair,* and *poor* as part of the evaluation. An average rating of all criteria measures was determined for each solution and used to identify the parking strategy for each horizon. The evaluation of short-term, medium-term, and long-term solutions is discussed and summarized in the sections below. Detailed evaluation tables for all term solutions are provided in **Appendix F**.

7.4 SHORT-TERM

The short-term solutions focus on addressing the multitude of challenges that have been observed in Kleinburg Village and expressed by those who reside in, work in, and visit the Village. The short-term solutions are intended to better align the parking and transportation infrastructure in the Kleinburg Village with its built-form and character. The short-term solutions cover a one (1) – five (5) year horizon.

7.4.1 Parking Solutions

7.4.1.1 *Parking Restriction Signage*

Currently, existing parking restrictions are unclear to a number of visitors to the study area. A lack of clearly visible or illuminated signage to identify parking duration limits contributes to illegal parking. Enhanced visibility of parking signage can help drivers understand where parking is permitted throughout different times of the day. This can be performed by altering the design of parking signs to be increasingly clear. Recognizable and noticeable parking signs will greatly increase confirmation to a driver that parking is permitted in certain locations. **Figure 7-3** displays the design of a parking sign that provides clear illustration of all parking restrictions by time and day of week in one sign. The sign also provides a legend to assist drivers with the explanation of symbols in the sign.

As an immediate measure, temporary signage and pavement markings can be implemented as early as possible (within a year) as this will inform visitors where they are allowed to park and give restrictions on how long they can remain in the parking space. Changes in parking restrictions, pavement marking, and signage will be required as streetscape improvements take effect.

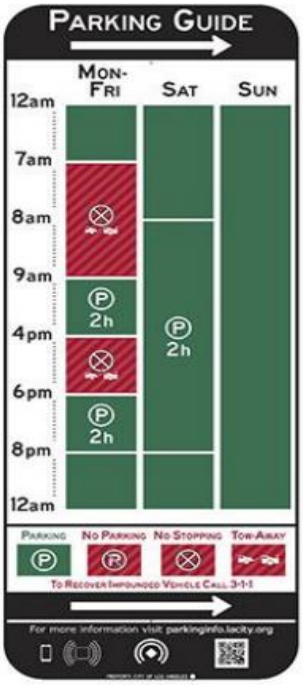


Figure 7-3 Parking Display Sign

7.4.1.2 *Public Parking Lot*

A lack of public off-street parking within the Kleinburg Village core is one of the shortcomings of the Kleinburg study area. Establishing a consolidated parking lot for public use is a solution that has significant support amongst the business and residential communities. It will provide a concentrated supply of parking which is beneficial to drivers and compliments other initiatives. Following both a review of the study area and access to Islington Avenue, an at-grade parking lot north of John Street in the boulevard green space (**Figure 7-4**) was considered the most feasible location for consolidated public

parking in the short-term. This solution can add an estimated 46 parking spaces to the Village parking supply, and bicycle parking can accommodate future mobility options and is proposed to be developed to coincide with works related to the Islington Avenue Streetscape Master Plan.

Figure 7-4 Proposed Consolidated Parking

7.4.1.3 *Paid Parking*

Paid parking entails charging the user of a parking space a set rate to use the space. Rates can vary between minute increments, hourly, daily, and monthly (permit) depending on the intent of the parking spaces. Paid parking can be implemented as a funding source

for the purpose of recovering costs associated with the provision of the space, offset operating costs, and provides a more equitable cost between travel modes.

Alternative modes of transportation (active transportation and public transit) becomes economically attractive with the introduction of paid parking. Typically, generated revenues fund the operation and maintenance of parking spaces with surplus revenue dedicated to additional parking projects and/or TDM measures. To encourage the use of public transit and active transportation off-street parking cost should at least be comparative to taking transit. Currently, parking is free in Kleinburg for all off-street and on-street parking. This solution would require the development and implementation of a pricing strategy for parking within the Village core. Feedback from online surveys and consultation meetings indicate that paid parking is less favoured amongst residents and stakeholders in comparison to other options for the Village. Given the increases in parking supply for the study area paid parking is not recommended for the short-term but will remain a discussion point for implementation in a future horizon.

7.4.1.4 *Public Parking Structure*

Increasing the public parking supply is an important aspect of the short-term horizon. A parking structure, although it can provide a significant increase in public parking whether above or below grade, other factors impact the feasibility of this solution. A significant obstacle to building a parking structure, would be the construction and maintenance cost of said structure. For a typical above-grade concrete structure, construction cost alone can amount to approximately $40,000 per parking stall, increasing for below grade structures.

The Islington Avenue frontage and study area in general provides limited opportunity for the location and development of a parking structure. Additionally, the introduction of a centralized parking structure will eliminate the need for other solutions considered for the short-term making the location of the structure a main trip end and attractor within the Village. The structure may increase the willingness to drive to Kleinburg, the opposite of fostering a more pleasant and pedestrian-oriented experience. The parking structure would lead to a concentration of vehicles in a specific area creating new congestion concerns. Although perceived favourably by residents and stakeholders, parking demand can be adequately addressed by other means that would not require the capital investment

associated with a structure. The need for a parking structure is also not justified by parking demand and supply forecast analysis undertaken in this study.

7.4.1.5 *Parking Partnerships*

Under Public Private Partnerships (PPP) a municipality or public entity would directly lease parking from a private landowner or entity for the use of public parking. This may entail leasing part of or the entirety of that facility for specific time periods or days of the week. These types of stipulations may vary by facility and needs of the parties involved.

For short-term conditions, the Doctor's House is considered a prime candidate to enter a PPP with the City, for use of some of its parking spaces. The Doctor's House site has a total supply of 208 parking spaces that largely remain underutilized when events are not being hosted. As part of the partnership agreement, the City and the owner/operator of Doctor's House will determine the parking supply to be acquired for public use including its management. For the purpose of this study a conservative approach was adopted to determine the public parking supply allocation via PPP. The dedicated PPP supply was based on a percentage of the unused parking spaces during the observed peak demand of the site. A minimum supply 16 spaces was thus allocated for short-term public parking supply increases.

It is assumed that the City would consider PPP agreements with new developments in the short-term and other future horizons based on the need and suitability of those establishments. Implementation would depend on the willingness of private owners to enter into agreements and the ability of the parties involved to reach an agreement.

Existing private parking lots within the study area have an abundance of parking that remain underutilized during weekday off-peak, weekends and school vacation periods. The repurposing or rebranding of parking spaces at these sites can instantly increase public parking supply as parking spaces are in place and readily available. Use of parking at municipal and other properties (i.e. Pierre Berton Heritage Centre, Kleinburg Library, and Kleinburg Public School) are highly favoured by the Kleinburg community. This Study considers repurposing of spaces to be easily attainable or quick wins the City can focus on achieving to bolster parking supplies. Use of these sites, however, must be coordinated with the provision of adequate signage and notification systems to ensure users are fully aware of when parking can be accessed. These existing facilities also provide an opportunity for cyclists to use the existing bicycle parking spaces (such as those at Kleinburg Public School) on weekends.

7.4.1.6 *Parking Lay-bys*

Redevelopment of the Islington Avenue streetscape will bring a number of improvements to the Kleinburg core. One of these improvements is the development of formalized parking lay-bys to provide on-street parking. Redevelopment works were previously

studied through the Islington Avenue Streetscape Master Plan (2011) and have already commenced south of the study area. Parking related concepts and recommendations from the Islington Avenue Streetscape Master Plan were incorporated into this Study to assist in meeting Village streetscape objectives and bolstering the Village's historic feel. The Islington Avenue Streetscape Master Plan does not identify parking recommendations beyond lay-by parking. However, redevelopment works per the Master Plan are considered a viable means of delivering some of the measures to be recommended in the Village's parking strategy.

The parking strategy recommends the elimination of on-street parking between Nashville Road and Stegman's Mills Road, opening up the street frontage along Islington Avenue. Lay-bys for on-street parking are recommended for redevelopment areas of Nashville Road (**Phase 4**), between Stegman's Mills and the Kleinburg Library and north of John's Street along the east side of Islington Avenue. This recommendation will ultimately reduce the Islington Avenue on-street parking supply. The proposed reduction is expected to be mitigated by parking spaces developed north of John Street.

The Islington Avenue Streetscape Master Plan works has been scheduled into four phases (**Figure 7-5**) with a planned duration of 3 to 4 years and will be used as the means to develop lay-by parking. For the purposes of the parking strategy it is recommended that:

- **Phase 1** boundary to be extended to Stegman's Mills Road
- Move **Phase 3** (orange) forward to become **Phase 2**
- Move **Phase 2** (blue) to **Phase 3**
- Extend the boundary of the proposed revised **Phase 2** northward from Lester B. Pearson Street to Treelawn Boulevard

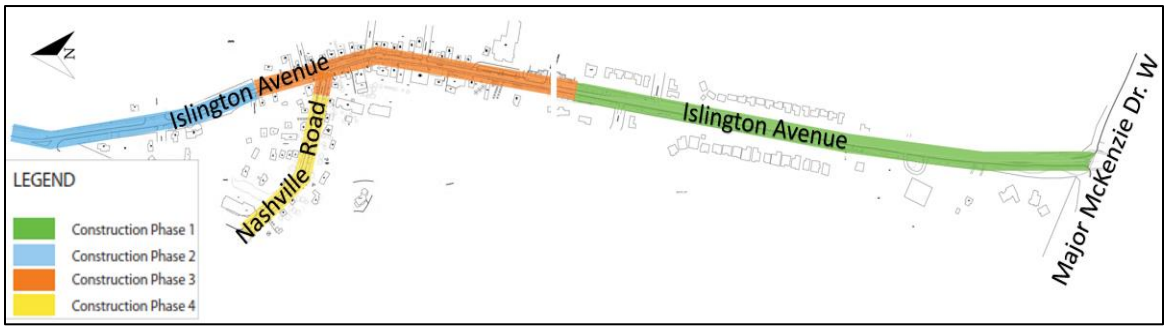


Figure 7-5 Islington Avenue Streetscape Master Plan (2011) Phasing

Ambiguous interlocking blocks currently representing boulevard parking areas will be replaced by formal parking spaces created by lay-bys eliminating the need for vehicles to mount curbs to access parking. Parking lay-bys (**Figure 7-6**) will enhance safety providing clear separation from pedestrians and sidewalks, reducing conflicts between vehicles and active road users.

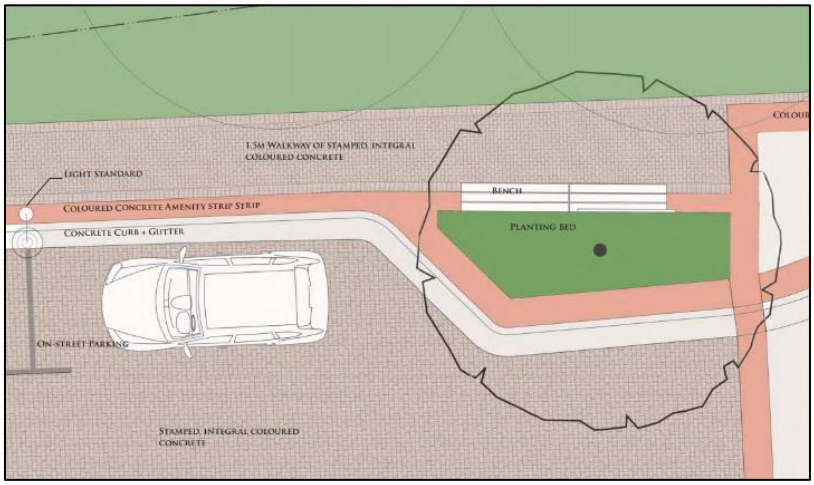


Figure 7-6 Islington Avenue On-street Lay-by Parking

7.4.1.7 *Clear Delineation of Parking Spaces / Pedestrian Areas*

The Islington Avenue streetscape redevelopment will allow for the clear delineation of all regular and accessible on-street parking spaces. The use of different colour pavers or pavement markings can be employed to identify areas for cyclists, pedestrians, and parking. Delineation of parking spaces is illustrated in both **Figure 7-6** and **Figure 7-7**. Although delineation can be implemented relatively quickly, the City may coordinate the implementation of this improvement with planned streetscape works, as it may be the best use of resources.

Figure 7-7 Parking Space Delineation

As part of the streetscape improvements, pedestrian areas will be improved in addition to facilities to accommodate cyclists. Right-of-way (ROW) constraints along Islington Avenue would result in a bike route through the Village core (4.0m wide shared bicycle and vehicle lane per direction). The provision of bicycle parking at strategic locations will be considered as part of Islington Avenue improvements works via the Master Plan.

7.4.1.8 *Bindertwine Park*

Bindertwine Park has an existing parking supply of 64 parking spaces that are largely underutilized by typical visitors to the study area primarily due to its location relative to the core. The parking strategy proposes to promote the use of the Bindertwine Park parking supply for special groups including workers in the core and potentially valet parking for restaurants. By encouraging long stay employees that park in the core to use Bindertwine Park, a number of parking spaces at businesses and the core in general can be freed for short stay customers. This would enhance the Village core with less parked vehicles and can improving parking turnover.

Given the distance of Bindertwine Park to the core, a number of incentives may be required to entice individuals to use this location. A walkway would be required to connect the parking lot for multimodal safety which may not occur in the short-term. Lighting would also be required along the route. Providing bicycle parking, changing facilities, workstations, connections to trails would assist in making the location attractive for cyclists, nature or hiking groups. Free parking or low-cost parking would provide added incentive for all visitors and especially employees who may require parking for long shifts. The City can work with KARA and KBIA to develop schemes to reduce or relocate employees that drive to work to the Bindertwine Park lot.

7.4.2 Mobility/Infrastructure Improvements

7.4.2.1 *Canada Post Community Mailboxes*

The existing Kleinberg Village post office is a main attractor or hotspot area generating a relatively high parking demand. To reduce parking demand at the post office, it is recommended that community mailboxes be introduced to Kleinburg Village. Community mailboxes will reduce the need for a number of residents to visit the post office thus helping to reduce the parking demand at the site.

Community boxes can be located near Kleinburg Village gateways to reduce the need for anyone retrieving mail being required to enter the Kleinburg Village core, depending on their origin point.

This measure is anticipated to be of low cost. Although physical implementation may be easy / low cost, agreement to do so and operations are dependent on Canada Post, an external stakeholder. Thus, the City would not have direct control over the process and implementation timeline.

7.4.2.2 *Wayfinding Strategy and Real Time Parking Technology*

The assessment of existing and short-term parking demand and supply indicate that there is adequate parking capacity to satisfy study area parking demand. The difficulty however lies in visitors being able to efficiently locate parking spaces. The wayfinding strategy must provide highly visible, cohesive signage that will direct visitors to public parking locations. An example from the City of Stratford is illustrated in **Figure 7-8**. Signage can also potentially show real-time parking space availability. To effectively meet wayfinding needs, the location of signage is important as it serves to inform drivers on approach to the core where parking is located and can thus prompt parking decision making and reduce circulation.

Parking maps and directories can be made available on-line and within the Village to provide parking information. Drivers can look up parking supplies based on their intended destination. However, signage within Kleinburg Village can assist in locating alternative parking locations if needed.

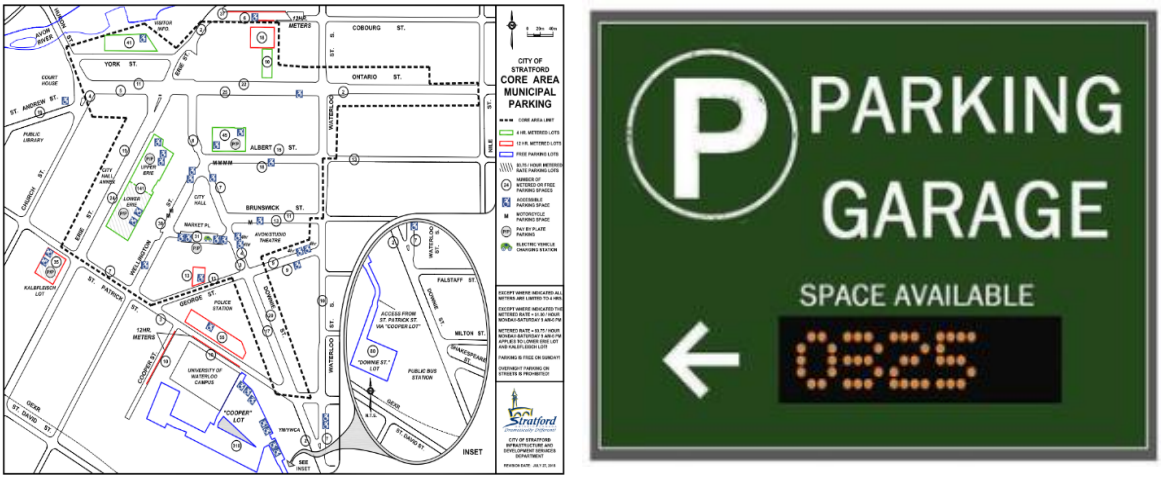


Figure 7-8 Wayfinding and Parking Signage

Real-time parking technology provides real-time information on whether a specific parking space is occupied or empty. The City can engage in a pilot program to test this wayfinding technology to gauge suitability for the core. The technology will allow drivers to see exactly which locations have the most available parking spots, before they get there. The technology may also provide the City with the benefit of aiding parking enforcement. As parking data could be used to help the City issue parking tickets if a vehicle has been in a parking space for longer than the permitted parking regulations. Over time, parking data collected can help to detect trends, build reports and track parking usage. Wayfinding



solutions and real-time parking technology are recommended for improving short-term parking.

7.4.3 Evaluation and Summary

Proposed solutions for the short-term were reviewed using criteria identified in **Figure 7-2**. Each criteria measure was rated using a scale of *good*, *fair* and *poor* as part of the evaluation. An average rating of all criteria measures was determined for each solution and used to identify the parking strategy for each horizon. The evaluation of short-term solutions has been summarized in **Figure 7-9**. Detailed evaluation tables for the short-term solutions is provided in **Appendix F**.

Category	Criteria	Parking Restriction Signage	Public Parking Lot	Paid Parking (village core)	Parking Structure	Parking Partnerships	Parking Lay-by	Clear Delineation of Parking Spaces / Pedestrian Areas	Use of Bindertwine Park	Wayfinding Strategy	Canada Post Community Mailboxes
		Parking Solutions								Mobility / Infrastructure Improvements	
Technical	Parking Capacity	Fair	Good	Poor	Fair	Good	Good	Fair	Good	Fair	Good
	Traffic Operations	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Fair	Fair	Good
	Sustainable Transportation, Safety and Accessibility	Fair	Good	Fair	Fair	Fair	Good	Good	Fair	Good	Fair
	Planning and Policies	Good	Good	Fair	Poor	Fair	Good	Good	Good	Good	Good
Social	Business / Development	Fair	Good	Poor	Fair	Good	Good	Fair	Good	Fair	Good
	Public Perception	Good	Good	Poor	Fair	Good	Good	Good	Fair	Good	Good
Cost / Finance	User cost	Good	Good	Poor	Poor	Good	Good	Good	Good	Good	Good
	Implementation	Good	Fair	Fair	Poor	Fair	Fair	Good	Fair	Good	Fair
	Operating Costs / Enforcement	Good	Fair	Fair	Poor	Good	Fair	Fair	Fair	Good	Good
	Average Score	Fair	Good	Poor	Poor	Good	Good	Fair	Fair	Good	Good

Key

Poor Fair Good

Figure 7-9 Short-term Solutions Evaluation Summary

The parking strategy for the short-term horizon is to consist of solutions rated fair or good with implementation across the five-year horizon. The following key solutions are anticipated to be introduced through the Islington Avenue Streetscape reconstruction and therefore will be introduced gradually over the short-term horizon:

- **Public Parking Lot** (centralized facility north of John Street on the east side of Islington Avenue)
- **Parking Lay-By**
- **Wayfinding Strategy**

Solutions with a poor rating have not been considered for implementation as part of the short-term strategy but can be considered for future horizons. All short-term solutions rated as ***good*** or ***fair*** are considered viable for implementation as part of the short-term strategy based on their expected impact on existing parking conditions.

A number of the short-term solutions will require individual negotiations with landowners and/or agencies such as property owners to explore PPPs, and with Canada Post to explore installing super mailboxes. It is also recommended that through the Islington Avenue Streetscape project that bicycle parking rings or racks be provided along the Islington Avenue corridor, and within public spaces close to cafes and shops given there are currently limited bicycle parking opportunities in the Village today. Although a shared bike route is proposed for Islington Avenue, streetscape works should further investigate if there are opportunities to provide dedicated cycling facilities on Islington Avenue, including cycle tracks and/or bike lanes.

7.4.4 Short-term Parking Supply Projections

The study area parking supply for the short-term was estimated using existing supply, conversions of existing facilities, constructing a new parking facility, engaging in public-private partnerships and parking forecasted for new developments. The net differences then indicate local surplus or deficits in the supply. The process was undertaken using the steps outlined in **Table 7-2**. Public parking supply opportunities outlined below and are detailed in **Appendix E.**

Table 7-2 Short-Term Changes in Parking Supply

Measure Impacting Parking Supply	Additional Parking Supply
Public On-Street	
Removal of on-street parking along Islington Avenue between John Street and Stegman's Mill Road as part of Streetscape Masterplan	-53
Additional on-street parking south Stegman's Mill Road due to Streetscape Master Plan	+1
Public Off-Street	
Development of new centralized parking north of John Street in boulevard green space	+46
Public Private Partnership with Doctors House considered a viable option	+16
Pierre Berton Centre rebranded as public parking and increase of supply from 17 to 21	+4
Kleinburg Public School and Kleinburg Library parking spaces to be repurposed	No Change
Repurpose Bindertwine Park to provide parking to public	No Change
Future Developments	
Proposed developments parking supply	+126
Additional developments expected	+22
Total Additional Parking Supply	**+162**
Existing Parking Supply	**754**
Total Short-Term Supply	**916**

Parking supply changes shown in **Table 7-2** have been summarized in **Table 7-3** by Block. A detail breakdown of the short-term supply can be found in **Appendix E.**

Table 7-3 Short-Term Parking Supply by Block

Block	Key Site	Existing Supply	Change in Parking Supply	Short-Term Horizon Supply
E01	North of John Street	21	-6	15
E02	Former Starbucks	81	+22	103
E03	Fitness Centre	80	-1	79
E04	Kleinburg Public School	103	-2	101
E05	Library	18	+3	21
E06	Bindertwine Park	64	0	64
N01	North study limits	0	+46	46
S01	South study limits	0	0	0
W01	RBC Bank	33	+63	96
W02	Doctors House	214	0	214
W03	Post Office	123	-15	108
W04	Pierre Berton Centre	17	+52	69
W05	Residential	0	0	0
Total Supply		**754***	**+162**	**916**

* Includes parking from Bindertwine Park (located beyond a 5-minute walk of the core). Since the recommendations involve exploring parking opportunities at Bindertwine Park, the parking supply/demand has been included here.

As shown in **Table 7-3**, the short-term parking supply is expected to increase by a total of 162 parking spaces. Negative changes in supply are due to removal of on-street parking along Islington Avenue to coincide with streetscape works. Displacement of core on-street parking is mitigated by providing new parking spaces within the boulevard north of John Street shown in **Figure 7-4**.

The quantity of on-street parking supply is expected to remain relatively stable over the next five (5) years. The distribution and form, however, is expected to change significantly for the short-term. As well, the parking strategy serves to advance initiatives to provide service to a broader range of mobility modes which include cycling, walking and micro-mobility.

Changes in the streetscape are expected to result in the development of lay-by parking spaces south of Stegman's Mill Road on the east side of Islington Avenue. This will result in well-defined, safer parking stalls being provided to the residents of Kleinburg – thereby addressing one of the key concerns raised in both public engagement and online surveys (both in **Phase 1** and **Phase 2** of the Study).

7.4.5 Short-Term Parking Demand and Supply Summary

Forecasted peak period parking demand (**Table 5-5**) was compared to forecasted future parking supply to determine future occupancy levels. A review of short-term horizon parking demand and supply for study area is shown in **Table 7-4.**



Table 7-4 Demand and Supply Summary – Short-Term

Block	Key Site	Total Demand	Total Supply	Surplus / Deficit	Peak Occupancy (%)
E01	North of John Street	5	15	10	34%
E02	Former Starbucks	39	103	64	38%
E03	Fitness Centre	46	79	33	58%
E04	Kleinburg Public School	70	101	31	69%
E05	Library	3	21	18	16%
E06	Bindertwine Park	32	64	32	50%
N01	North study limits	19	46	27	41%
S01	South study limits	0	0	0	0%
W01	RBC Bank	83	96	13	86%
W02	Doctors House	116	214	98	54%
W03	Post Office	62	108	46	58%
W04	Pierre Berton Centre	63	69	6	91%
W05	Residential	0	0	0	0%
Total Supply		**538**	**916**	**378**	**59%**

At the end of the short-term planning horizon, it is forecasted that there will be a total surplus of 378 parking stalls in Kleinburg Village. Short-term total occupancy is forecasted at 59%, which is within an effective parking supply level of 80% occupancy. The increase in parking demand and an unchanged parking supply would have resulted in an occupancy of 71%. The new parking supply provided for the short-term horizon enables the Village to better accommodate future parking demand. From the forecasted analysis, it can be stated that overall, there is sufficient parking capacity within Kleinburg Village to accommodate demand and the parking strategy needs to focus on the efficiency of available parking spaces.

The core area hotspot identified in

Figure 4-1 will dissipate during the short-term due to the removal of on-street parking in the core and provision of the majority of public parking spaces to the north and south of the core area. Consolidated public parking closer to the core will be become highly desirable for drivers based on their planned destination. As a result, parking proposed in areas such as the Pierre Berton Heritage Centre will display high occupancy levels (91%) as shown in **Table 7-4**.

The short-term planning horizon's parking projection and strategy is summarized in **Figure 7-10** and is framed by the following:

- The current situation in the study area will be impacted largely by the already approved reconstruction of the streetscape along Islington Avenue. Displaced

core parking will be mitigated by new parking north of the core and a new lay-by on-street parking strip along the east side of Islington Avenue from south of Stegman's Mill Road to just north of the library. The new lay-by design will provide better delineated parking stalls, a buffer for pedestrian (safety), and is compatible with non-vehicle modes of travel such as cycling along Islington Avenue.

- Redevelopment works due to the Islington Avenue Streetscape Master Plan will necessitate a change in the current **behaviour** of visitors in terms of walking distance to and from parking spaces and destinations. This change could promote the optimization of parking spaces located at Bindertwine Park. Demand due to seasonal, daily and time of day variations provide an opportunity to promote these spaces to monthly parkers – those who work in the core. In this way, vital on-street and on-site parking space could be made available for visitors.
- A clearly defined role to be taken by the City from the short-term in the Village in terms of management of public parking operations. This functional role will be charged with the task of commencing negotiations and assessment of potential centralized off-street parking assets.
- A net study area parking surplus of 378 parking spaces will satisfy parking demand. However, some remedial measures to optimize the City of Vaughan's parking inventory such as clear signage to indicate the availability and operation of these sites for the general public, and enforcement of the parking regulations should serve to begin to address this key component of the strategy in the short-term.

Figure 7-10 Short-term Strategy Summary

Short-Term
1 to 5 years

Recommendations

- **Parking restriction signage** including immediate temporary measures to clarify use of parking space availability should be implemented
- **Parking partnerships are recommended** as they provide a continuous means of increasing parking supply, via area developments requiring no construction by the City and spaces are readily available. Partnership agreements should be arranged as soon as possible
- **Community mailboxes** should be implemented whenever possible following discussions on requirements and agreement with Canada Post
- New **public parking lot** north of John Street, proposed **lay-by parking**, **delineation** of regular and accessible public parking spaces, provision of **pedestrian and cyclist** facilities to coincide with the Islington Avenue Streetscape Master Plan works
- **Wayfinding** signage, maps, and real time parking pilot program are recommended as early as possible with updates to capture new supply increases
- **Bindertwine Park** usage is an improvement to be encouraged and introduced gradually with consultations with KARA and KBIA
- Coordination with the Islington Avenue Streetscape project to provide active transportation improvements including bike parking and cycling facilities

Not Recommended

- **Paid parking** and development of a **parking structure** have been considered as not being appropriate for the Village and have **not recommended** to be included in the short-term parking strategy

7.5 MEDIUM-TERM

The medium-term solutions build on the direction established by the short-term solutions, which involve better aligning the Kleinburg Village parking and transportation infrastructure with the built-form and character. The medium-term solutions begin to focus on a stronger transition towards the pedestrian experience in Kleinburg Village. To achieve this, the medium-term solutions also focus on enhanced management of the parking supply and encouraging a shift in parking and travel behaviours. The detailed site observations and surveys, consultation, and future parking projections reveal there is an opportunity to achieve this transition and shift.

7.5.1 Parking Solutions

7.5.1.1 *Paid Parking*

Building on the short-term considerations, the implementation of paid parking was reviewed as a potential medium-term measure. Considered a fundamental aspect of a parking management strategy, parking spaces should serve as many customers as possible. Prime on-street parking space should be marketed to customers who have shorter durations of stay. Shorter durations allow for high turnover which is a much sought-after business goal of a self-sustaining revenue producing parking operation. High turnover means higher revenues, but more importantly the parking service will reach out to a broader customer base.

Currently, both on-street and off-street parking in Kleinburg Village are provide at no user cost. On-street parking spaces have a 3-hour time limit whilst privately-owned off-street parking have varying times but generally 2 to three 3 hours for customers. Paid parking is common in parts of the Greater Toronto Area (GTA) and a comparative review in **Table 7-5** indicate user cost of on-street parking in other similar village / downtown areas.

Table 7-5 On-Street Parking Fees and Time Limits (Other Jurisdictions)

Jurisdiction	Hourly Rates	Maximum Rate
Bronte Village (Oakville)	$1.50 per hour	$7.00 all day
Port Credit (Mississauga)	$1.50 per hour	$5.00 for 3 hours
Downtown Burlington	$1.75 per hour	$5.25 for 3 hours

A common strategy for long stay off-street parking is for parking costs to mirror the cost of a local monthly transit pass. A York Region Transit (YRT) monthly pass has a cost of $154, therefore a parking pass for off-street parking should be set to a minimum of $154 per month. This strategy is geared toward encouraging active transportation and public transit usage. Parking rates can be applied to control demand and duration of use, therefore parking strategy rates should have:

- On-street parking space time restrictions and rates that are more expensive than off-street spaces
- Off-street rates that are lower than on street rates with options for a daily rate and monthly permits.
- Off-street parking options further from the core have cheaper pricing options or provide free parking to encourage parking and walking into the core
- Monthly rates are similar to a monthly YRT pass
- Enforcement of parking space regulations and time restrictions

7.5.1.2 *Public Parking Structure*

The assessment of short-term parking demand and supply resulted in a surplus of 378 parking spaces beyond the study area demand (59% total peak occupancy). For the medium-term, forecasts for the Village continue to indicate a parking surplus will be maintained. Anticipated parking demand for the medium-term does not support the need for investments required to deliver a parking structure. Additionally, even with paid parking proposed for the Village core, it is not anticipated parking levels would generate sufficient revenue to fund the cost of a structure.

7.5.1.3 *Parking Partnerships*

Parking partnerships established under short-term conditions are expected to be maintained during the medium-term horizon. It is expected the City would investigate and pursue PPP agreements with new developments in the medium-term based on Village needs and suitability of those establishments. Implementation of such agreements will continue to depend on the willingness of private owners to enter into such agreements and the ability of the parties involved to reach an agreement. Incentives provided by the City for developers as early as the planning approval stage may encourage participation.

7.5.1.4 *Consolidated Private Parking*

Shared parking policies present an opportunity to limit the amount of parking provided within a mixed-use site. The study area has a mix of land uses which include retail, service, restaurant, institutional, recreational, and other uses. Due to the nature of their operation these different uses will peak at different times during a weekday or on a weekend. This concept cannot, however, be applied to land uses that share similar peak demand times.

Shared parking facilities can therefore effectively accommodate parking for various land uses rather than parking being provided for each site. Shared parking opportunities can thus be achieved by adjacent private lots through the cooperation of the owners which can benefit existing, new or infill developments. An example of this would be opening up access and parking between an office and restaurant. The office can take advantage of

surplus restaurant parking during weekdays Monday to Friday. The restaurant on the other hand can benefit through a reciprocal arrangement taking advantage of the surplus office parking on evenings and on weekends. Other benefits that can be yielded from such an agreement include, increased parking supplies via a more efficient layout and potential to reduce or eliminate dead ended aisles. Shared parking guidelines are provided in the City's Draft Comprehensive Zoning By-law and can be applied in Kleinburg where appropriate. Approval of such consolidation would be made on a case-by-case basis by City staff.

7.5.1.5 *Parking Authority*

The directive of a Parking Authority would be to address and manage parking conditions, use and guidelines. Implementation of a Parking Authority allows for faster decision making and helps to alleviate responsibilities from the municipality. A Parking Authority would be responsible for the management of user fees which ideally would be used to recover costs. It allows for control over parking supply and parking decisions.

A necessary component of parking management is the enforcement of parking regulations, particularly as they relate to the restriction of time spent on parking spaces. Parking enforcement has an important role to play in parking management by optimizing the supply of parking spaces provided to the public. Regular enforcement officer patrols are necessary for the following reasons:

- Deter and discourage abuse by motorists that over-stay the time limits or refuse to pay the metered rate
- Improve pedestrian safety (i.e. vehicles parking on sidewalks or creating obstacles or blocking intersections)
- Enforcement team members provide useful field observations on the performance, the maintenance, and the feedback on the parking operation from the customers
- Promote community safety by ticketing vehicles parking illegally near fire hydrants, fire routes or stalls reserved for motorists with disabilities
- Ensure the efficient delivery and exchange of goods and services to businesses by enforcing loading zones

The creation of a Parking Authority in the medium-term will establish a body to control parking related decisions, managing required enforcement, monitoring of parking demands and overseeing construction of a municipal parking structure, if required. Given parking surpluses in the short-term, which are anticipated to continue in the medium-term this study does not recommend the development of a Parking Authority, however monitoring and review for its need is advised.

7.5.2 Mobility/Infrastructure Improvements

7.5.2.1 *Interconnected Bike / Pedestrian Paths*

Active transportation initiatives are encouraged in municipalities across Ontario as viable alternatives to private vehicle travel for health, safety, economic, environmental and tourism reasons. Pedestrian and bicycle facilities in the form of sidewalks, trails and paths are present within Kleinburg Village. However, gaps and lacking connectivity in networks leaves room for improvement. Providing safe, adequate, convenient facilities and bicycle parking are important in supporting and encouraging walking and cycling as a regular transportation mode for residents and visitors.

Redevelopment of the Kleinburg Village core streetscape as outlined in the Islington Avenue Streetscape Master Plan (**Figure 7-11**) is an ideal opportunity for providing safe access for pedestrians and cyclists, supported by good urban design principles. For the short-term, pedestrian and bicycle facilities would have been improved in the study area as part of improvements per the Islington Avenue Streetscape Master Plan. For the medium-term, measures will identify and close prevailing gaps in pedestrian and cycle networks, integrate and expand networks where possible and include improvements along Stegman's Mill Road and its connectivity to Islington Avenue.

Improved facilities along Stegman's Mills Road will enhance network connectivity to the core area. Potential upgrades can include:

- Continuous multi-use path
- Lighting
- Signage
- Connection to Bindertwine Park and existing trail

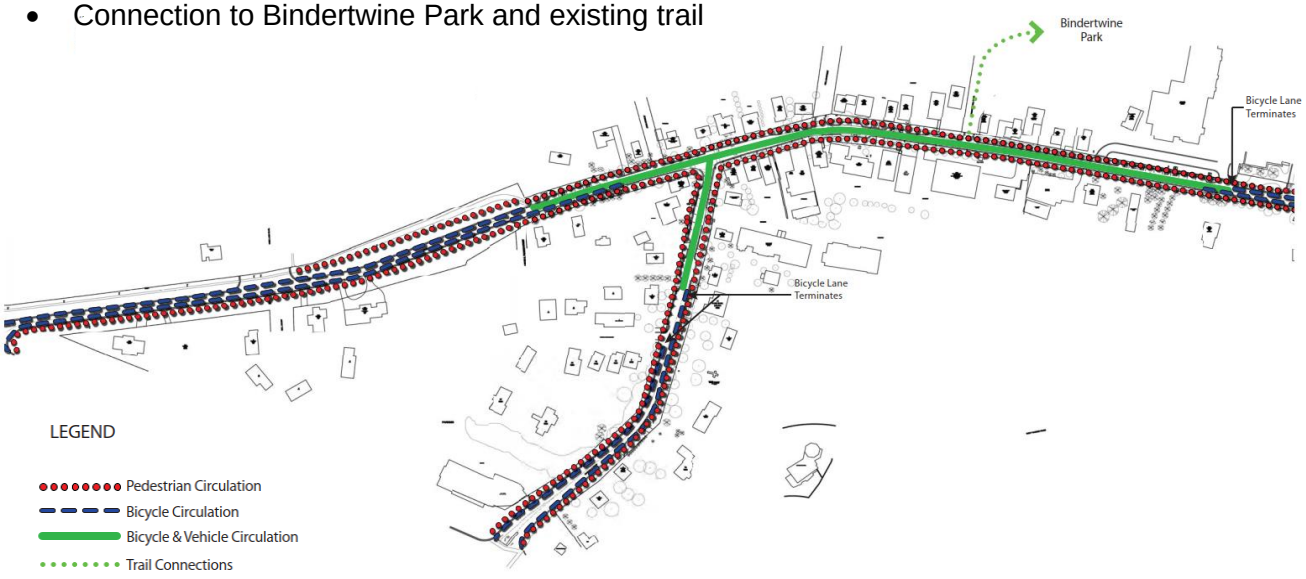


Figure 7-11 Pedestrian Bicycle and Vehicle Flow

7.5.2.2 *Village Square (Pedestrianized)*

A Village square / centre with a pedestrian-oriented public realm will help to give Kleinburg Village and the core itself a focal point acting as a hub of pedestrian activity. The de facto focal point of the core for everyday congregation has been the area surrounding the former Starbucks (now closed) and Cookie Crumble Café in the vicinity of the Kellam Street and Islington Avenue intersection. A formal area that is pedestrian friendly, designated for residents and visitors to meet and interact would greatly enhance the core's public realm. In recent times, cities and neighborhoods have made decisions to create improved pedestrian spaces as a means of promoting public health.

A technique at times referred to as Lighter, Quicker, Cheaper (LQC), has been employed in street-to-plaza conversions. The technique involves using simple elements like moveable tables, umbrellas and chairs, colorful patterned surface treatments and plantings, and lively and entertaining programming to create more publicly accessible open space. Although the core has lost Starbucks, (closed in February 2020) it is recommended that the Kellam Street and Islington Avenue area continue to function as the central gathering area for the core, with the space in front of the Cookie Crumble Café to be considered as the core's public focal point. The area recommended for this public focal point is shown in **Figure 7-12**.

Figure 7-12 Proposed Village Square Location

It is noted that the area identified may be that of the property owners of the business establishments of that area and progression of this concept would need owner approval and partnership agreements with the City. This or a similar areas can also potential be obtained for use via development applications for future redevelopment of the property. The City can also convert a small number of lay-by parking spaces to pop-up public spaces.

A significantly important aspect is the temporary nature of LQC projects, as such property owners would not be inundated by permanent fixtures through partnership agreements. The ability to create and test a project immediately is credited as one of the greatest advantages of LQC. The area can be used in a number of ways, temporary road closures can be instituted when needed which can also facilitate discussions and planning regrading re-evaluating the role of Islington Avenue as a commuter throughway versus a main street (to be incorporated with the Islington Avenue Streetscape Master Plan).

A flexible approach such as LQC allows for a variety of uses and alterations for the designated space, which can have annual or seasonal themes for the public space and benefit of the community. LQC projects are typically temporary and relatively inexpensive in nature, and can set the foundation for long-range projects. Examples of the application of this concept around the global are shown in **Figure 7-13.** Implementation of LQC projects can:

- Encourage community buy-in (by demonstrating, how a new street design would impact traffic flows not only for cars, but also for pedestrians, cyclists, and public transit)
- Break down resistance to change, while empowering vulnerable or overlooked communities who may have lost faith even in the possibility of change
- Establish (or re-establish) a neighborhood or region's sense of community
- Bring life and amenities to previously lifeless public spaces
- Generate the interest of potential investors, both public and private
- Inform best practices for later planning efforts
- Bring together diverse stakeholders in generating solutions and a collective vision
- Foster a community's sense of pride in and ownership of their public spaces

Figure 7-13 Global Examples of LQC Projects

7.5.2.3 ***Real Time / Dynamic Wayfinding Systems***

Solutions for the short and medium-term would have increased the Kleinburg Village parking supply levels and added consolidated public parking to core locations, a feature that was previously lacking. Engaging in a pilot programme for real-time parking technology was recommended for the short-term. A full roll-out of this technology is further suggested for the medium-term. Finding a parking space in the shortest time possible is favourable for drivers, and benefits traffic operations. Real-time parking technology makes this possible for drivers using software that can be incorporated into applications (apps) for mobile devices and can be managed by the Village's potential Parking Authority or the City itself.

Sensors will transmit signals through a wireless network to indicate whether a vehicle is parked in the spot or not and drivers can use the mobile app to drive directly to that space.

This technology is currently being trialed in the City of Stratford where sensors are buried in the pavement and maps (**Figure 7-14**) are accessible via the City's website. The trial began with 78 downtown spaces and the City has plans to expand the trial to additional locations in the downtown area.

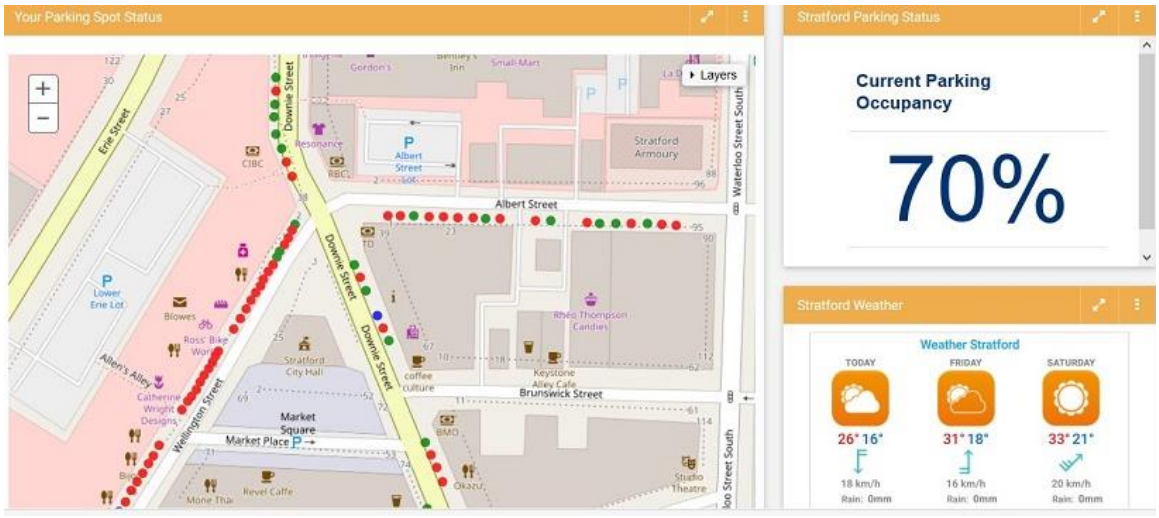


Figure 7-14 Real-time Parking Data Sample

Due to the easy install of the sensors for all public parking spaces, even new spaces added to any PPP can easily be added to real-time network. Integration of this system is proposed for dynamic information kiosks within the Village, providing parking maps and parking availability information.

7.5.2.4 *Eco-mobility and Micro-mobility*

Eco-mobility (EM) is a term used to describe travel through integrated, socially inclusive environmentally friendly options. Transportation options include walking, cycling, public transportation, shared mobility, and light green vehicles. Eco-mobility travel highlights the importance of public and non-motorized transport and promotes an integrated use of all travel modes. The effectiveness of implementing eco-mobility may manifest via reduction of emissions, travel delays, and accident rates. Expressed as an equation $EM=[(TD+AM+TM+GT+IP)^{S}]$, EM identifies a horizontal relationship between five key eco-mobility strategies, while recognising the exponential potential of both stakeholders (S) and leadership (L). The five (5) key eco-mobility strategies are:

1. **TD**: transit-oriented development – development of public terminals that can be accessed by active transportation means
2. **AM**: active mobility (non-motorized transportation) – environments that are safe and friendly for cycling and walking. Wheelchairs and lightweight mobility scooters for the disabled or elderly should be considered as part of this category

3. **TM**: transport management – includes traffic management, real-time dynamic route planning and parking management
4. **GT**: green transport – integrating bike, bus, metro and walk (BBMW) to improve active mobility and public transit systems with more integrated and convenient services
5. **IP**: Integrated pricing schemes – reflective cost of using each transportation mode

Micro-mobility generally refers to short commutes of less than 5-10km and use of vehicles that don't exceed 24 km/h. Micro-mobility aims to solve the transportation problems of cities and urban spaces and is a growing trend due to the level of convenience, affordability and environmental friendliness. It is considered an effective solution for last mile transportation. E-scooters and e-bikes fall into this category, using clean energy like rechargeable batteries to fight climate change and provide a sustainable means of transportation.

Eco-mobility and micro-mobility are recommended for Kleinburg Village and can be easily integrated with other strategies and provide a steppingstone for initiatives targeting transit use, and curbside management of car and ride-share programs. This solution can share infrastructure developed as part of works completed for the Islington Avenue Streetscape Master Plan. Alternatively, provisions in these works can protect for their future introduction. Stations within a defined micro-mobility area will be available to transport visitors entering or exiting area. This strategy can be used as a means of providing connections to parking areas further form the core and make the use of those lots more attractive. Micro-mobility stations at the parking lot north of John Street and Bindertwine Park will provide connections to the proposed focal point of the core at Cookie Crumble Café which can function as a hub for Eco-mobility and micro-mobility options. Travel options should consider the needs of intended end users providing safe and inclusive options. An illustration of the micro-mobility area, stations and possible transportation options are shown in **Figure 7-15**. Membership programmes can be used to target the average resident and employees that reside in the Village, fostering travel mode change.

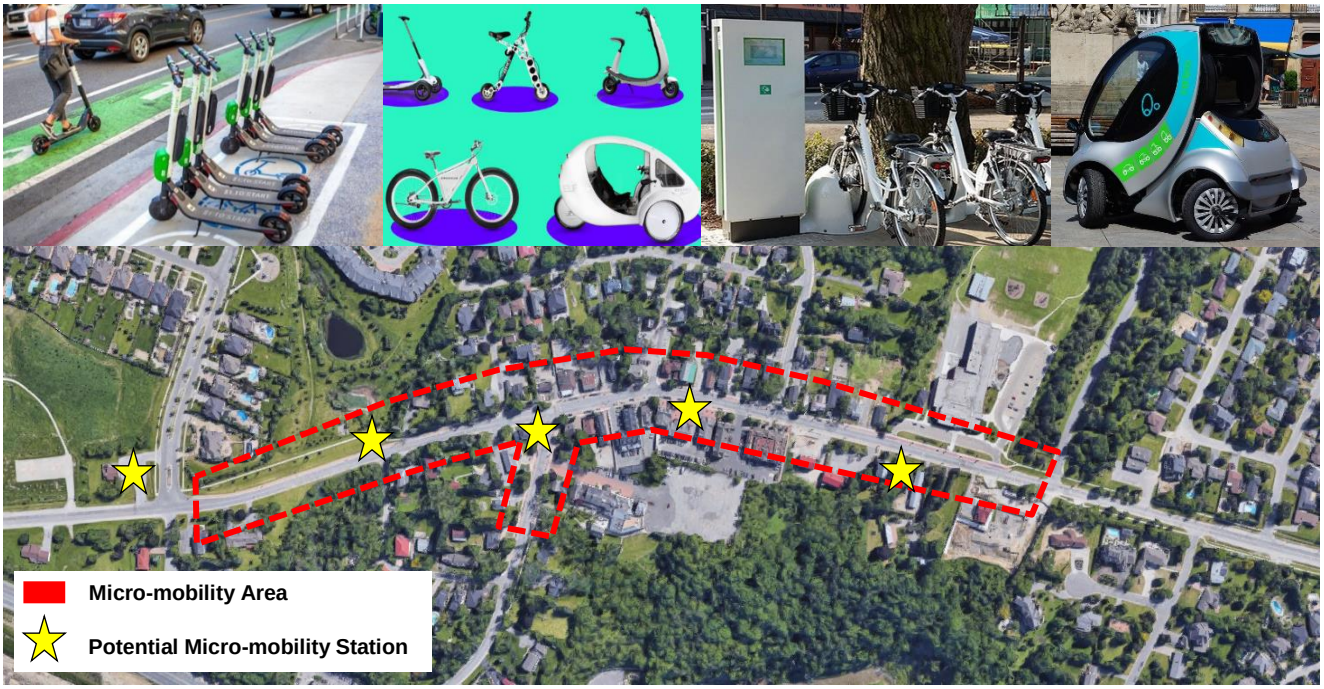


Figure 7-15 Potential Micro-mobility Stations and Area

7.5.3 Evaluation and Summary

Similar to short-term conditions, solutions proposed for the medium-term horizon were reviewed using criteria identified in **Figure 7-2**. A total of nine (9) solutions were proposed for the medium-term. Evaluations resulted in four (4) solutions having an average rating of good and the remaining five (5) solutions scoring a fair rating. The evaluation of medium-term solutions has been summarized in **Figure 7-16**, with detailed evaluation tables provided in **Appendix F**.

Implementation of a Parking Authority and paid parking however featured a number of criteria that ranked poorly. Although moving forward they may form an integral part of the medium-term strategy, feedback from online surveys and public consultation indicates that a number of respondents are not supportive of these options.

It is recognized that parking enforcement carries a negative perception because of the potential consequences of parking infractions. Parking enforcement can, however, improve safety and provide broader benefits to the community. Paid parking is expected to be met with resistance as individuals are accustomed to driving to Kleinburg Village and parking for free. Whilst paid parking may deter some visitors, the low cost, growing travel options and promotions of alternative modes may influence change in the Village. As the City monitors parking demand and conditions through the medium-term horizon, the option of implementing paid parking may be considered and explored.

		Parking Solutions					Mobility / Infrastructure Improvements			
Category	Criteria	Paid Parking (village core)	Parking Structure	Public Private Partnerships	Consolidated Private Parking	Parking Authority	Interconnected Bike / Pedestrian Paths	Village Square (Pedestrianized)	Real Time Parking / Dynamic Wayfinding Systems	Eco-mobility & Micro-mobility
Technical	Parking Capacity	Fair	Fair	Good	Good	Poor	Fair	Fair	Fair	Good
	Traffic Operations	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Poor
	Sustainable Transportation, Safety and Accessibility	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good
	Planning and Policies	Fair	Poor	Good	Fair	Good	Good	Good	Good	Good
Social	Business / Development	Poor	Fair	Good	Fair	Poor	Fair	Good	Good	Fair
	Public Perception	Poor	Fair	Good	Fair	Fair	Good	Fair	Good	Good
Cost / Finance	User cost	Poor	Fair	Good	Good	Fair	Fair	Good	Good	Good
	Implementation	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Good	Fair
	Operating Costs / Enforcement	Fair	Poor	Good	Good	Fair	Fair	Good	Good	Good
	Average Score	Fair	Fair	Good	Fair	Fair	Fair	Good	Good	Good

Key

Poor Fair Good

Figure 7-16 Medium-term Solutions Evaluation Summary

Solutions rated as good are recommended for implementation. Although rated as fair, consolidated private parking and interconnected bike / pedestrian paths are also recommended to form part of the parking strategy. The recommended measures increase Village parking capacity, and provide the best means of improving the parking dynamic, mobility and operations in the Village.

7.5.4 Medium-term Parking Supply Projections

Medium-term projections assumes that measures proposed as part of the short-term planning horizon parking strategy (detailed in **Section 5.2**) are in-effect. All new parking in this horizon is generated by new development. Parking spaces required for new non-residential developments were developed based on the City's Draft Comprehensive Zoning By-law update (see **Appendix E**). The updated Draft Comprehensive Zoning By-law provides parking requirements specific to Kleinburg Village for various land uses.

The total projected medium-term parking supply is summarized in **Table 7-6,** which is based on by-law parking rates and changes in GFA summarized in **Table 5-6**.

Table 7-6 Medium-Term Parking Supply Summary in Study Area

	Parking Supply (parking spaces)
New Non-residential Development Parking Supply	+98
Total Short-Term Horizon Parking Supply	916
Total Medium-Term	**1,014**

An addition of 98 parking spaces for the medium-term, results in a total parking supply forecast of 1,014 parking spaces for Kleinburg Village.

7.5.5 Medium-Term Parking Demand and Supply Summary

Medium-term demand was assessed by applying similar procedures described in the short-term projections. The difference in calculation is that peak period attraction rates used in calculating the demand were based on the high-end range (+11%) as presented in **Table 5-3**. The high-end attraction rate provides a conservative demand and will capture any spikes in demand during peaks.

Based on the assumptions made above and land use changes expected, supply and demand summaries for the medium-term horizon are presented in **Table 7-7.**



Table 7-7 Demand and Supply Summary – Medium-Term

Block	Key Site	Total Demand	Total Supply	Surplus / Deficit	Peak Occupancy (%)
E01	North of John Street	6	15	9	40%
E02	Former Starbucks	74	125	51	59%
E03	Fitness Centre	76	98	22	78%
E04	Kleinburg Public School	96	113	17	85%
E05	Library	14	21	7	67%
E06	Bindertwine Park	42	64	22	66%
N01	North study limits	31	46	15	67%
S01	South study limits	0	0	0	0%
W01	RBC Bank	77	96	19	80%
W02	Doctors House	129	214	85	60%
W03	Post Office	118	153	35	77%
W04	Pierre Berton Centre	68	69	1	99%
W05	Residential	0	0	0	0%
Total Supply		**731**	**1,014**	**283**	**72%**

At the end of the medium-term planning horizon, it is expected that there will be a total surplus of 283 parking spaces in Kleinburg Village. Medium-term total occupancy is forecasted at 72%, and continues to be within effective parking supply (80% occupancy level). The parking strategy for the medium-term is expected to provide an adequate level of parking in the study area by utilizing medium-term parking supplies to meet demand.

In addition to non-residential occupancies expressed in **Table 7-7** the Village is expected to experience residential intensification in each of the study horizons. Although not reflected as part of this analysis, residential parking supplies will be required to satisfy Zoning By-Law requirements for the Village which are expected to satisfy demand.

Study analysis show that utilization is highest in Block W04. In addition to demand generated within the Block, it is in very close proximity to the centre of the core and as such is a highly desirable parking location as it allows for the shortest walking distance to destination.

Figure 7-17 below summarizes the medium-term strategy based on the forecasting findings.

Figure 7-17 Medium-term Strategy Summary

Medium-Term
5 to 10 years

Recommended

- Opportunities to engage in **parking partnerships** should continue to be explored and monitored, establishing partnership agreements with suitable developers to continue to meet study area parking needs
- A full roll-out of the **real-time parking** program should be undertaken for the medium-term to provide parking efficiency within the study area
- **Interconnected bike / pedestrian paths** facilities and connections should be improved/implemented as early as possible for user safety benefits
- A pedestrian friendly **Village square** can be explored providing a focal point for the core, enhancing the Village's public realm
- **Eco-mobility and micro-mobility** options will provide connection through the core, removing individuals from their vehicles
- **Consolidated private parking** opportunities should be pursued where possible to capitalize on the use of shared parking supplies

Not Recommended

- Development of a **parking authority** is not a direct recommendation of this study, however monitoring for its future need should be considered
- **Paid parking** within the Kleinburg Village core is not viewed favourably by most residents, workers, and visitors, and given the parking surpluses for the horizon only monitoring for future consideration is advised
- Development of a **parking structure** was again considered not a viable option and was not recommend for the medium-term parking strategy

7.6 LONG-TERM

The long-term solutions intend to continue the evolution encouraged by the medium-term solutions, which involves further enhancing the pedestrian experience and fostering a true historic village feel. The long-term solutions intend to strategically manage parking demand and influence travel behaviours. Infrastructure improvements are intended to respond to changing needs in the Village, given the distance of the 2041 horizon.

7.6.1 Parking Solutions

7.6.1.1 *Paid Parking*

Implementation of paid parking has not been recommended for the reviewed short- or medium-term and has been considered again for the long-term. The long-term horizon considers paid parking being applied throughout the Village. The measure would require developing a pricing strategy for areas beyond the core and also identifying which areas or streets (zones) within Kleinburg Village would be exempt from payment for parking.

The structure of pricing strategies would be required to encourage parking at Bindertwine Park and the parking north of John Street. Pricing strategies can be extended to include parking permits for residents and employees to benefit from their status by not parking within the core.

7.6.1.2 *Redevelopment of Old Fire Hall*

Continued development within the Kleinburg Village core is forecasted for the long-term, and with this development additional parking demand may be generated. The Old Fire Hall site located in the northeast corner of the Islington Avenue and Treelawn Boulevard intersection and is currently unoccupied and owned by the City of Vaughan. It is estimated that this site can provide 81 parking spaces to add to the study area supply. Based on actual parking data collected during the short- and medium-term, parking trends can be used to forecast if and when in fact the additional parking supply that would be provided by the redevelopment of this site is needed. However, the redevelopment is not recommended at this time. Redevelopment would consist of clearing the site to provide at-grade parking with access recommended form Treelawn Boulevard. This site is just over a 5-minute walk from the Kleinburg Village core. Streetscaping improvements would have improved pedestrian connections / sidewalks or active travel.

The location of the site makes it a suitable for hosting a micro-mobility station, which can be introduced before other long-term measures. Redevelopment and incorporation of a micro-mobility station can serve as means of promoting a modal shift in the Kleinburg Village, targeting residents in the Treelawn Boulevard area to walk to the station eliminating private vehicle use for short trips.

Given the Old Fire Hall is owned by the City of Vaughan, there is also the potential for the City to redevelop the Old Fire Hall into a City facility which could serve the community. Under this circumstance, it is recommended that the design of any community facilities on the Old Fire Hall property maximize parking opportunities to support the Village core. It could be the case that the City redevelop the Old Fire Hall as a City facility prior to the long-term horizon.

7.6.1.3 *Public Parking Structure*

Forecasted parking supply and demand for the long-term continue to indicate that the Kleinburg Village supply, combined with improved wayfinding, does not support the need for a parking structure to be built. The Old Fire Hall could be considered a viable location for a parking structure. Based on parking space surpluses for the horizon, either at-grade parking or a parking structure could be provided, as providing the two solutions would oversupply the study area and work against the current directions of parking policy. The cost differential between at-grade parking versus a parking structure is approximately $15,000 versus $40,000 per space, respectively, which also highlights why a structure would not be the best use of City resources. Parkade feasibility and costs are provided in greater detail in **Appendix G**. Higher construction costs also imply longer payment periods for the facility. Higher parking fees or larger volume of people paying to park would be required to generate adequate revenue streams to manage costs of the facility or require the site to be subsidized by the City.

7.6.1.4 *Reviewing / Implement New Parking Technologies*

New technologies are constantly being developed to improve travel, parking requirements and demand. As such these technologies are required to be sensitive to changing demands, travel modes and parking needs. In the long-term some of the technologies below may be considered for Kleinburg Village.

- Automated vehicles (AVs) or self-driving cars and buses advancement have been undergoing tests in a number of countries with roll-outs expected to drastically change how we travel and how we park. Parking spaces may become smaller resulting from automatic parking, or parking may not be needed at all as the vehicle may return to the user's home. Vehicles may even be connected to a centralized network, making car-sharing even easier. AVs would either always be on the road, picking up and dropping off passengers, or charging/refueling/parking in a few centralized locations. As such, there would be a reduced need for parking
- Dedicated curbside accommodations can provide convenient locations to access ride-sharing services to the benefit of residents, workers, and visitors. This would reduce private vehicle use and parking demand



- Free Wi-Fi at strategic locations within the Village, such as at micro-mobility stations, ride-sharing locations, or the Kleinburg Village square, would connect the user to the network and access to ride-sharing apps, transit schedules, and other technologies
- New technologies can provide enhanced curbside management providing drivers, job schedulers and fleet operators with parking information for the Kleinburg Village when they need it, as they need it. Drivers would be provided information on parking space location, cost of spaces, parking spaces designations e.g. electronic vehicle (EV), barrier free, etc. (see **Figure 7-18**)
- It is understood in towns, cities and villages that parking is an extension of the overall transportation infrastructure. Detailed collection of data provides an intrinsic understanding of the relationship between parking and transportation, and emerging technology provides solutions. Smart city functions (see **Figure 7-19**) for the next generation of parking solutions may provide future services that include:
    - Dynamic pricing to incentivize parkers toward specific locations—parking meters could transmit the current rates to the vehicle as it's coming down the street
    - Parking garage equipment informing nearby stoplights how much additional traffic is being generated after a big event, so the stoplights could adjust accordingly

Figure 7-18 Curbside Parking Management

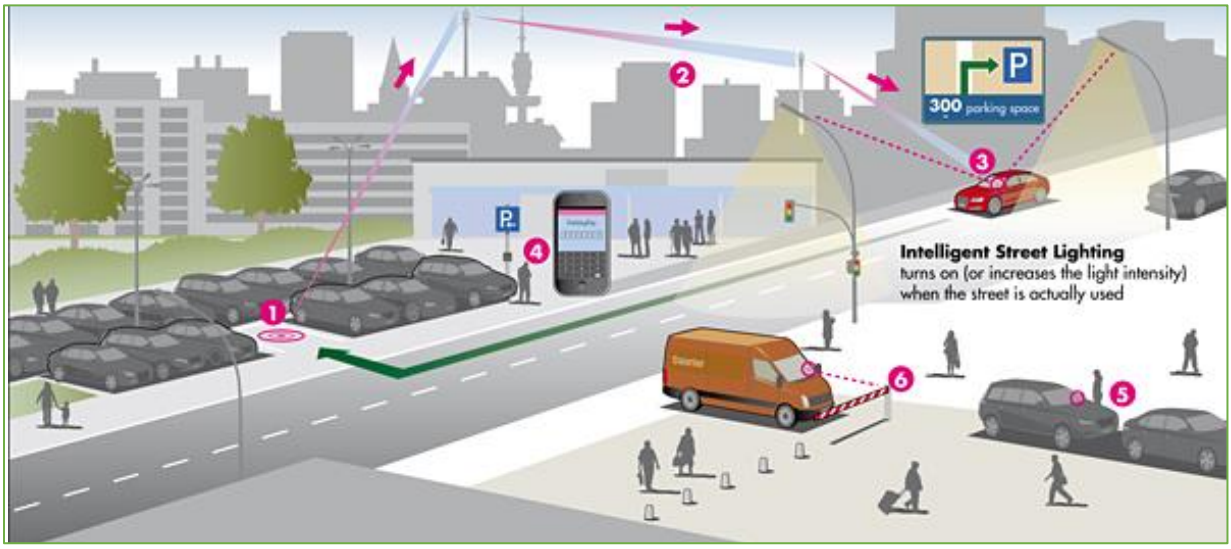


Figure 7-19 Smart Cities

7.6.2 Mobility/Infrastructure Improvements

7.6.2.1 *Implement Pedestrian-only Village Centre and Pedestrian Friendly Village Core*

The pedestrianized Kleinburg Village square that could be established as part of the medium-term could be taken a step further in the long-term to make the Kleinburg Village square pedestrian-only, fully restricting through traffic along a section of Islington Avenue. Members of the Kleinburg community have voiced concerns regarding traffic volumes and congestion along Islington Avenue. This step prioritizes people at the heart of the Kleinburg Village with an emphasis on Highway 27 being the main north – south throughway.

The pedestrian-only Village centre and "full" vehicle restriction is proposed for approximately a 35m segment of roadway immediately south of the Kellam Street and Islington Avenue intersection. The area identified will enable local traffic to circulate and access parking areas. Additional consideration to enhance the pedestrian experience in the core can be established via designating a wider pedestrian friendly Village Core which will encompass the area from Nashville Road to Stegman's Mill Road on Islington Avenue. This area is visualized as a pedestrian zone limited to local traffic and is illustrated in **Figure 7-20.** The City could first explore the implementation of this solution as a pilot-project during the Summer or Fall period prior to full implementation.

Figure 7-20 Pedestrian-only Village Core

Pedestrianizing of the area maintains access to Stegman's Mill Road and Teston Road. The Treelawn Boulevard community can use Highway 27 and Nashville Road. The pedestrian friendly core would be limited to vehicles destined to locations in the core and the potential restriction of access to Islington Avenue from Kellam Street. The pedestrian-only area would provide the Village with the following benefits:

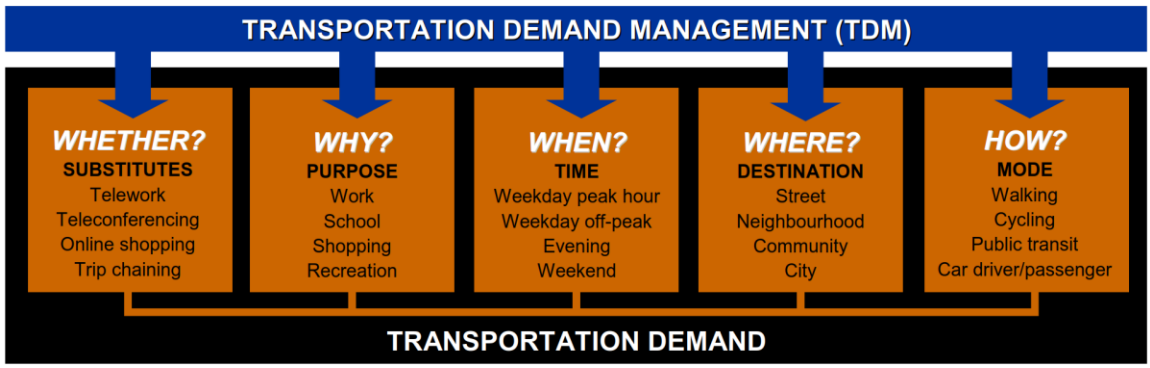
- Reduced car use, resulting in much less traffic on surrounding roads
- High rates of walking and cycling
- More independent movement and active movement for the community
- More available social space
- Low atmospheric emissions
- Low road accident rates
- Better built-environment conditions and benefits to the public realm
- Encouragement of the use of active transportation modes

Implementation of the closure may need to coincide with additional changes to Kleinburg Village, which may include signage, speed humps, and physical barriers. Closures should

also be coordinated with York Region to ensure that traffic diversions are within planned capacity levels on the surrounding arterial road network.

7.6.2.2 *Mode-shift via Transit and TDM*

Transportation Demand Management (TDM) is the application of policies, programs, services, and products to influence whether, why, when, where and how people travel. TDM measures help shape the economic and social factors behind personal travel decisions. TDM strategies seek to increase the efficiency of a transportation system by influencing travel behaviour. This important goal can be achieved by encouraging people to utilize sustainable travel options, other than driving alone, especially during peak work commute periods. Examples include walking, cycling, carpooling, vanpooling, using public transit, or adopting flexible work arrangements.



Source: The Case for TDM in Canada, October 2008

TDM is one of the tools the City of Vaughan is using to create a vibrant and sustainable community. Using policies and programs to make active and sustainable transportation more convenient, a TDM approach to transportation can deliver long-term environmental sustainability, improve public health, create stronger communities, and build more prosperous and livable cities.

It is very important to understand the benefits of effective parking supply management and its relationship with TDM. TDM initiatives are used to influence travel behaviour. This helps manage parking demand by decreasing the number of single-occupancy vehicles (SOV) and can improve the efficiency of transportation systems. Initiatives can take many forms, including policies, programs, services and products to influence why, when, where and how people travel. TDM measures can be used in Kleinburg to manage parking demand over the long-term, while supporting mobility to, and from the Village. TDM approaches that can be implemented or enhanced in the village include:

- **Carpooling** – A program to match regular or weekend commuters can be considered

- **Cycling** – Cycling facilities and connections would have been improved as part of the medium-term. Promotion of groups, trails and facilities is recommended for the growth of the cycling community
- **Transit** – Limited transit service is provided to Kleinburg Village. Development of facilities, and active promotion of connectivity and modes of travel within Kleinburg in addition to increased service can help improve transit ridership, making it a viable travel option. The City should continue to work with YRT to consider transit network improvements in Kleinburg Village
- **Car-share** – A system that enables members to borrow vehicles for short periods of time (i.e. hours rather than days); can be a measure for new developments in Kleinburg Village. The City can also explore providing car-share within public parking facilities

7.6.3 Evaluation and Summary

Of the six (6) solutions reviewed for the long-term, paid parking and a parking structure for Kleinburg Village were rated as fair whilst the four other solutions were rated as good. It is recommended that solutions rated good be implemented to form the long-term parking strategy. The evaluation of the long-term solutions has been summarized in **Figure 7-21**, with detailed evaluation tables provided in **Appendix F**.

		Parking Solutions				Mobility / Infrastructure Improvements	
Category	Criteria	Paid Village Wide Parking	Redevelop Old Fire Hall	Parking Structure	Review/Implement New Parking Technologies	Pedestrian-only Village Core	Mode-shift via Transit and TDM
Technical	Parking Capacity	Fair	Good	Good	Good	Fair	Good
	Traffic Operations	Fair	Fair	Good	Good	Good	Good
	Sustainable Transportation, Safety and Accessibility	Fair	Fair	Fair	Good	Good	Good
	Planning and Policies	Fair	Good	Poor	Good	Good	Good
Social	Business / Development	Poor	Good	Fair	Good	Good	Fair
	Public Perception	Poor	Good	Fair	Good	Fair	Fair
Cost / Finance	User cost	Poor	Good	Fair	Good	Good	Good
	Implementation	Fair	Fair	Poor	Fair	Good	Fair
	Operating Costs / Enforcement	Fair	Good	Poor	Fair	Good	Fair
	Average Score	Fair	Good	Fair	Good	Good	Good

Key

Poor Fair Good

Figure 7-21 Long-term Solutions Evaluation Summary

Solutions are expected to have positive impacts on parking supplies and/or traffic operations, thereby enhancing parking experiences in the long-term. Parking demand will continue to be met with the provision of increased parking supplies, new technologies and TDM. The long-term strategies are anticipated to improve travel options, reduce the reliance on the private vehicle and increase trips made by non-auto modes.

7.6.4 Parking Supply Projections

Long-term projections are based on parking supplies associated with the short-term horizon, the potential redevelopment of the Doctor's House, new Kleinburg Village developments for the horizon, and a potential new parking facility at the Old Fire Hall north of the Village core, if required.

Event GFA within the Kleinburg Village consists solely of the Doctor's House site. Redevelopment of the Doctor's House will increase its parking supply from 208 to a total of 288 parking spaces, an overall increase of 80 parking spaces. A conservative approach has been considered for the Doctor's House redevelopment with the parking spaces not considered as part of the PPP with the City. As such, spaces are considered 100% non-shareable and for private use only. Additionally, it is assumed that the Old Fire Hall just north of Treelawn Boulevard can be reconfigured and paved to provide 81 parking spaces. A further 254 spaces are forecasted for new developments for the long-term horizon. **Table 7-8** below summarizes the forecasted long-term horizon parking supply.

Table 7-8 Long-Term Parking Supply Summary in Study Area

	Parking Supply (parking spaces)
Redevelopment of the Old Fire Hall (*if required*)	+81
Redevelopment of the Doctor's House	+80
New Non-residential Development Parking Supply	+254
Total Short-Term Horizon Parking Supply	916
Total Long-Term	**1,331**

7.6.5 Long-Term Parking Demand and Supply Summary

Long-term parking demand is assessed by applying similar process and assumptions to that of the medium-term forecasting. The product of high end peak attraction rates (+11%) as shown in **Table 5-3** and long-term GFA's were used to forecast long-term peak parking demand. Based on the assumptions made above and land use changes expected, the long-term supply and demand forecast is summarized in **Table 7-9.**

Table 7-9 Demand and Supply Summary – Long-Term

Block	Key Site	Total Demand	Total Supply	Surplus / Deficit	Peak Occupancy (%)
E01	North of John Street	9	15	6	60%
E02	Former Starbucks	114	153	39	75%
E03	Fitness Centre	116	125	9	93%
E04	Kleinburg Public School	120	138	18	87%
E05	Library	18	21	3	86%
E06	Bindertwine Park	51	64	13	80%
N01	North study limits	91	127	36	72%
S01	South study limits	0	0	0	0%
W01	RBC Bank	95	111	16	85%
W02	Doctors House	235	294	59	80%
W03	Post Office	186	214	28	87%
W04	Pierre Berton Centre	68	69	1	99%
W05	Residential	0	0	0	0%
Total Supply		**1,103**	**1,331**	**228**	**83%**

At the end of the long-term (2041) planning horizon, it is expected that there will be a total surplus of 228 parking stalls in Kleinburg Village. Long-term total occupancy is forecasted at 83%. This is slightly higher than the effective parking supply of 80% occupancy level. If the Old Firehall is not converted to a surface parking lot under this highly conservative forecast in the long-term horizon, the total peak occupancy percent is anticipated to be 88%. This scenario is illustrated in **Appendix E**. This indicates that the Kleinburg Village core parking could near capacity with vehicles finding difficulty in locating a parking stall. It is important to reiterate that the long-term horizon demand projections are highly conservative and that the City should continue to monitor parking demand through to the long-term horizon to determine if redevelopment of the Old Fire Hall will be required. At this stage, it is not being recommended.

The parking strategy for the long-term is expected to provide an adequate level of parking in the study area by utilizing medium-term parking supplies to meet demand. **Figure 7-22** below summarizes the long-term strategy based on the forecasting findings.

Figure 7-22 Long-term Strategy Summary

Long-Term
10 + years

Recommended

- A continuous review of **new technologies** is recommended to identify initiatives for implementation that are aligned with the City's vision for Kleinburg Village
- **TDM strategies** will work to reduce SOV usage, reduce the amount and need for parking within Kleinburg Village, providing residents, workers and visitors with multiple travel options into Kleinburg Village
- A **pedestrian-only** Kleinburg Village core has many benefits to the public realm, changing the focus of Islington Avenue as a north-south throughway and becoming the heart of the Kleinburg Village core

Not Recommended (Subject to Monitoring)

- Redevelopment of the **Old Fire Hall**, if required, can provide community uses prior to the long-term. Monitoring of Kleinburg Village parking demand is recommended to assess the need for public parking at the Old Fire Hall. The site can also provide an opportunity for a micro-mobility station
- An extension of **paid parking** Kleinburg Village-wide with some areas exempted based on parking zones
- Development of a **parking structure** continues to not be a feasible solution based on potential costs, and forecasted parking demand and supply. This is solution is to be reviewed as an alternative to the Old Fire Hall redevelopment if necessary through monitoring

8

8 IMPLEMENTATION AND FUNDING STRATEGY

8.1 FUNDING STRATEGIES AND PARKING DELIVERY MODELS

Critical to the success of the Kleinburg Parking Strategy and recommended solutions is an implementation strategy that identifies the appropriate sources of funding and is sensitive to the context of Kleinburg Village. In this case of Kleinburg Village, the tools available to the City include:

- Cash in Lieu
- Development Charges
- User Fees or Paid Parking
- Benefiting Assessment
- Parking Partnerships

This section briefly describes each tool within the framework of suitability of implementation in Kleinburg Village.

8.1.1 Cash-in-Lieu

Cash-in-Lieu (CIL) of on-site parking is a policy tool that serves to reduce or waive the required number of on-site parking spaces, as mandated by a local municipal Parking By-Law or Zoning By-Law via a cash payment to the relevant authority for said spaces. An owner of a site that is to be rezoned and/or developed for commercial purposes may make an application to the municipality to provide CIL of on-site parking. CIL exempts the owner from providing and maintaining a specified amount of parking on-site, in accordance with the Zoning By-Law. Specific legislation is required through the Planning Act and Official

Plan. The application of this tool is not as-of-right, as the property owner in question, per the Zoning By-Law is required to meet the applicable parking requirements. The tool is a penalty for not doing so.

The CIL tool has the following planning underpinnings:

- The site plan process evaluates each submission for, among other things, parking space requirements, as specified in the municipality's Zoning By-Law
- The site owner is given an alternative to providing mandated on-site parking with the payment of a fee to the municipality for the number of spaces that they cannot provide
- The collection of the fee by the municipality is intended for the development of additional public parking, although the Planning Act does not specify this explicitly
- The CIL policy implies that there is an area-wide parking supply strategy in place or at least under development
- The agreement and acceptance by the municipality of such payments does not require the municipality, at any time, to provide parking spaces in a specified location

CIL funds are generally placed in a reserve fund and are normally used by a municipality for the acquisition, improvement, and construction of municipally owned parking facilities. In Kleinburg, CIL funds are not directly managed by the Village. An expansion to its use can include not only the development of public parking spaces but also provision of other parking-related community benefits. These benefits can be related to the implementation of micro-mobility, TDM, or other parking strategies discussed in this Study.

8.1.1.1 *Cash-in-Lieu Formula Review*

The current formula for CIL contains variables that best practice research show as typical. The research also reveals that a formula rather than a flat rate was preferred since it better reflects the true cost of development and maintenance of a parking space, notwithstanding that a formula is more administratively time-consuming. The formula below is specific to Kleinburg Village and shows the contribution the developer must make.

The current formula structure is used in Kleinburg Village:

$$\$ = \{(P \times 40) + (S \times 28) + (L \times 12)\} \times M + \$m$$

P = Land acquisition cost per m²

S = Construction cost per m² of parking spaces

L = Construction cost per m² of amenity/landscape/lighting

M = multiplier (0.1 for conversions and renovations and 1.0 for new construction and additions)

$m = Maintenance charge (recurring annual fee to be determined at time of agreement)

Upon review it is recommended that some clarity and refinements should be implemented to the Kleinburg Village CIL formula.

The following *revised formula* is recommended specifically for Kleinburg Village:

Contribution = (**Construction** cost + (**Land** cost per m^2 x **Area** of parking space per m^2)) x **Number** of parking spaces x **Share** of contribution towards total costs.

The rationale and basis for each variable is as follows:

Construction cost of parking space is recommended to be the current Canadian Construction Index value for a **surface or a structured parking space**. It is recommended that at the time of the application for CIL that the most current capital cost of either a surface space or below-grade parking space be applied. The specific site application will determine which parking space type should be costed. Current costs related to the construction of a surface space is about $1,500 per stall, while a structured parking space currently has an average cost in the order of $43,000.

Land cost per m^2 is recommended to be set by an agreed upon independent land market appraisal. Other sources that would initially give the Committee of Adjustment or the Planning department a preliminary estimate of the land cost would be MPAC search of surrounding assessed properties that are comparable in land use. While this may be time-consuming, its inclusion serves to reflect the reality of constructing a parking space.

Area of parking space per square meter reflects the **surface** parking space dimensions as prescribed in the City's Draft Comprehensive Zoning By-Law. Specifically, a surface space is required to be a minimum of 2.6 meters by 5.7 meters (14.82 m^2) plus 3 meters by 2.6 meters for the driving aisle (7.8 m^2) or **22.62 m^2** in total. Should the review of the specific site application point to a below-grade parking space, then the average structured parking space is between 375 and 425 square feet or an average of 400 square feet (or **37.16** square meters). This factor reflects a "made-in-Kleinburg" formula.

Number of parking spaces is the difference between the required number of site parking spaces as per the Zoning By-Law and the number of parking spaces that the proponent will provide on-site. These parking space requirements are drawn from the City's Draft Comprehensive Zoning By-Law that is currently under review.

Share of contribution also referred to as an equity factor, is currently set to 0.1 or 10 percent of the cost of provision of the number of parking spaces in the case of a renovation, or 1.0 or 100 percent in the case of an addition to an existing building footprint or new construction. However, given the resulting wide range of contribution, and share in the responsibility of providing Zoning By-Law mandated parking space requirements, it is recommended that a **50 percent** (0.5) factor be applied.

8.1.1.2 *Testing the Recommended Formula*

A comparative assessment of the recommended revised formula was completed against costs at previous sites where the existing CIL formula had been applied. Costs were calculated for a hypothetical scenario where a proponent requested relief for a **single at-grade space** for a commercial establishment. For the purpose of estimating land value, the property is assumed to be located near the intersection of Kellam Street and Islington Avenue.

The **construction** cost for a **surface space** is estimated by CCI, is based on recent data, and is approximately **$1,500 per stall** which includes base and asphalt topping, line painting and topical treatment.

The **estimated land cost** is assumed to be **$1,783 per square metre** based on available land values in the MPAC MyProperty site for four (4) sites nearby the Kellam Street and Islington Avenue intersection. **Table 8-1** below summarizes estimated land value cost.

Table 8-1 Land Value Estimation

Site	Lot Area (m^2)	Value per Square Metre
1	1,004.12	$ 1,771.70
2	519.11	$ 2,011.71
3	1,701.45	$ 1,532.81
4	791.62	$ 1,815.26
Average	**1,004.08**	**$1,783.00**

Area of surface parking space is **22.62** square metres (rounded up to 23 square metres) as previously derived. Based on construction, land cost and parking area, relief for the one parking space would be:

Contribution = **(1500 + (1783 x 23)) x 1 parking space = 1500 + (41,009) x 1** or **$42,509**. The proponent's share of contribution factor 50% is applied to the computation. The cost per space to the developer is **$21,254.50** under the recommended changes to the CIL formula.

In comparison, a review of CIL judgements in Kleinburg indicate an average per stall charge ranged from **$2,251** to **$3,978**. The revised formula represents an increase of more than five times that of previous CIL judgements. A summary of Committee of Adjustment decisions for cases in Kleinburg core is provided in **Appendix I.**

8.1.1.3 *Formula Update Justification*

The revised formula discussed is much more representative of the actual cost of construction and land acquisition required to provide surface parking spaces in comparison to the existing formula. As well, the application of the "equity" factor of 50 percent is considered a means of demonstrating the City's willingness to work with and engage developers in having a shared responsibility to provide parking for visitors to Village.

8.1.1.4 *Recommendations for Cash-in-Lieu Payments*

It is recommended that within the framework of this Parking Strategy for Kleinburg Village that CIL funds should be directed to parking-related community benefits or improvements related to parking and support the recommendations of this Study. The Study recommends paying the CIL fees into a fund to finance amenities that may include:

- PPP or other partnerships
- Urban design improvements such as way-finding and signage
- Active transportation improvements related to parking
- Micro-mobility transportation programs that require some capital additions (curbside management, e-scooter parking areas, bike parking and maintenance depots, or digital information community / Village kiosks)
- Maintenance of public parking facilities

The City should institute annual reviews of land value and construction costs as part of application of the proposed CIL formula to ensure necessary changes in these values are captured.

8.1.2 Development Charges

Development Charges (DCs) are fees paid by developers to the municipality with new development or redevelopment. The intention of DCs is to support the capital costs associated with growth and development within the City of Vaughan. This method of cost

recovery is an equitable, consistent, and transparent way to recover costs. The types of services that DCs pay for are listed as follows:

- Engineering services
- Public works
- Community services
- Library services
- Fire and rescue services
- General government

The DCs are applicable to those constructing a new building, those making an addition or alteration to an existing building that results in an increase in floor area, and to those redeveloping a property or making interior alterations that result in a change of use to all or part of a building. As a source of funding capital parking projects, it is left to the interpretation of the by-law and to consultations with the Development Finance and Development Engineering Staff of the City of Vaughan. The advantage of using DCs as a funding strategy is that it is consistent and requires all developments subject to the by-law to contribute. This establishes a more reliable source of funding that is fair in its application. The DCs application has an area component, where different parts of the City of Vaughan are affected differently. **Table 8-2** presents all the rates for the City (excluding City Area Specific DCs). Additional steps can be taken to tailor DCs for Kleinburg Village, presenting an opportunity to fund new parking infrastructure.

Table 8-2 City of Vaughan DC's

	RESIDENTIAL ($/PER UNIT)				NON-RESIDENTIAL ($/PER M^2)		
	Single/ Semi	Multiple	Large Apt (≥ 700 ft^2)	Small Apt (< 700 ft^2)	Retail	Industrial/ Office/ Institutional Retail	Hotel
City - Engineering	34,300	28,293	20,919	15,077	142.26	142.26	142.26
City - General	19,326	15,940	11,786	8,496	14.27	14.27	14.27
Region - Hard	55,560	44,724	32,504	23,746	525.71	220.99	101.61
Region-Soft & Go Transit	6,621	5,323	3,870	2,807	67.80	25.40	14.75
Public School Board	5,716	5,716	5,716	5,716	10.23	10.23	10.23
Separate School Board	1,291	1,291	1,291	1,291	1.94	1.94	1.94
Total ($)	**122,814**	**101,287**	**76,086**	**57,133**	**762.21**	**415.09**	**285.06**

8.1.3 Paid Parking

Paid parking is a type of funding source gathered by charging the user a set rate to use a parking space. Parking rates vary between hourly, daily, or monthly (permit) pricing structures depending on the use of the parking space. The revenue generated typically goes to the operation and maintenance cost of the parking space and any leftover revenue is used to provide additional parking.

Paid parking can be implemented in several ways, such as smart parking meters, pay-and-display, pay-by-phone, and pay on exit/foot. All these various methods of paid parking provide benefits in terms of operational costs with payment completed via credit card unlike in some areas paid parking is provided by inserting coins with a timer installed on the meter. Additionally, pay-by-phone is by far the most convenient and least costly to operate for the City. It provides an online system to the user to pay for parking and extend parking on-the-go via cellphone. Establishing systems that provide payment by phone is highly recommend as it can help in reducing costs such as machine maintenance, paper receipts, and cash collection. For on-street spaces, the system should include time limit caps and top-up caps to restrict users from continuously extending parking for a spot and limiting turnover. Another aspect of paid parking is parking enforcement. Whilst the intent of enforcement should not be to generate additional revenue, recovering the cost of enforcement through tickets issued is desirable.

Paid parking is currently not a recommended measure for Kleinburg Village, however, the City should explore how paid parking can be used should implementation be considered in the future. Parking enforcement is present in Kleinburg Village and will be continued for future horizons.

8.1.4 Benefiting Assessment

This financing option acts as tax on business operators that would stand to benefit from the provision of a parking facility. This was a novel approach conceived and applied by the Toronto Parking Authority (TPA). One of first applications of this tool took place in a vibrant commercial strip along Bloor Street between Jane Street and Runnymede Avenue (known as the BJR business associations). TPA developed a formula that attached a tax against the properties within, what was determined as walking distance from a public parking facility. Because each property owner shared the benefits of the public parking space, some who were closer to the site would benefit more, and those further away from the site would benefit less. The varying level of benefit then was addressed through a scale of charges against the property's frontage and distance to the parking site proposed. This benefit tax was administered by the City of Toronto and represented a lien on the property. There was an agreed upon amortization period for the investment of the parking site. While at that time the legislation was not explicit, there was no revenue sharing. The Authority was completely responsible for managing the facility.

This finance mechanism served not only to offset, in some cases, land acquisition and construction costs, but also required full disclosure and engagement of those property owners impacted by the location of a potential parking site. This financing tool is not being proposed for the Village but is provided for information purposes.

8.1.5 Parking Partnerships

Public private partnerships, referred to as PPP, are agreements between private property owners and a municipality to provide parking to the public, subject to various terms and conditions. PPPs for parking are typically pursued where a municipality sees an opportunity to satisfy parking demand but does not have the resources available to provide publicly-owned and operate facilities.

In a partnership, both sides need to see benefits in these opportunities. The partnership needs not be limited to the private sector but may involve other public agencies. For example, the provision of parking spaces to meet expected growth in demand in Kleinburg may be dependent on the shared-use of publicly owned parking sites (Library, Kleinburg Public School, and Pierre Berton Heritage Centre).

From a local business owner perspective, a partnership with the municipality shows the municipality's level of commitment to the resolution of a parking supply and management issue. To the partner, the relationship can be as simple as treating the municipality as a tenant who is renting or leasing parking spaces on a site. The (municipal) tenant pays lease or rent cost as other tenants, but in addition it may generate a shared revenue opportunity. From the municipality's point of view the partnership provides a physical and service opportunity. Commercial businesses may have the physical resource of land but require two things:

- They desire a sustainable level of customers that can reach their tenants in an efficient manner. If the customer feels that the level of service is not satisfactory, they will shop elsewhere. This is not at all particular to Kleinburg but is the common underlying philosophy behind developing and sustaining a viable business
- The property owner has the desire to attract tenants; ones that are stable, reputable, and fit a sense of style and cache expected in the Village. The municipality can be viewed as a potential tenant that is selling a desired product (i.e., parking space)

The sharing of these joint or partnership sites require operational and legal changes to site parking regulations and property ownership legal agreements depending on the type of business arrangement.

Several business models are available to be considered by the City, six (6) of which have been outlined in **Table 8-3**. One or more of these models can potentially be used in Kleinburg Village. The Study recommends the City explore two models for possible implementation of parking partnerships, which include:

- Municipality lease/rents existing parking spaces from owner at fixed cost.
- Public Agency Partnerships

Table 8-3 Joint Partnership Models

Type of Agreement	Operation	Risk and Opportunities
Recommended for Implementation		
Municipality lease/rents existing parking spaces from owner at fixed cost.	City lease/rents parking spaces from a private owner. A fixed fee paid for an agreed number of spaces for a specified period which the City will operate. The agreement does not provide for exclusive use as owner will continue to manage remaining spaces for business purpose. Lease/rented parking spaces will be made available for public use without charging users for parking.	**Pay Parking**: Not a requirement for implementation. City to fund lease/rental of spaces out of its operating budget. **Risk**: Minimal, but City assumes all risk as on-site requirements needed to identify spaces to be dedicated for public use, with no guarantees they would not be used by patrons of owner's business. **Partnership Requires Cost Review**: Lease/rental cost of parking spaces at surrounding businesses to be reviewed periodically. City to seek best financial agreement possible for parking spaces. **Doctor's House:** Readily available parking supply that can immediately accommodate public parking.
Public Agency Partnerships	Non-financial agreements with public entities that will allow the City to operate parking on weekends and weeknights.	**Pay Parking**: Not a requirement for implementation. Agreement for use of spaces without financial commitment. **Risk**: Owner may require parking supply on occasion restricting any use by public. **Signage and Enforcement:** Required to inform and manage public parking when site is not available for public use.

Type of Agreement	Operation	Risk and Opportunities
Not Recommended for Implementation (For Future Consideration)		
Municipality bids a management fee-based arrangement	Through a bidding process the private owner allows the operator to manage the parking facility on the owner's behalf. The proponent captures revenue charged through agreed upon rates and a flat fee is paid by the operator to the owner each year. The Proponent receives an agreed upon portion of the gross revenues. Proponent may maintain the facility (washdown, repairs, lighting, security etc.) and passes these costs to the owner. Proponent normally would have a 3 to 5-year term.	**Opportunity for Private Parking Operators**: Competitive bid will allow private sector parking operators into the market. **Return on Investment**: No incentive to optimize revenue unless the arrangement allows for this. **Partnership Requires Hands-on Involvement**: Requires attention to audit surrounding operating costs and maintenance expenses by the owner of the facility which may be onerous. **Risk**: Owner builds additional parking spaces as part of their development and thus assumes all risk. **Pay Parking**: Paid parking is appropriate to a contract that seeks a financial return. Always the risk that if this is the only site in the core that is charging for parking space use, the site's attraction will be reduced. **Long-term Pay-back**: Long cost of construction recovery period. Length of recovery period would depend on parking rates charged and costs of construction.
Benefitting Assessment	City of Vaughan can begin to search for a suitable site to build a parking facility knowing that it will receive financing for	**Pay Parking**: Not a requirement for implementation.

Type of Agreement	Operation	Risk and Opportunities
	land acquisition cost on an annual basis for those partners that are benefitting from its service.	**Dedicated Parking Human Resource**: To negotiate and deal with the ongoing operations. **Need a suitable site**: Different from the first two options in that this would have to be an acquired site (in most cases) rather than a site located on private property. **Fuller engagement of the Business Community**: Shared costs of acquisition through special tax. Might push from the business community to implement pay parking and share revenues.
Business to Business Partnership	Stringing together adjoining private sites that can be shared and redesigned as an open unrestricted customer parking facility.	**Risk**: Lien on the property owners might prove to be complicated in the long-term should re-development of subject properties occur. **Return on Investment**: Additional cost to integrate circulation patterns on these sites; and eliminate barriers to accessing two or more sites. **Additional Operating Cost**: Additional insurance coverage for shared resources might be significant. **Open to Parking Management Companies**: it would be possible to have a private operator bid on its operation, maintenance, and

Type of Agreement	Operation	Risk and Opportunities
		potential revenue share; does not have to be the municipality.
Municipality rents existing parking spaces and shares net revenues (if applicable) with property owner plus a lease cost.	Tenant is responsible for the maintenance and operation, and its portion of the business tax, and other costs. The facility is not for the exclusive use by the site's tenants, but one can offer as part of its parking management strategy a bonus or discount to those patrons who have some business transacted with site's business owners.	**Pay Parking**: If rental charge comes in the form of monthly charge, then paid parking is the sustainable approach. There is risk that if this is the only site in the Village charging for parking space use, the site's attraction will be damaged. **Needs Enforcement Component**: Depending on the parking access and revenue control system implemented, enforcement of time restrictions may be necessary. **Return on Investment**: Through efficiencies and matching price to parking demand types, an incentive fee to the owner can be realized if a target of revenue is met by the parking management team. **Stage for Delivery of Other Mobility Objectives**: Can provide a stage for the implementation of other mobility opportunities within the site such as bicycle parking, Electric Vehicle charging stations, and vehicle rental business opportunities.



8.2 IMPLEMENTATION

Several solutions have been proposed in this Study to improve parking conditions within Kleinburg Village. Typically, an Implementation Plan would include timelines for implementing aspects of the strategy. Solutions proposed for the medium-, and long-term period have loosely indicated timelines for implementation. However, a strict set of timelines have not been developed to guide implementation. Given that the Village does not have a parking deficit, increases in demand are likely to be driven by future development in the core and surrounding areas. Monitoring of the Village parking supply and changes in demand then become important factors regarding the need to implement certain solutions of this parking strategy.

To support the implementation of the parking strategy, an Implementation Plan has been prepared. The Plan has been summarized in a table format to guide City staff through the horizon periods. Information contained within the Implementation Plan includes:

- Preliminary proposed timeline (i.e. short-, medium-, and long-term) based on proposed solutions to for the parking strategy
- Proposed order in which solutions should be implemented within each timeline
- Funding and/or implementation tools corresponding with each recommended solution
- Overview of requirements and next steps

The order of implementation of solutions in the short-term prioritizes those that can be immediately effected, followed by those that will increase parking supply, improve operations, but also require third-party discussions and approvals. Solutions aligned with the delivery of the Islington Avenue Streetscape Master Plan follow next, culminating with all other initiatives.

In the short-term, the recommended solutions are to be delivered largely through the Islington Avenue Streetscape Construction Project. The Islington Avenue Streetscape Construction Project is anticipated to enter detailed design late 2020, with construction commencing through a series of phases starting in 2021/2022. The Islington Avenue Streetscape project will bring a number of improvements to Kleinburg Village, including pedestrian and cyclist improvements. It is recommended that the community be consulted through the design process. Given, however, that a number of years will pass prior to the short-term solutions being implemented, it is recommended that a number of immediate, temporary solutions be implemented, subject to this Implementation Plan.

Immediate solutions to be implemented in the Village include:

- Temporary pavement marking for existing unmarked boulevard parking spaces on Islington Avenue and Nashville Road. It is approximated that pavement markings

can be provided for 78 boulevard parking spaces Islington Avenue and 19 spaces on Nashville Road

- Temporary parking signage identifying time limits for parking and overnight parking restrictions along Islington Avenue and Nashville Road. Revision of this signage may be required with the Streetscape works
- Parking signage directing drivers to off-street public parking locations where agreements have been reached with the City (i.e. Pierre Berton Heritage Centre)

The City can also explore other immediate solutions such as working with Kleinburg Public School to provide bicycle parking opportunities to cyclist groups on weeknights and weekends, or to provide public parking during non-event times at Pierre Berton Heritage Centre. Fixed and/or removable signage will be required at the Centre identifying when the site is not available for public parking. These immediate temporary measures can be funded by the Kleinburg Parking Reserve, which consists of funds that have been accumulated via cash-in-lieu payments for developments in Kleinburg.

For the medium-term and long-term, implementation prioritizes those solutions that improve parking supply, followed by wayfinding and those that promote movement by non-auto options. Solutions that require further monitoring or review for consideration for future implementation complete the medium-term.

New technologies and solutions that influence travel mode change will take priority for the implementation of long-term solutions. Similar to medium-term, solutions that require further monitoring or review for consideration prior to implementation complete the Implementation Plan for the long-term horizon.

The Implementation Plan is provided in **Table 8-4**.

Table 8-4 Implemenation Plan

Timeline	Suggested Implementation Order	Recommended Solution	Requirements and Next Steps
Short-term (1 - 5 years)	**Immediate**		
	1	Parking Restriction Signage	**Signage and temporary pavement** markings to be implemented as early as possible (within 1 year) as this will inform visitors where they are allowed to park and give restrictions on how long they can remain in the parking space. Immediate measures are estimated to cost $4,400 for signage and pavement marking. Signage should be clearly visible day or night and easy to interpret. Pavement markings to be provided in accordance with Ontario Traffic Manual (OTM) guidelines and City of Vaughan standards. **Changes in parking restrictions, pavement marking and signage** will be required as improvements to the streetscape take effect. Signage programme to be coordinated with supply changes and operating requirements (i.e. school, library, partnership spaces, etc.)
	Require City Discussions		
	2	Parking Partnerships	Parking partnerships require agreements to be made between the City and other parties. Partnership negotiations and agreements make take some time to be established, as such the City should initiate this process immediately to bring this public supply online as soon as possible. Establishment of parking partnerships will increase the Village parking supply providing new parking options for visitors. Implementation to be coordinated with signage restrictions and wayfinding to provide updates to these measure as required.
	3	Canada Post Community Mailboxes	Implementation will be under the purview of Canada Post. Recommended City engage with Canada Post regarding implementation. Potential locations and number of mailboxes would need to be identified, notification and consultation conducted with residents and business (by e-mail or letter). City engagement process with Canada Post to be commenced immediately as duration of process is unknown. Notification of community mailboxes installation and operation would need to be provided to residents and businesses. Special arrangements will be required to be made for persons with disabilities and seniors with mobility challenges.
	Delivery Impacted by Islington Streetscape Master Plan Works		
	4	Parking Lay-by	Lay-by parking to be constructed as part of the Islington Avenue streetscape improvement works. Streetscape works have commenced and proposed timeline for completion, implementation of lay-by parking is estimated to commence within the next two (2) years and is expected to progress as works proceed northwards on Islington Avenue.
	5	Clear Delineation of Parking Spaces / Pedestrian Areas	Delineation of parking spaces, improvement of pedestrian areas and provision of bicycle facilities will coincide and progress with implementation of lay-by parking and Islington Avenue streetscape improvement works.
	6	Public Parking Lot	New parking lot in boulevard area north of John Street will potentially require grading, paving and construction of accesses to Islington Avenue. Parking lot to be developed concurrently with **Phase 2** of the Islington Avenue streetscape improvement works. Streetscape works have commenced and are expected to be completed within three (3) to four (4) years. Parking facility anticipated to be completed within this timeframe.
	Other Initiatives		
	7	Wayfinding Strategy	Critical to efficiently utilizing parking spaces within the Village, wayfinding should be implemented concurrently with parking restriction signage. City to make contact with service provider to initiate terms and conditions for a **pilot program** for real-time parking technology, i.e. size of pilot program area, number of parking space to be included, duration, etc. As parking supplies increases during the short-term, the wayfinding strategy must be dynamic to capture the evolving village parking.
	8	Use of Bindertwine Park	Parking spaces readily available. Use of spaces may initially become important due to streetscape works. City to engage KBIA and KARA to initiate and develop plan for short to long-term use of parking spaces. Development of bicycle facilities – repair stations, changing facilities, connections to trails to be explored.
Medium-term (5 - 10 years)	1	Parking Partnerships	The City will continue to pursue opportunities in the medium-term to deliver new parking partnerships for the Village, engaging in agreements with new developments proposed for this planning horizon. The City to explore the most cost-effective partnership agreement method as paid parking is not anticipated to be in effect and cost will be covered from City budgets.
	2	Consolidated Private Parking	Consolidated parking assessments to be made on a case-by-case basis via the submission of parking justification studies. A review of the study would be used to determine feasibility and provide approval for a proposal to move forward.
	3	Real Time Parking / Dynamic Wayfinding Systems	A full roll-out of dynamic real-time wayfinding systems should be implemented as early as possible for the medium-term under the purview of City staff/parking authority. The City would have completed the pilot program and should have a comprehensive understanding of the system they would like to operate and data to be collected as part of that system. Supplemental technology to complement the system (webpage, mobile apps, payment options, etc.) would need to be established .
	4	Interconnected Bike / Pedestrian Paths	Identify and close prevailing gaps in pedestrian and cycle networks, integrate and expand networks where possible and include improvements along Stegman's Mill Road and connectivity to Islington Avenue per the City's Pedestrian and Bicycle Master Plan Update.
	5	Eco-mobility & Micro-mobility	City/parking authority to determine types of eco-mobility and micro-mobility to be implemented, docking station type, station locations, payment methods and options. Stations can be implemented gradually and do not require all to be provided at the same time.
	6	Village Square (Pedestrianized)	Engagement and agreement with property owners and KBIA to establish a pedestrian-oriented Village square / centre. Use, operation and maintenance of area coordinated and detail in established agreements for Village square.
	Subject to Further Monitoring		
	7	Parking Authority	A parking authority's role would be to manage, control, enforce and monitor parking, as part of a parking strategy. A structure for the parking authority and a mandate for its operation would be required as the authority would be responsible for managing a number of strategies moving forward for the Village. The study does not recommend the development of a parking authority, however monitoring and review for its need is advised in the medium term.
	8	Paid Parking (village core)	The City/parking authority would be responsible for identifying how and where paid parking will be implemented within the Kleinburg Village core. The pricing strategy for public parking spaces and methods of payment will be established and introduced to the public. Paid parking is not being considered for the implemenation in the medium-term, however the potential for paid parking will be review and monitored for the future.
Long-term (2041)	1	Review/Implement New Parking Technologies	New technology to be implemented would require cost-benefit assessments to identify those most suitable for the Village. Easily adaptable technologies requiring little infrastructural change such as Wi-Fi can be incorporated into the development of a pedestrian oriented core, micro-mobility stations, etc.
	2	Mode-shift via Transit and TDM	The growth of alternative travel modes is anticipated via enhancement of existing measures to influence travel behaviour creating mode-shifts. Implementation of new measures (i.e. carpooling and car-share) can be introduced at new parking facilities and developments via agreements with relevant stakeholders.
	3	Pedestrian-only Village Core	Council approval required for closure of designated section of Islington Avenue to vehicle traffic. Consultation with stakeholders including KBIA and KARA required. Traffic calming measures required for surrounding road network, and coordination with York Region required. Policy guideline or by-law guidance for pedestrianized Village square to be developed. Must be also be coordianted with York Region.
	Subject to Further Monitoring		
	4A	Redevelop Old Fire Hall	Implementation to be determined by monitoring program with trigger for development proposed at 80% occupancy of Kleinburg Village parking supply. City/Parking Authority can adjust target to prompt need for development. Demolition of Old Fire Hall, potential grading and paving of location would be required to provide maximum parking yield at site. Site can be used as a micro-mobility station. Alternatively, early redevelopment of the site to provide other City community facilities can also allow for an opportunity to provide public parking at the site.
	4B	Parking Structure	Considered as an alternative to an at-grade parking facility, implementation based on detailed feasibility assessment, and financial plan for cost recovery. If Old Fire Hall location used would require demolition of Old Fire Hall, potential grading and paving.
	5	Paid Village Wide Parking	Measure based on paid parking in Village being expanded beyond the core. Parking policy required to identify paid parking zones, parking pricing and exempted areas where free parking will continue. Not recommended for implementation in this horizon and needs to be monitored/reviewed.

8.3 POLICY AND MANAGEMENT TOOLS

Evolving parking policy and changing transportation needs have triggered a transition toward a more diverse multi-modal society that prioritizes sustainability and use of new technology. Historically, towns and cities focused heavily on parking supply, whereas new policy directives place emphasis on managing parking as a component of effective and efficient transportation planning. This new approach recognizes that parking policy plays an important role in the transportation system and affects travel behaviour, which should evolve to accommodate changes in land use, demographics, and overall travel behaviours.

This section discusses the policy tools available to the City of Vaughan to achieve a balanced approach to managing parking demand in Kleinburg Village. These policy tools can be used to ensure that the appropriate amount of parking is available through the Study horizons, while also ensuring that the pedestrian experience is prioritized, and sustainable travel choices are rewarded.

8.3.1 Zoning By-law

A Zoning By-Law regulates the use of land, buildings and structures, and is used to implement the City's Official Plan. A Zoning By-Law provides parking requirement guidance for any type of development.

A new Comprehensive Zoning By-Law has been drafted by the City of Vaughan to replace Zoning By-law 1-88, which officially governs parking requirements for private properties. Zoning By-Law 1-88 has also been supplemented by a March 2010, Parking Standards Review. The City's Draft Comprehensive Zoning By-Law is currently under review.

The proposed new Comprehensive Zoning By-Law provides parking rates specific to Kleinburg Village. The review process for the Zoning By-Law has ensured the adopted parking rates for Kleinburg Village reflect forward thinking policies. Minimum parking requirement rates are to be cognisant of the Village's parking trends, avoiding a parking oversupply, and supporting other planning polices to create travel mode shifts. The new Zoning By-Law will become an important policy tool requiring new developments or infill developments to provide a suitable parking supply for the respective land uses.

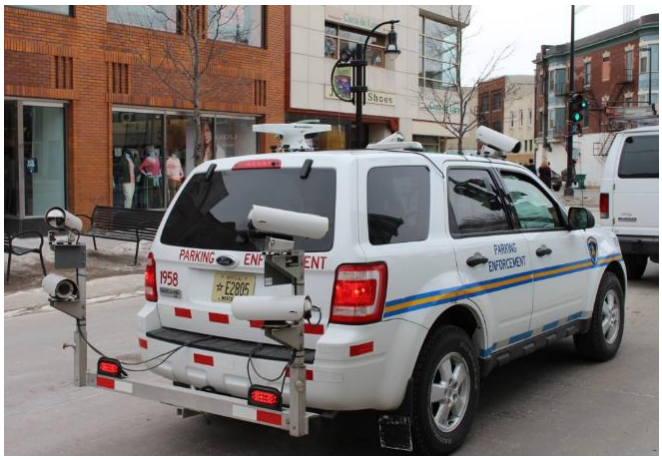
8.3.2 Parking Space Management

The parking strategy identifies the need for increased and improved parking signage within Kleinburg Village to inform drivers of time limit restrictions and where parking is prohibited. Parking time limits of three hours currently exist within Kleinburg Village. Enhanced parking enforcement management will improve parking compliance within Kleinburg Village improving parking turnover.

Parking surveys identified a number of illegal parking instances (i.e. parking activity in areas not designated for parking and/or non-compliance with City by-laws). Illegal parking

may include parking in front of fire hydrants, in reserved or accessible parking spaces without a permit, and in no-parking zones (hatched areas, fire routes, signed areas etc.). This does not, however, refer to customers who may have overstayed the 3-hour maximum parking time on-street. On-street illegal parking was highest on Kellam Street in the vicinity of the former Starbucks and on Islington Avenue north of John Street. Illegal parking occurred in a number of off-street lots with highest occurrences in the Doctor's House and Pierre Berton Heritage Centre parking lots. Overstaying beyond the 3-hour time limit is uncommon for on-street parking in Kleinburg Village. For off-street parking, however, overstaying is common, with average durations of at least four hours during Summer and Fall periods.

Parking enforcement has an important role to play in parking management by optimizing parking spaces provided to the public. Regular enforcement patrols can therefore be necessary to deter and discourage illegal parking and motorists that over-stay the time limits. This type of enforcement would also be the main way to enforce illegal parking in places such as accessible spaces, fire routes and in front of fire hydrants.



Advancement in technology has made new approaches and methods of parking enforcement possible. Using a series of cameras, infrared lights, optical character recognition software, and license plate databases, mobile License plate recognition (LPR) allows patrollers to monitor parking. LPR can have a major impact on parking enforcement effectiveness. Cameras mounted to the windscreen and the roof of a normal vehicle scan licence plates of vehicles on-street. A second set of cameras mounted at the rear of the vehicle record the location of the tires of parked vehicles "electronic chalking" to confirm if the vehicle has been moved.

The mobile LPR system compares license plate reads against approved vehicle lists (e.g., permit holders) and restricted vehicle lists (e.g., vehicles registered as stolen). Instant notifications are sent to the parking support vehicle's mounted laptop with priority-based sound and color alerts, prompting the patrollers to act. The system records and stores plate numbers, dates, times, GPS coordinates, citation types, and actions taken for future reports, data mining, and trends analysis. LPR technology can be applied in multiple ways which include:

- **Monitoring Parking Permit Usage:** Simplifies on-street and off-street parking permit monitoring, as lists and licence plate of permit holders are maintained electronically. Nullifying the need for paper and sticker permits and prevents

fraudulent permit usage, makes management of time-sensitive permit programs easier, reduces staffing requirements for patrolling, whilst simplifying workflow by eradicating administrative errors and redundancies

- **Identifying Scofflaws:** LPR's are used in principal to locate "scofflaws," (i.e., vehicles associated with multiple unpaid parking or traffic citations). Typically, this usage runs in tandem with a booting or towing program that immobilizes flagged vehicles, encouraging the swift resolution of outstanding debt
- **Monitoring Hot-Lists:** LPR systems can compare license plates to a database containing any vehicles of interest. Use can be extended to monitoring visitor parking in restricted areas of a parking garage. It can also be used to identify vehicles of interest to local law enforcement, such as stolen vehicles or those suspected of being involved in a crime and can even assist with the safe resolution of Amber Alerts
- **Collecting Trends Data:** Mobile LPR systems can capture vital data about the health of parking infrastructure, including occupancy by time, day, and length of stay. These data can then be applied to help optimize staffing schedules and site operation

Improvements in technology allow for online payment of tickets and citations. This makes it easier for payments to be made and improves the efficiency of collections. This service helps to satisfy requirements to provide timely customer-oriented services, with multiple card payment options.

Enforcement can potentially be used to target and solve prevailing parking issues in Kleinburg Village. Parking fines can be more forgiving to infrequent violators (typically visitors) and more punitive on repeat offenders (typically employees parking in short-term spaces). Additionally, incentives for prompt payment can be effective for improving collection ratios.

8.3.3 Land Use

New developments should complement Kleinburg Village's existing historic character which includes the overall size and scale of developments. Proposed developments should align with existing land use polices from the Official Plan, the Kleinburg-Nashville Heritage Conservation District Study and Plan, and the Islington Avenue Streetscape Master Plan.

Most if not all of future study area developments included in future forecasting are located within the designated Mainstreet Commercial Area (

Figure 4-1) as identified in Area Specific Policies for the Kleinburg Core in the City's Official Plan. Street and community corridor policies recognize Islington Avenue as the primary entrance into Kleinburg Village with Nashville Road considered an important

community corridor between the existing Villages of Kleinburg and Nashville. It is recommended that considerations be given to the landscaping and streetscaping along these corridors to ensure that the rural character and heritage streetscapes are retained. Strategies proposed in this study complement and are to be delivered along side the Islington Avenue Streetscape Master Plan which will deliver landscaped boulevards through Kleinburg Village incorporating well-marked pedestrian crossing areas and public sidewalks.

The Kleinburg Village public realm should provide a safe and attractive pedestrian environment granting pedestrians access to enjoy public streets and other outdoor spaces. Per public realm policies, the Kleinburg parking strategy through the short-term removes on-street parking in the Kleinburg Village core enabling the historic street frontage to be visible by all that traverse it. This Study is guided by progressive enhancement of the public realm proposing implementation of a pedestrian-oriented Kleinburg Village square for the medium- and long-term.

As Kleinburg Village grows and develops, changes are expected for each of the assessed horizons. Study growth was defined using known planning information and Mainstreet Commercial Areas development standard policies which identify maximum achievable FSI within the range of 0.2 to 1.0. As such growth forecasts for the study are aligned with the City's Official Plan and are reflective of allowable land uses which were ultimately used to forecast demand and parking requirements.

8.3.4 Financial Plan

Revenue generation and financial management are important for parking planning and development. Changes to the existing CIL policy employed by the City in favour of the approach outlined in this Study is necessary for alignment with the current cost of parking and to maintain sufficient funds in the Kleinburg Parking Reserve. This update underlines the City's commitment to the community. The financial plan would include policy for other revenue streams including DCs and if deemed appropriate for future implementation, paid parking.

8.4 MONITORING

A monitoring strategy is important for measuring parking demand, identifying subsequent changes, and forecasting future needs of Kleinburg Village. Monitoring should also extend beyond parking usage in Kleinburg Village and should encompass other aspects of the parking strategy such as micro-mobility measures, walking, cycling, transit usage, use of TDM measures, CIL, and parking variance applications.

It is important to understand how parking and other measures within the Kleinburg Village study area are functioning. As such, the status of the Implementation Plan and progress that has been made should be duly assessed.



Monitoring and managing the function of parking in Kleinburg Village can be achieved by asking the following questions:

- Are desired outcomes being achieved?
- Are the objectives of the Parking Strategy being met?
- Should alternate actions be taken?

8.4.1 Monitoring Strategies

The parking strategies for Kleinburg Village change as time progresses through the various study horizons. The monitoring strategy would therefore need to be flexible and dynamic to account for these changes. Monitoring of strategies should commence prior to implementation, where appropriate, to establish baseline conditions for assessment of how the strategy has performed over time.

Strategies can include data collection, targets, responsibilities, and budget. City Staff and/or a potential Parking Authority should conduct annual progress and status reviews of the parking strategy. With effective monitoring, implementation of strategies for a horizon can potentially be adjusted (i.e. brought forward, delayed, or postponed indefinitely based on the assessed needs of the Village).

Monitoring in Kleinburg Village is expected to be funded partly by CIL, which is paid into the Kleinburg Parking Reserve. Other sources of monitoring include reviewing any provided parking justification reports of traffic studies provided in support of development applications, or regular monitoring performed by the City in the form of data collection.

In the event that monitoring identifies substantial increases in parking demand, funds can be used to target measures for the acceleration of parking supply increases in the Kleinburg Village. Should monitoring identify that future parking requirements will be much less than forecasted for study horizon needs, funds can be reallocated to other areas such as active transportation measures or enforcement. Given long-term planning for Kleinburg Village, the aim is to develop a core that has a pedestrian friendly public realm. Short-term funding can be used for monitoring and localized parking improvements. Medium- and long-term funding can be used for demand monitoring, follow-up surveys, or deployment of other projects such as micro-mobility stations, real-time parking applications, etc.

The Monitoring Strategy will cover a number of solutions proposed for the Village. Although solutions have been recommended for specific horizons, monitoring for many of these solutions and various metrics are proposed either prior to or post recommended timelines. Monitoring in this way will help to inform if early implementation is required, solutions can be delayed, or improvements are needed to the solution over time after implementation. **Table 8-5** provides the Monitoring Strategy for Solutions and **Table 8-6** for study Metrics.

Table 8-5 Monitoring Strategy (Solutions)

Strategy to be Monitored	Strategy	Timeline	Target	Action	Trigger	Next Steps	Who is Responsible
Wayfinding Measures	**Feedback Surveys** Online surveys can be developed for users to provide feedback on quality and satisfaction of wayfinding measure. Surveys can be hosted on City website and response directed to City staff	Short/ Medium/ Long-term	Satisfactory rating on feedback	Surveys accessible via weblinks on the City's website and also provided as a prompt once wayfinding maps have been downloaded.	Download of maps or attempt to exit webpage	Revision or update based on user feedback	City of Vaughan
	App Data App or website for pilot program can prompt for automatic user for feedback or satisfaction rating after each use. User recommendations should be sought to improve app or website to make it more user friendly			Feedback request prompts to allow the user to identify there satisfaction with the app and software	Completion of trip using the service or attempt to exit the service if a trip has not been completed		
Eco-mobility / Micro-mobility	**Usage Data Options** Trends in usage from user data to be obtained from Eco/Micro-mobility stations available within the Kleinburg Village and account data of users	Medium/ Long-term (5 years to 2041)	No target at inception - baseline established Target of 2-5% annual increases for medium and long terms	User accounts and app to manage user preferences and store usage information	Inception of service	Collected data to be used for the management and expansion of service and to be based on number of stations at implementation and range of use by visitors and community	City of Vaughan Parking Authority
	Intersection Volume Counts Volumes to be collected via counts at Kleinburg Village intersections			Data to be collected as part of standard intersection count program	None		
Review/Implement New Parking Technologies	**Best Practice Review** Conduct best practice reviews of new technologies and systems implemented locally and beyond. Review can be used to identify the best technologies to introduce to the Kleinburg Village, methods of implementation and operation.	Long-term (10 years - 2041)	Provides best practices of adopting systems that have been implemented, number of working applications, its benefits and failures of those initiatives.	Reviews of new technology to be undertaken by City/Parking Authority to identify candidates for further assessment and potential pilot projects	New and emerging technologies that have been successfully trialed and have been identified by City/Parking Authority as a potential candidate for pilot program	City to identify key technology enhancements that will improve Kleinburg Village parking experience, enable advanced management systems, and improve data tracking to make parking more efficient, and integrated with apps that support shared parking and innovative practices.	City of Vaugahn Parking Authority
	Cost Benefit/Feasibility Analysis Analysis/reviews to be conducted on new and emerging technologies to assess appropriateness for implementation in Kleinburg Village. Revenue generation, funding or parking demand may limit the ability or need for certain ventures.		Operate at a break-even cost.	Needs of Village to be assessed, cost of implementation and operation in addition to benefits to be gained, to identify new technology to be introduced.	New and emerging technologies that have been previously successfully in improving or reducing parking operations enter consideration for Village	Identify pilot studies that can be introduced to provide parking technology that enhances parking availability, system performance, and convenience	
	Pilot Programs Engage third parties as a cost-effective means of implementing new measures and collecting data to identify the best options for the Kleinburg Village and where future resources should be invested		Successfully program out comes – i.e. increased parking supplies, reduced operation cost, reduced parking demand, etc.	City to engage and establish agreement with "service supplier" to set up and run pilot project	Successful evaluation of cost benefit/feasibility analysis	Enhance parking experience through updated technologies to provide more information, consistency and predictability to parkers.	
Mode-shift Via TDM	**Transit** Transit ridership data to be obtained and reviewed (quarterly, annually, etc.). City/YRT to promote route and used trends in ridership data to capitalize on seasonal variations.	Medium/ Long-term (5 years to 2041)	Long-term targets per City's OP, with medium-term targets derived by City based on current ridership levels.	Ridership data to obtained from YRT and City to work with YRT on ridership campaigns to promote service through Village	None - data continuously obtained and published by YRT	Integration of modes, connection to first/last mile service and new technologies.	City of Vaughan YRT
	Active and Alternative Modes City to work with KBIA and KARA to promote active measures record and trace travel behaviour with input and advice from City. Monitoring program part of TDM measures to be strictly enforced for new developments. City to play an active role in administering and collecting data to improve active and transit mode share.		100% implementation of measures included in TDM plans for new developments.	Included as part of relevant studies for development applications, Site Plan Agreements and City TDM Coordinator to work with developers to administer and collect surveys and other monitoring materials.	Planning applications for new or redevloped sites	Included as part of relevant studies for development applications, Site Plan Agreements and City TDM Coordinator to work with developers to administer and collect surveys and other monitoring materials.	City of Vaughan
	Emerging-Mobility "Shared Mobility" engage travel preferences toward what many expect to be a profound paradigm shift, and potentially a significant drop in personal-auto parking demand. This relatively recent mobility phenomenon has good company in several, more-established Shared Mobility elements, such as car-share, bike-share, and computer-matched ridesharing.		Ensure that most parking provides access benefits that allow for private and public investments to shift away from parking where and when mobility and TDM become more relevant and effective.	Provide on-site mobility and TDM amenities to encourage use	New developments, on-site improvements, redevelopments	Continue to provide services like Uber and Lyft are already significantly reducing auto-dependency, allowing more commuters to shift their primary mode away from driving by providing a nimble, affordable, and increasingly-familiar, non-driving commute option.	City of Vaughan Parking Authority
Parking Authority	**Parking Management** Parking revenue and expenditure to be recorded annually for Kleinburg Village and to be used as criterion in addition to enforcement and debt payment ratios to justify developing a Parking Authority.	Short/ Medium/ Long-term	Dedicated parking management resources required for Kleinburg Village.	Monitoring to begin prior to medium-term for efficiency and management of parking related decisions, enforcement queries, payments and development of new parking supply	City departments have insufficient or require addition resources to manage parking for Village	Monitor and advise Council if needed	City of Vaughan
Paid Parking	**Revenue Requirements** CIL, DC charges, parking reserve levels to be reviewed with planned expenditure on Kleinburg Village's parking needs. City to assess potential deficiencies to identify future need for paid parking in Kleinburg Village. Paid parking assessment to also consider impacts on illegal parking, attractiveness to Kleinburg Village, occupancy levels, Kleinburg Village growth and expected demand.	Short/ Medium/ Long-term	Identify when parking reserve fund cannot adequately support future parking needs or parking deficit is forecasted.	Monitoring to commence from short-term for planning and management of spending for Village projects and to identify need	Depleted parking reserve or forecast that indicate the inability to fund future initiatives/projects	Monitor and advise Council if needed	City of Vaughan
Redevelop Old Fire Hall (at Grade Parking) or Parking Structure	**Redevelopment** Parking structure to be built to provide additional parking capacity Site to provide community uses in the event of low Village parking demand	Medium/ Long-term	Significantly high parking demand Demand well within parking supply	Parking data demand to be collected through various horizons with trends and forecasts update with new data to assess existing and future parking needs	Parking within Village at or exceeding capacity requiring the need for additional supply	Recommend to Council what type of redvelopment is proposed for site based on parking trends and demand	City of Vaughan

Table 8-6 Monitoring Strategy (Metrics)

Metric to be Monitored	Strategy	Timeline	Target	Action	Trigger	Next Steps	Who is Responsible
Parking Demand and Occupancy	**Wayfinding Pilot Program** Parking data to be collected for duration of horizon from pilot program. Pilot program may not include all public and private parking spaces in Kleinburg Village however, will provide detailed data for pilot study area.	Short-term (1 - 5 years)	- Establish baseline for average time needed to find parking space within study area - Provide parking demand for pilot area	Identify area to be used for pilot program. Time taken by driver to locate identified vacant parking space within study area to be logged	Demand routinely exceeds 80%	Conduct assessments of other public parking locations to better assess Kleinburg Village demand. Confirm full roll our for Village. Identify software and system improvements.	City of Vaughan Parking Authority
	New Development Application Parking Studies New commercial developments required to complete parking studies as part of their development or variance application to also include assessment of public parking lots and/or on-street segments as defined by City requirements/ approval process.	Short/ Medium/ Long-term	New developments to provide required minimum number of parking spaces on-site	City planning and engineering staff to request parking studies be completed as part of development application for proposals not meeting by-law parking requirements	Parking supply for proposed development not meeting by-law requirements	Add supply of site to Kleinburg Village total supply and include in future data collection exercises.	Developer City of Vaughan
	Parking Demand Surveys Parking demand surveys to be conducted periodically to assess Kleinburg Village parking demand, supply, and occupancy. Surveys to be used to identify parking trends in Kleinburg Village, including peak times, peak parking locations, and sites that are over and under subscribed. Surveys to document illegally parked and vehicles exceeding parking limits (3 hours).		Maximum occupancy levels - - Medium-term 80% - Long-term 85%	Surveys to be spread a maximum of 5 years apart. Development Engineering to determine schedule and oversee surveys. External consultant to undertake the surveys	None Completed based on Development Engineering guideline/schedule	Identify if additional supply needed or new methods to better distribute parking usage required. Consultation with residents, KBIA and KARA due to parking shortages in Village. Examine measures to increase parking supply or advance medium-term or other solutions.	City of Vaughan (Development Engineering department)
	Real-time Wayfinding System Parking data for Kleinburg Village to be collected from pilot program. Pilot program may not include all public and private parking spaces in Kleinburg Village however, will provide detailed data for pilot study area			Parking demand and occupancy data to be collated for all public spaces (private spaces wishing to be included in program) for the duration of horizon.	- Demand routinely exceed 80% medium-term and 85% long-term - Demand well within available supply	Sustained or annual increase in demand to levels above 80% for medium-term or 85% for long-term to trigger redevelopment of Old Fire Hall. Low demand, within parking supply to trigger redevelopment of Old Fire Hall site for community use and parking.	City of Vaughan Parking Authority
Illegal Parking and Overstaying	**Parking Enforcement** Enforcement data to identify types of infractions, location, and frequency	Short/ Medium/ Long-term	All infractions to be recorded	Enforcement to continue in Village with infractions being cataloged to identify areas where further action may be required	Baseline to be established and annual reductions in infractions to be targeted. Annual increases in infractions to trigger enhanced enforcement	Devise measures to address infractions. Measures may include pricing, tag and tow, awareness or notification campaign, improved signage, collaboration with KBIA or KARA.	City of Vaughan Parking Authority
	Business / Resident Complaints Report and response to infractions to document with enforcement data		Respond to all complaints in shortest time period possible				
Cyclist and Pedestrian Volumes	**Intersection Volume Counts** Counts of pedestrian and cyclist volumes to be collected via traffic counts at Kleinburg Village intersections. Intersections may include: Islington Avenue at Nashville Road, Kellam Street and Stegman's Mill Road. Pedestrian volumes will vary based on segment of roadway being considered, travel mode to Kleinburg Village, parking location and destination. Accepted that drivers accessing an establishment directly from its private parking lot will not venture onto Islington Avenue or Nashville Road	Short/ Medium/ Long-term	Baseline established in short-term, future horizons to target growth on established baseline	Data to be collected as part of standard intersection count program	None	Year-on-year increase desired. Develop programs to encourage residents to walk and cycle. Target school age children more likely to cycle to school, introduce programs like walking school bus.	City of Vaughan YRDSB
	Village Mobility Options Cyclist user data to be obtained from Eco/Micro-mobility stations available within Kleinburg Village.	Medium/ Long-term (5 years to 2041)	No established targets for usage. City to develop targets	User accounts to provide usage data (e.g. duration, number of times used)	Implementation of stations and system		
Vehicle Volumes	**Intersection Volume Counts** Vehicle volumes to be collected via traffic counts at Kleinburg Village intersections. Intersections may include: Islington Avenue at Nashville Road, Kellam Street and Stegman's Mill Road. Based on data collection method, counts can be used to collect cyclist and pedestrian volumes	Short/ Medium/ Long-term	Baseline volumes established in short-term, future horizons to target reduction in traffic volumes	Data to be collected as part of standard intersection count program	None, however may be required as part of traffic impact studies by developers.	None in short-term. Year-on-year decrease to reduce volumes to modal split expressed in York Region guidelines for corridors. Continuous reduction in traffic volumes to be used for planning and implementation of pedestrian-oriented or pedestrian-only core in long-term	City of Vaughan

9

9 SUMMARY AND CONCLUSIONS

9.1 SUMMARY OF FINDINGS

- Several **parking and mobility challenges** were identified in Kleinburg Village through the course of this study. Challenges identified include:
    - High parking demand within high activity or “hotspot” areas
    - Limited public parking spaces
    - Private off-street lots are not available for general public use
    - Inadequate signage and pavement markings
    - Insufficient visibility or illumination of existing signage/restrictions
    - Traffic volumes on Islington Avenue during peak periods
    - Kleinburg Public School and YMCA daycare parking demand is high
    - Safety concerns with respect to active transportation
    - Improve special event communication to the general public
- The Village **does not have a severe parking shortage**. However, the arrangement and management of parking results in a series of challenges that create difficulty for visitors. Visitors to Kleinburg Village seek to park on-street nearby main attractors creating hotspot areas due to this high demand, resulting in limited availability of parking spaces. The public parking supply in the Village is somewhat limited, and the large supply of private parking is not always available for public use, or desired
- **Public perception** exists that a consistent parking deficiency is present within the Kleinburg Village core. This perception is fuelled by the desire to access parking spaces in desirable or hotspot areas such as the post office and the former Starbucks

which are/were heavily subscribed for extended periods of time. This is further compounded by poor signage to direct visitors to public parking and the lack of legibility of existing signage presenting difficulty to visitors attempting to locate available parking spaces

- The study inventoried a parking supply of 690 non-residential parking spaces, not including 64 spaces at Bindertwine Park, as this location is beyond a 5-minute walking distance of the Village core
- Parking surveys during the Summer, Fall and a special event were used to identify parking occupancy (i.e. the ratio of parking demand to supply) as shown in **Table 9-1**. The study area exhibited a **peak occupancy of 55%**

Table 9-1 Summary of Peak Parking Demands

	Survey Period	Peak Period	Total Occupancy	Off-Street		On-Street
				Private	Publicly Owned*	Public
Summer	Weekday - Aug 22, 2019	2:00 – 2:30 PM	49%	47%	60%	57%
	Weekend - Aug 24, 2019	2:00 – 2:30 PM	42%	39%	46%	50%
		8:30 – 9:00 PM	55%	53%	37%	68%
Fall	Weekday - Oct 24, 2019	1:30 – 2:00 PM	50%	46%	77%	60%
		8:30 – 9:00 PM	43%	36%	46%	70%
	Weekend - Oct 26, 2019	1:30 – 2:00 PM	55%	53%	20%	73%
Special Event	Weekday - Nov 29, 2019	7:30 – 8:00 PM	53%	47%	49%	75%

- Kleinburg Village lacks consolidated off-street parking that is readily available for public use
- Poor signage and wayfinding make it difficult to locate available parking spaces. Improvements are required to assist drivers to locate available parking spaces in Kleinburg Village

9.2 RECOMMENDATIONS

To effectively address future parking needs of Kleinburg Village, a parking strategy was developed. An Implementation Plan was developed to assist City staff by providing a framework of the steps needed to implement the recommended solutions. It will aid Council in making informed budget decisions in prioritizing solutions to be implemented and it will also seek input from stakeholder and service providers to reflect the growing needs of the Kleinburg Village community. A summary of the Implementation Plan is provided in **Table 9-2**.

Table 9-2 Strategy Implementation Plan Summary

Short-term
Parking Restriction Signage: an immediate measure with signage and temporary pavement markings to be implemented as early as possible (within year 1). Immediate measures are estimated to cost $4,400 for signage and pavement marking. Changes in parking restrictions, pavement marking and signage will be required as improvements to the streetscape take effect. Signage programme to be coordinated with supply changes and operating requirements (i.e. school, library, partnership spaces, etc.)
Parking Partnerships: require agreements to be made between the City and other parties. Establishment of parking partnerships will increase the Kleinburg Village parking supply providing new parking options for visitors. Implementation to be coordinated with signage restrictions and wayfinding.
Canada Post Community Mailboxes: implementation under the purview of Canada Post. City recommended to engage with Canada Post regarding implementation. City engagement process with Canada Post to be commenced immediately as duration of process is unknown. Notification of community mailboxes installation and operation would need to be provided to residents and business. Special arrangements will be required to be made for persons with disabilities and seniors with mobility challenges.
Parking lay-by: lay-by parking to be constructed as part of the Islington Avenue streetscape improvement works. Estimated to commence within the next two (2) years and is expected to progress as works proceed northwards on Islington Avenue.
Clear Delineation of Parking Spaces/Pedestrian Areas: delineation of parking spaces, improvement of pedestrian areas and provision of bicycle facilities to coincide and progress with implementation of lay-by parking and **Islington Avenue streetscape improvement works**.
Public Parking Lot: new parking lot in boulevard area north of John Street to be developed concurrently with **Phase 2** of the **Islington Avenue streetscape improvement works**.
Wayfinding Strategy: should be implemented concurrently with parking restriction signage. City to contact service provider to initiate terms and conditions to implement a **pilot program** for real-time parking technology. As parking supplies increases during the short-term, the wayfinding strategy must be dynamic to capture the evolving village parking.
Use of Bindertwine Park: parking spaces readily available. Use of spaces may initially become important due to streetscape works. City to engage KBIA and KARA to initiate and develop plan for short to long-term use of parking spaces. Development of bicycle facilities – repair stations, changing facilities, connections to trails to be explored.

Medium-term
Parking Partnerships: City to continue to pursue opportunities in the medium-term to delivery new parking partnership for the Village.
Consolidated Private Parking: consolidated parking assessments to be made on a case-by-case basis via the submission of parking justification studies. A review of the study would be used to determine feasibility and provide approval for a proposal to move forward.
Real-time Parking/Dynamic Wayfinding Systems: full roll-out of dynamic real-time wayfinding systems following completed pilot program. Supplemental technology to complement the system (webpage, mobile apps, payment options, etc.) would need to be established.
Interconnected Bike / Pedestrian Paths: identify and close prevailing gaps in pedestrian and cycle networks, integrate and expand networks where possible and include improvements along Stegman's Mill Road and connectivity to Islington Avenue.
Eco-mobility and Micro-mobility: City/parking authority to determine types of eco-mobility and micro-mobility to be implemented, docking station type, station locations, payment methods and options. Stations can be implemented gradually.
Village Square (Pedestrianized): engagement and agreement with property owners and KBIA to establish a pedestrian-oriented Village square / centre. Use, operation and maintenance of area coordinated and detail in established agreements for Village square.
Subject to Further Monitoring
Parking Authority: Not recommended as part of this study. Need for implementation subject to monitoring and future review
Paid Parking (Village core): Not recommended as part of this study. Need for implementation subject to monitoring and future review

Long-term
Review / Implement New Parking Technologies: New technology to be implemented would require cost-benefit assessments to identify those most suitable for the Kleinburg Village. Easily adaptable technologies requiring little infrastructural change such as Wi-Fi, can be incorporated into the development of a pedestrian-oriented core, micro-mobility stations, etc.
Mode-shift via Transit and TDM: The growth of alternative travel modes is anticipated via enhancement of existing measures to influence travel behaviour creating mode-shifts. Implementation of measures (i.e. micro-mobility, carpooling and car-share) can be introduced at new parking facilities and developments via agreements with relevant stakeholders. The City should work with York Region regarding transit service to Kleinburg.
Pedestrian-only Village core: Council approval required for closure of designated section of Islington Avenue to vehicle traffic. Consultation with stakeholders including KBIA and KARA required. Traffic calming measures required for surrounding road network, and coordination with York Region required. Policy guideline or by-law guidance for pedestrianized Kleinburg Village square to be developed.
Subject to Further Monitoring
Redevelop Old Fire Hall (at Grade Parking) or Parking Structure: Implementation to be determined by monitoring program with trigger for development proposed at 80% occupancy of Kleinburg Village parking supply. Alternatively, early redevelopment of the site to provide other City community facilities can also allow for an opportunity to provide public parking at the site.
Paid village wide parking: Not recommended as part of this study. Need for implementation subject to monitoring and future review



9.3 POLICY AND MANAGEMENT SOLUTIONS

To achieve the goals of the parking strategy, policy solutions must fulfill the Study's overall purpose and its objectives. Recommended policies include:

- **Monitoring** – A robust strategy is recommended for the study area to be administered by the City. The monitoring strategy is required to measure the effectiveness of the implemented measures and to identify triggers for new, additional, or next steps
- **Cash-in-Lieu** – Updated policies for the calculation and application of Cash-in-Lieu for Kleinburg Village has been recommended. The updates are to be considered based on the appropriateness of the application for the proposed development
- **Parking Space Management** – Policy managing parking restriction and parking enforcement is to play an important role in optimizing the parking supply, whilst supporting measures for efficient payments of tickets and fines
- **Land Use** – Practicing strategic measures and planning inline with OP guidelines and targets. Developments will target improvements to the public realm, support shared parking policy, and require development parking is accommodated on-site
- **Financial Plan** – Financial strategies will be used to manage revenue generation and how parking is financed. The financial plan will include, Cash-in-Lieu of parking, development charges, and Capital Budget projects as appropriate

9.4 CONCLUSIONS

Based on the comprehensive parking demand surveys and robust public and stakeholder consultation completed as part of this study, Kleinburg Village is faced with a number of parking challenges, despite a sufficient number of physical parking spaces being available. These challenges result from the Village's built-form and character, as well as the lack of clearly defined public parking and parking guidance. It is recommended that the City take immediate actions towards improving current parking conditions as to better align the Village's parking infrastructure with its built form and user behaviours.

Through the medium- and long-term, this Study has forecasted growth in parking demand. However, this growth can be accommodated by the Kleinburg Village parking supply and the recommended solutions. There is a significant opportunity in the medium- and long-term to transition Kleinburg Village to a more pedestrian-oriented space, celebrating its historic and charming character. However, to achieve this transition, parking demand will need to be effectively managed. This management can be achieved through parking partnerships, exploring new technologies, and implementing measures to promote the use of alternative modes of transportation. The Kleinburg community should continue to be consulted with through the short-, medium- and long-term to ensure that the parking strategies continually take into consideration and respond to the public's existing and future needs.



Appendicies

Appendix A – Background Document Review

Appendix B – Public Consultation Materials

Appendix C – Existing Conditions Review

Appendix D – Parking Data Summary

Appendix E – Parking Forecasting

Appendix F – Evaluation of Solutions

Appendix G – Parkade Feasibility and Costs

Appendix H – Online Survey Results

Appendix I – Kleinburg Cash-in-Lieu