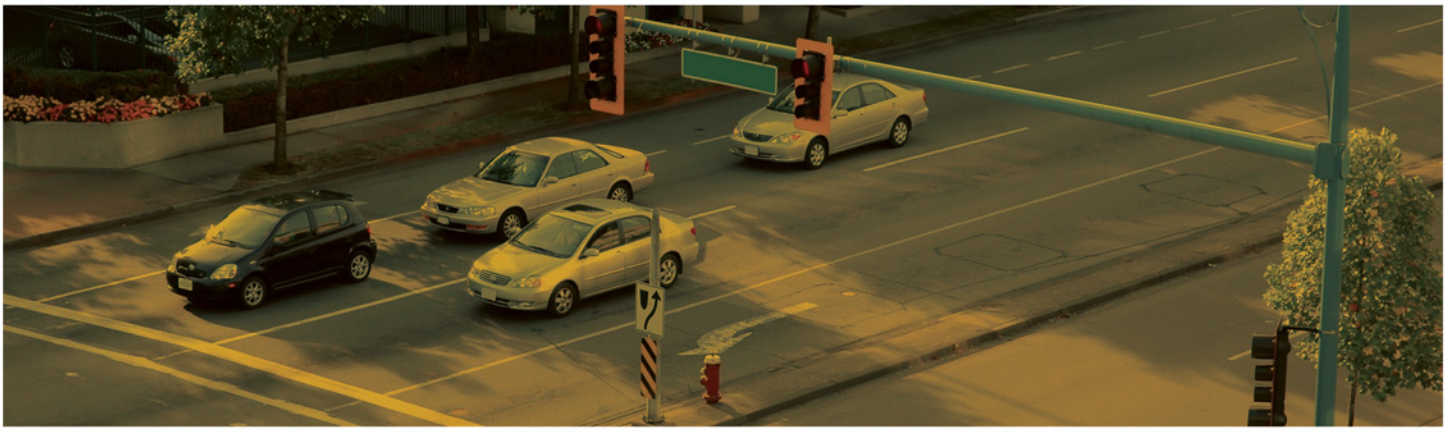
TATHAM ENGINEERING

Enhancing our communities



105-111 Edgehill Drive

PARKING STUDY

1980168 Ontario Inc.

File 418402 | March 29, 2019

Document Control

File:
418402

Date:
March 29, 2019

Prepared by:
Tatham Engineering Limited
41 King Street, Unit 4
Barrie, Ontario L4N 6B5
T 705-733-9037
tathameng.com

Prepared for:
1980168 Ontario Inc.
61 Oldham Road
Toronto, Ontario M9A 2B9

Authored by:	Reviewed by:
	 
David Perks, M.Sc., PTP Transportation Planner, Project Manager	Michael Cullip, B.Eng. & Mgmt., M.Eng., P.Eng. Vice President Head Office Operations

Disclaimer	Copyright
The information contained in this document is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Tatham Engineering Limited undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.	This document may not be used for any purpose other than that provided in the contract between the Owner/Client and the Engineer nor may any section or element of this document be removed, reproduced, electronically stored or transmitted in any form without the express written consent of Tatham Engineering Limited.

Version	Date	Description
1	January 16, 2019	Final report
2	March 29, 2019	Revised to address City comments

Document Contents

Tables

Figures

1 Introduction

Tatham Engineering Limited was retained by 1980168 Ontario Inc. to conduct a parking study in support of the planned residential townhouse development to be located at 105-111 Edgehill Drive in the City of Barrie (location illustrated in Figure 1). This report is an update of the initial *105-111 Edgehill Drive Parking Study* (dated January 16, 2019) and addresses review comments provided by City of Barrie staff.

The purpose of this study is to establish the parking needs of the subject property. In this regard, the study has considered the City of Barrie's current parking requirements, parking survey results from proxy sites within Barrie, parking standards adopted by other municipalities, findings from similar parking studies and methodologies employed in establishing parking demand.

2 Proposed Development

2.1 SITE LOCATION

As previously noted, the site is located at 105-111 Edgehill Drive in the City of Barrie (as illustrated in Figure 1). The property is situated on the south side of Edgehill Drive, approximately 155 metres west of the intersection of Edgehill Drive with Anne Street.

2.2 DEVELOPMENT DETAILS

The proposed 105-111 Edgehill Drive residential development will consist of 63 back-to-back condominium townhouse units contained in 4 blocks. A site plan is provided in Figure 2.

2.3 PARKING SUPPLY

The proposed development will provide 79 parking spaces - 62 indoor spaces (located above grade but below the townhouse units) and 17 outdoor spaces - translating to 1.25 spaces per unit. It is understood that the parking supply will reflect 1 space per unit plus 0.25 spaces for visitor parking (i.e. 63 resident spaces and 16 dedicated visitor parking spaces). It is noted that the proposed parking supply does not satisfy the existing parking requirements of the City of Barrie, based on the proposed use and the associated parking requirements noted in the *City of Barrie Comprehensive Zoning By-law 2009-141.* It is the intent of this parking study to establish the parking needs for the site and recommend an appropriate parking requirement.

3 Parking Review

To establish an appropriate parking supply for the site, a review was conducted to consider the following:

- City of Barrie Comprehensive Zoning By-law 2009-141 parking requirements;
- residential parking standards adopted by other municipalities;
- ITE Parking Generation Manual, 4th Edition; and
- key findings from other parking studies.

3.1 MUNICIPAL PARKING STANDARDS

3.1.1 City of Barrie

The *City of Barrie Comprehensive Zoning By-law 2009-141* requires that a residential building containing more than 3 dwelling units provide 1.5 spaces per unit. The City's by-law does not indicate a specific provision for visitor parking.

3.1.2 Other Municipalities

Parking standards adopted by other municipalities for the townhouse land-use (or equivalent use) are summarized in Table 1.

Table 1: Parking Rates by Municipality – Townhouse

MUNICIPALITY	PARKING RATES		
	Base	Visitor	Total
Town of Aurora	1.2 spaces per unit	0.3 spaces per unit	1.5 spaces per unit
City of Cambridge	1.0	0.5	1.5
City of Guelph	1.0	0.2	1.2
City of Kitchener	0.8 to 1.0	0.0 to 0.1	0.8 to 1.1
Town of Newmarket	1.5	0.25	1.75
City of Orillia	1.125	0.375	1.5
City of Owen Sound	1.25	not specified	1.25
City of Peterborough	1.0 to 1.75	not specified	1.0 to 1.75

As indicated, the parking rates for townhouse land-uses range between 0.8 and 1.75 spaces per unit. Most of the noted rates are blanket rates in effect for an entire geographical region regardless of development attributes, area demographics or population densities. The exception being the Cities of Kitchener and Peterborough, where parking rates are based on site location (i.e. lower parking rates in the downtown areas and higher rates in areas with lower development density). The Kitchener and Peterborough rates recognize that sites within built-up urban areas are typically better served by transit and closer in proximity to necessary amenities/services (i.e. less reliance on the private automobile). It is noted that the City of Barrie's rates are consistent with most of the municipalities reviewed and are not considered overly conservative.

3.2 ITE PARKING GENERATION MANUAL, 5TH EDITION

The Institute of Transportation Engineers (ITE) recently released the *ITE Parking Generation Manual, 5th Edition.* Released in January 2019, the 5th Edition provides updated parking supply and demand data for several residential land-uses (the 4th Edition manual was released in 2010). In considering the subject development, the data provided for the *multifamily housing - mid-rise* (ITE code 221) was reviewed. The ITE data is summarized in Table 2. It is noted that the ITE data reflects suburban locations.

Table 2: ITE Parking Generation – Residential Condominium/Townhouse

TYPE OF PARKING RATE	PARKING RATES
Average Parking Supply	1.70 spaces per unit
Average Parking Demand	1.31
Peak Parking Demand Range	0.75 to 2.03
Parking Demand - Fitted Curve Equation[1,2]	P = 1.34(X) - 8.73

[1] Fitted curve equation where P = number of parked cars and X = number of dwelling units
[2] Reflects peak weekday parking demand (Mon-Fri) between 10:00PM and 5:00AM

As noted, the peak parking demand range varies widely (0.75 to 2.03 spaces per unit). This is an indication that other characteristics specific to individual sites and not otherwise recorded in the ITE data provided, have influence on the parking demand (i.e. location, transit service, demographics, etc.).

As noted in Table 2, the *ITE Parking Generation Manual* includes a fitted curve equation that is derived from the parking demand data for the noted land-use. The fitted curve equation can be used to estimate parking demand and is typically applied when the Coefficient of Determination (R^2) is greater than 0.75. The R^2 value is a statistical measure that illustrates the relationship between an independent variable (in this case dwelling units) and dependent variable (parked cars). For example, an R^2 value of 0.75 indicates that 75% of the variance in the number of parked

cars is accounted for by the variance in the number of dwelling units. With respect to the *multifamily housing - mid-rise* land-use, the R^2 value is 0.97, indicating that the number of dwelling units is an excellent indicator of parking demand based on ITE's data set. When applying the fitted curve equation to the proposed 63 unit townhouse development, the estimated parking demand is 76 parked vehicles.

3.3 PARKING SURVEYS AT PROXY SITES

3.3.1 Proxy Sites

Parking surveys were conducted at three proxy sites within the City of Barrie. It is noted that no exact comparable development could be identified, recognizing that the proposed back-to-back townhouse development is a relatively new built-form within the City. Most townhouse developments currently built and occupied (condominium and freehold), include private garages and driveway parking – with condominium developments including additional visitor parking areas. The proposed development will not have private garages or driveway parking; rather, a combination of indoor parking (located above grade but below the townhouse units) and outdoor parking will be provided.

Southwoods Development

City staff identified the Southwoods development, located on the southwest corner of Veterans Drive with Harvie Road, as a proxy site. The Southwoods development includes a combination of 56 conventional condominium street townhouse units (i.e. with dedicated driveway space) and 32 stacked townhouse units, each with a single assigned parking space located in a common parking area. The stacked townhouse units are contained in four 8-unit blocks. Notwithstanding the driveway spaces associated with the street townhouse units, there are a total of 76 common area parking spaces located throughout the development, 32 of which are assigned to the stacked townhouse units. The remaining 44 common area parking spaces consist of 22 visitor parking spaces, 17 rental spaces and 5 barrier free spaces. The visitor spaces are available for visitors to the entire development, whereas the rental units are available to any unit that wishes to rent an additional parking space (these essentially become a dedicated space for the unit that is renting them). Overall, the Southwoods development provides 132 spaces (1.5 spaces per unit) consisting of 56 driveway spaces (for street townhouses) and 76 common area parking spaces.

235-245 Ferndale Drive South

The second proxy site is a townhouse development located at 235-245 Ferndale Drive South. The Ferndale development consists of 78 condominium stacked townhouse units (6 multi-unit blocks) with 117 parking spaces (resident or visitor parking was not clearly identified).

11-19 Cheltenham Road

The third proxy site is a townhouse development located at 11-19 Cheltenham Road. The Cheltenham development consists of 40 condominium stacked townhouse units (five 8-unit blocks) with 63 parking spaces (40 designated spaces, 7 visitor spaces, 14 rental spaces and 2 barrier free spaces).

3.3.2 Parking Surveys

The parking surveys were conducted by Tatham Engineering staff as follows:

- Ferndale site - Saturday January 12, 2019 (10:00 PM to 12:00 AM); and
- Southwoods and Cheltenham sites - Saturday March 23, 2019 (10:30 PM to 12:30 AM).

The timing of the counts (weekend evening) was dictated by City staff to ensure most residents would be at home. Each site was surveyed 4 times over the two-hour period. The parking survey results and resulting parking demands are provided in Table 3 through Table 5.

Table 3: Parking Survey – Southwoods

PARKING STATISTICS	PARKING DEMAND			
	Count 1	Count 2	Count 3	Count 4
Number of units	88 condominium townhouse units			
Parking Demand	97	94	98	98
Parking Supply	132	132	132	132
Parking Occupancy	73%	71%	84%	84%
Parking Demand per Unit	1.10	1.07	1.11	1.11

Table 4: Parking Survey – 235-245 Ferndale Drive

PARKING STATISTICS	PARKING DEMAND			
	Count 1	Count 2	Count 3	Count 4
Number of units	78 condominium townhouse units			
Parking Demand	74	76	81	81
Parking Supply	117	117	117	117
Parking Occupancy	63%	65%	69%	70%
Parking Demand per Unit	0.95	0.97	1.04	1.04

Table 5: Parking Survey - 11-19 Cheltenham Road

PARKING STATISTICS	PARKING DEMAND			
	Count 1	Count 2	Count 3	Count 4
Number of units	40 condominium townhouse units			
Parking Demand	45	49	49	48
Parking Supply	63	63	63	63
Parking Occupancy	0.71	0.78	0.78	0.76
Parking Demand per Unit	1.13	1.23	1.23	1.20

As indicated, the parking demand varies between the proxy sites, ranging from 1.07 to 1.11 at the Southwoods development, 0.95 to 1.04 at the Ferndale development and 1.13 to 1.23 at the Cheltenham development.

Recognizing that the Southwoods development has a combination of street townhouse units and stacked townhouse units that share the available visitor and rental parking spaces, additional analysis of the parking survey data was conducted. The parking survey was conducted so as to observe driveway spaces, dedicated spaces, rental spaces, visitor spaces and barrier free spaces. The Southwoods parking area is illustrated in Figure 3. A breakdown of the peak parking demand by parking space type, as observed during the parking survey, is provided in Table 6. It is noted that the parking demand per unit reflects the number of units served by the respective parking type (i.e. the rental and visitor spaces are available for use by all 88 units of the development).

Table 6: Southwoods - Parking Demand by Type

PARKING TYPE & APPLICABLE UNIT COUNT		PEAK PARKING DEMAND[1]			
		Parking Supply	Parking Demand	Parking Occupancy	Parking Demand per Unit
Driveway Spaces - Street Towns	56	56	43	0.77	0.77
Dedicated Spaces - Stacked Towns	32	32	28	0.88	0.88
Rental Spaces	88	17	12	0.71	0.14
Visitor Spaces	88	22	15	0.68	0.17
Barrier Free Spaces	88	5	0	0	0

[1] Reflects peak usage observed during parking surveys

To establish the overall parking demand for the stacked townhouse units, consideration has been given to the observed usage of the 32 spaces dedicated to the stacked townhouse units, in addition to the overall site demand for the rental and visitor spaces. As noted in Table 6, the peak observed demand for the dedicated spaces was 0.88 spaces per unit (i.e. 28 of the 32 dedicated spaces were occupied). With respect to demand for the rental and visitor spaces, the peak parking demand was 0.14 and 0.17 spaces per unit, respectively. Given that the rental and visitor parking spaces are available to the entire site, the observed demand is considered applicable to both unit types (i.e. street town vs stacked town). In considering the noted peak demand by parking space type, the overall parking demand for the stacked townhouse units is in the order of 1.19 spaces per unit (0.88 + 0.14 + 0.17 = 1.19).

3.4 CITY OF VAUGHAN PARKING STUDY

In 2010, the City of Vaughan commissioned a review of the City's parking standards. The review was documented in the *Review of Parking Standards contained within the City of Vaughan's Comprehensive Zoning By-Law: Draft Parking Standards Report*[1]. While the report remains in draft, the recommendations were endorsed in the *City of Vaughan Transportation Master Plan*. While it is recognized that the review was specific to Vaughan's parking standards, the draft report is comprehensive in its review of parking standards for multiple land-uses and contains valuable insights with respect to establishing parking rates.

The report identified that parking rates must balance competing objectives – such as ensuring sufficient parking supply while encouraging non-auto modes of transportation. Recognizing that development characteristics and transit provision can vary based on location, the report established a set of "urban structure categories". The following categories were recommended:

- high order transit hubs;
- primary centres/primary intensification corridors;
- local centres; and
- rest of the City.

In addition to establishing parking requirements by location, the report also recommended that rates vary by the size of dwelling unit as determined by the number of bedrooms. The parking rates recommended for a multiple family dwelling (which includes condominium townhouse developments) are summarized in Table 7.

[1] Review of Parking Standards contained within the City of Vaughan's Comprehensive Zoning By-law: Draft Parking Standards Report. IBI Group. March 2010.

Table 7: Vaughan Parking Study – Recommended Parking Rates (Multi Family Dwelling)

POLICY AREA	RESIDENT PARKING RATES (PER UNIT)			VISITOR PARKING RATES	RANGE
	1 Bedroom	2 Bedroom	3+ Bedroom		
Rest of City (base rate)	0.90	1.10	1.20	0.20	1.10 – 1.40
High Order Transit Hubs	0.70	0.90	1.00	0.15	0.85 – 1.15
Local Centres	0.80	0.95	1.10	0.20	1.00 – 1.30
Primary Centres/ Primary Intensification Areas	0.85	1.00	1.15	0.20	1.05 – 1.35

As indicated, the recommended parking rates ranging from 0.70 to 1.20 spaces per unit for resident parking and 0.15 to 0.20 spaces per unit for visitor parking, depending on location of site and size of dwelling unit.

3.5 PARKING REDUCTIONS – RESIDENTIAL LAND-USE

The *Review of Parking Standards contained within the City of Vaughan's Comprehensive Zoning By-Law: Draft Parking Standards Report* notes that reducing the minimum parking requirement for residential uses is typically low risk, recognizing that parking availability is usually a key decision for a prospective purchaser. Developers are not inclined to reduce parking supply to the extent that it compromises the marketability of the development. It is further noted that providing surplus parking increases the cost of a development. Thus, minimizing the parking requirement to the extent possible reduces development costs, in turn making dwelling units more affordable.

3.6 ACTIVE TRANSPORTATION IMPROVEMENTS

As per the *City of Barrie Multi-modal Active Transportation Master Plan*[2], Edgehill Drive and Anne Street have been identified for active transportation improvements by 2031. Bicycle lanes are proposed for Edgehill Drive between Miller Drive and Anne Street, whereas buffered bicycle lanes are proposed for Anne Street between Dunlop Street and Edgehill Drive. In general, active transportation initiatives seek to improve accessibility for a wider range of road users while reducing reliance on the private automobile.

[2] City of Barrie Multi-Modal Active Transportation Master Plan. Genivar. January 2014.

3.7 SUMMARY

The key findings of the parking review are summarized below.

- Based on the City of Barrie parking requirements and the proposed development plan, the site is required to supply 95 parking spaces, or 1.50 spaces per unit.
- The proposed parking supply for the site is 79 spaces, or 1.25 spaces per unit.
- The proposed parking supply results in a shortfall of 16 spaces as compared to the City's requirements.
- Parking rates adopted by other local municipalities range from 0.8 to 1.75 spaces per unit (inclusive of visitor parking).
- ITE Parking Generation data for the *multifamily housing - mid-rise* land-use indicates an average parking supply of 1.70 spaces per unit, and peak parking demand rates ranging from 0.75 to 2.03 spaces per unit, with an average peak parking demand of 1.31 spaces per unit.
- As per the ITE fitted curve equation for peak parking demand (weekdays, 10:00PM to 5:00AM) for the *multifamily housing - mid-rise* land-use, the peak parking demand for the subject 63 unit development is estimated at 76 parked vehicles (or 1.21 spaces per unit).
- Parking surveys conducted at proxy sites in January and March 2019 indicate peak parking demands in the order of 1.04 to 1.23 spaces per unit.
- For the Southwoods proxy site, the peak parking demand for the 32 parking spaces dedicated to the stacked townhouse units was observed at 0.88 spaces per unit; whereas the peak parking demand for the rental and visitor spaces serving the entire development was observed at 0.14 and 0.17 spaces per unit, respectively - thus indicating an overall peak parking demand rate of 1.19 spaces per unit for the stacked townhouse units.
- Parking demand can vary by site based on site location and local characteristics – thus parking requirements should take site specific characteristics into consideration, particularly where such characteristics indicate that parking demand will be greater or less than the local by-law requirements.
- Reduced parking minimums for residential uses are typically low risk, recognizing that parking availability is usually a priority for purchasers (i.e. prospective buyers will not purchase units in developments that cannot meet their vehicle parking needs) – thus, developments with reduced parking will attract buyers with one or no vehicles, rather than multi-vehicle owners.
- Planned active transportation improvements to the study area will improve connectivity of the site while reducing reliance on the private automobile.

4 Parking Needs Assessment

As previously noted, the site plan indicates a parking supply of 79 spaces, representing a shortfall of 16 spaces when considering the City of Barrie's parking requirements for the proposed uses (95 spaces). Based on the parking review detailed in Chapter 3, the following justification is provided in support of the proposed parking supply for the proposed townhouse development.

4.1 PARKING JUSTIFICATION

4.1.1 Proxy Site Parking Surveys

The proposed parking supply is supported in part by the results of the parking surveys conducted at the 235-245 Ferndale Drive and Cheltenham proxy sites, where the observed peak parking demand was in the order of 1.04 to 1.23 spaces per unit.

With respect to the Southwoods development, the observed peak parking demand was 1.11 spaces per unit; however, recognizing that the Southwoods development has a combination of street townhouse units and stacked townhouse units that share the available visitor and rental parking spaces, additional analysis of the parking survey data was conducted whereby the parking demand by parking space type was observed. The parking demand breakdown by parking space type indicates a peak demand of 0.88 spaces per unit for those spaces dedicated to the stacked townhouses, whereas for the rental and visitor parking spaces, peak demands of 0.14 and 0.17 spaces per unit (respectively) were observed. The observed demand across the noted parking spaces ultimately indicates a peak parking demand rate of 1.19 spaces per unit for the stacked townhouse units.

Based on the results of the proxy site parking surveys, the proposed parking supply (1.25 spaces per unit) is considered reasonable.

4.1.2 Parking Standards in Local Municipalities

A review of parking standards adopted by surrounding municipalities reveals a fairly consistent approach with respect to parking rates for the townhouse use, with 1.5 spaces per unit as the most common requirement. However, the Cities of Guelph (1.2 spaces per unit), Owen Sound (1.25 spaces per unit), Kitchener (0.8 to 1.1) and Peterborough (1.0 to 1.75 spaces per unit) have adopted rates consistent with those proposed. While the City of Barrie requires a parking supply of 1.5 spaces per unit, it is noted that the City has reduced parking standards to 1.0 space per unit for residential developments located within designated intensification areas. While the subject property is not located within such an area, the proposed development does reflect significant intensification given the proposed increase in density (i.e. 4 residential lots converted to 63 townhouse units). In consideration of the existing development surrounding the site

(medium to high density residential), the area already consists of the characteristics typical of an intensification area. It is further noted that the site is located in close proximity to Dunlop Street which is a primary intensification corridor, and is well served by transit, with existing service on Edgehill Drive, Anne Street North, Cedar Pointe Drive and Dunlop Street. The site is also within 750 metres of the Wellington Plaza, which includes Shoppers Drug Mart, No Frills and several other retail/commercial establishments. In this respect, residents will not be dependent on the private automobile for access to employment, services and other amenities. Thus, it is not unreasonable to expect that a reduced parking rate could be supported for the site.

4.1.3 City of Vaughan

The City of Vaughan parking review study recommended parking rates ranging from 0.85 to 1.40 spaces per unit (inclusive of 0.15 to 0.20 spaces per unit for visitor parking), depending on location of site and size of dwelling unit. Assuming that the proposed development will consist of 2 and 3 bedroom units, and that the site location is reflective of a Local Centre or Primary Intensification Area, the resulting parking rates (as per the Vaughan Parking Study) would be in the order of 1.15 to 1.30 spaces per unit (Local Centre) or 1.20 to 1.35 spaces per unit (Primary Intensification Area), inclusive of 0.20 spaces per unit for visitor parking. These rates are comparable to the proposed parking rate of 1.25 spaces per unit.

4.1.4 ITE Parking Rates

The proposed parking supply rate for the site (1.25 spaces per unit) is within the range of peak parking demand rates noted in the ITE Parking Generation manual for similar land uses (0.75 to 2.03 spaces per unit). Furthermore, in considering the peak parking demand fitted curve equation for the *multifamily housing - mid-rise* land-use, the estimated peak parking demand for the subject site is 76 vehicles, or 1.21 spaces per unit. In this respect, the proposed parking rate for the site is supported by the empirical ITE parking generation data and not otherwise considered artificially low or unreasonable.

4.1.5 Active Transportation Improvements & Transit Service

The proposed bicycle lanes for Edgehill Drive and Anne Street will improve connectivity of the site for a wider range of road users and reduce reliance on the private automobile - thus providing support to the proposed parking rate reduction. In consideration of future bicycle lanes, additional supportive measures on site, such as bicycle parking, could be introduced to further support the proposed parking rate.

The site is also located such that ready access to Barrie Transit will be provided, to offer alternative modes of travel to the automobile (and hence reducing reliance on the automobile).

4.2 RECOMMENDATION

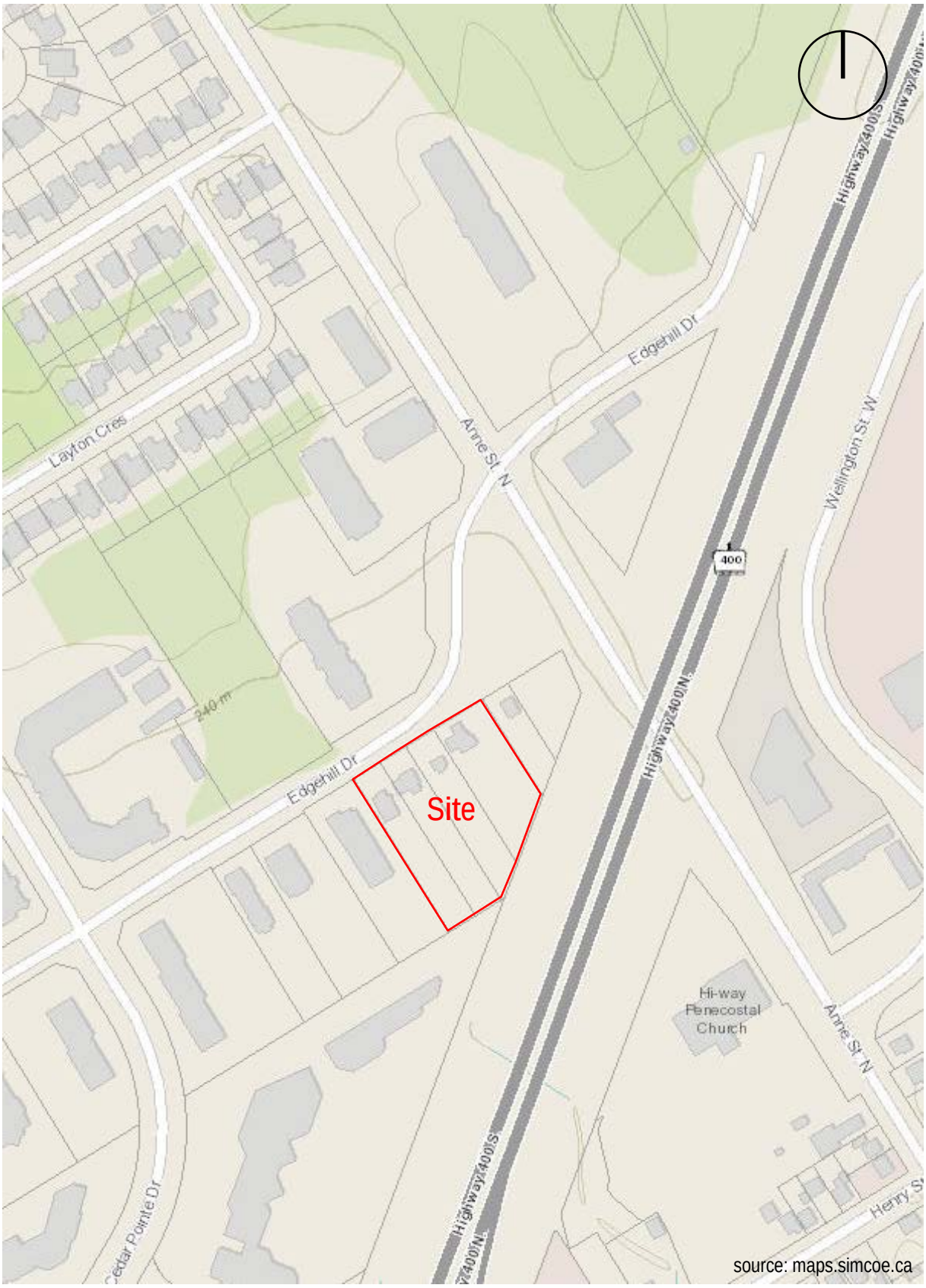
In consideration of the above, the proposed parking supply of 79 spaces, or 1.25 spaces per unit, is considered reasonable. Provision of on-site bicycle parking could also be considered as an additional measure to support the parking reduction.

5 Summary

This parking justification study has reviewed the proposed parking supply for the proposed 63-unit townhouse development to be located at 105-111 Edgehill Drive in the City of Barrie. The proposed parking supply for the site is 79 spaces, or 1.25 spaces per unit. The existing parking standards for the City of Barrie (1.5 spaces per unit) require a parking supply of 95 spaces, translating to a shortfall of 16 spaces. The study has reviewed the proposed parking supply in consideration of parking survey data conducted at proxy sites, parking standards adopted by adjacent municipalities, published ITE parking generation data and the findings of other parking study research.

While the proposed parking supply does not satisfy the minimum parking requirements as per the City's zoning by-law, it is ultimately supported by the parking demand survey data collected from the proxy sites. The proposed parking rate is not unreasonable when considering parking supply standards in adjacent municipalities, parking demand rates for similar uses as published by ITE and reductions afforded to other developments within the City of Barrie.

In consideration of this review, the proposed parking supply for the 105-111 Edgehill Drive development is considered reasonable.

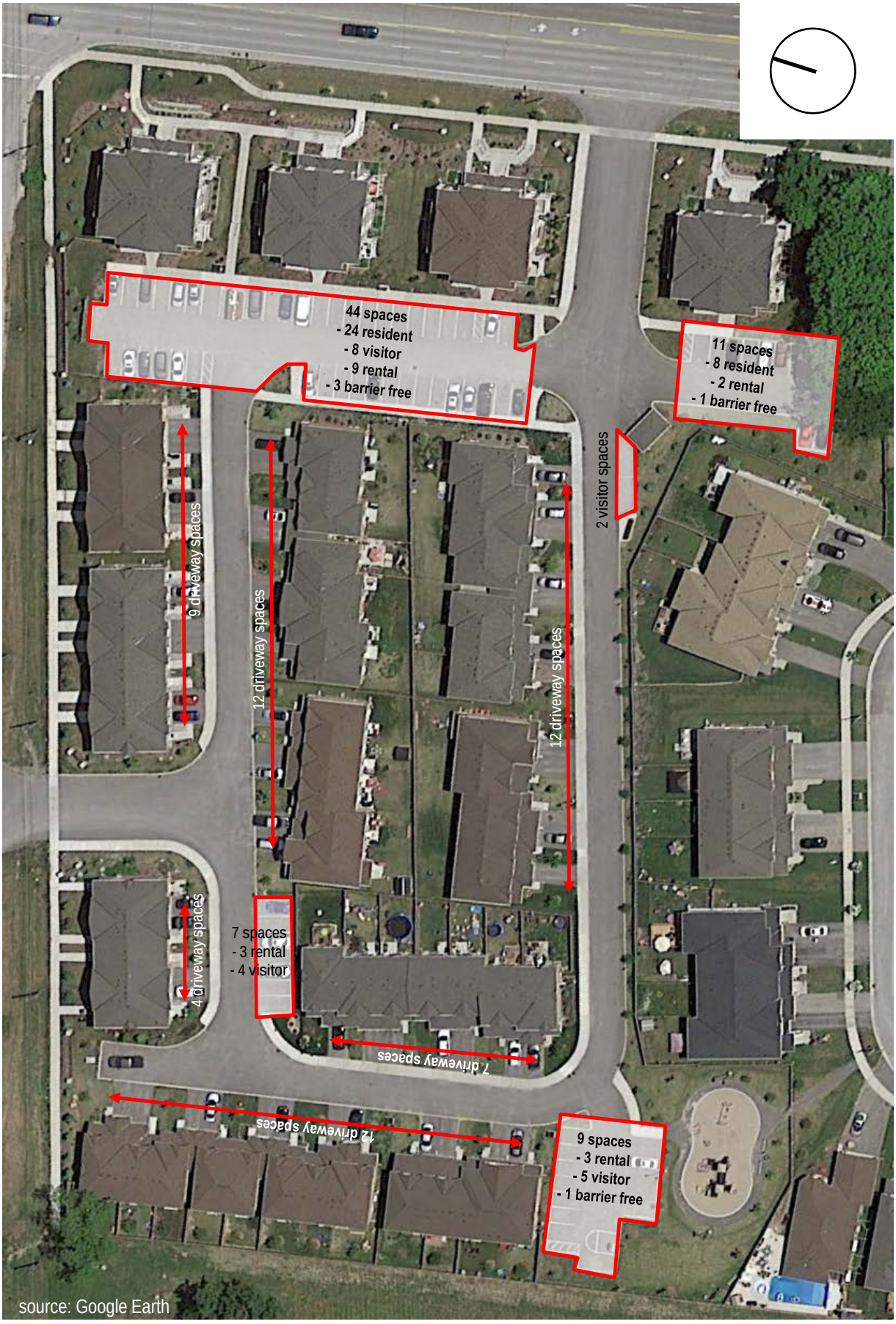


PROJECT NAME

Figure 1: Site Location

PROJECT NAME

Figure 2: Site Plan



PROJECT NAME

Figure 3: Southwoods Proxy Site – Parking Layout