

961 Big Bay Limited

City of Barrie

Draft Plan of Subdivision

FUNCTIONAL DESIGN REVIEW

17092/200

May 2017



LEA Consulting Ltd.

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May 8, 2017

Our Ref.: 17092/200

Alky Poulias
961 Big Bay Limited
96 McIntyre Court,
Newmarket, ON
L3Y 8B9

Dear Mr. Poulias:

**Re: Functional Design Review
Draft Plan of Subdivisions, 961 Big Bay Limited
City of Barrie**

LEA Consulting Ltd. is pleased to present the findings of our Functional Design Review for the proposed draft plan of subdivisions for the 961 Big Bay Limited Lands located in the City of Barrie.

Should you have any question regarding this Functional Design Review, please do not hesitate to contact the undersigned.

Yours very truly,

LEA Consulting Ltd.

Kenneth Chan, P.Eng., PTOE
Head of Transportation Engineering

Jillian Britto, B.A.Sc., EIT
Transportation EIT

:jb/lb

Encl.: Functional Design Review – 961 Big Bay Limited

LEAdership in engineering & planning solutions

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1 INTRODUCTION

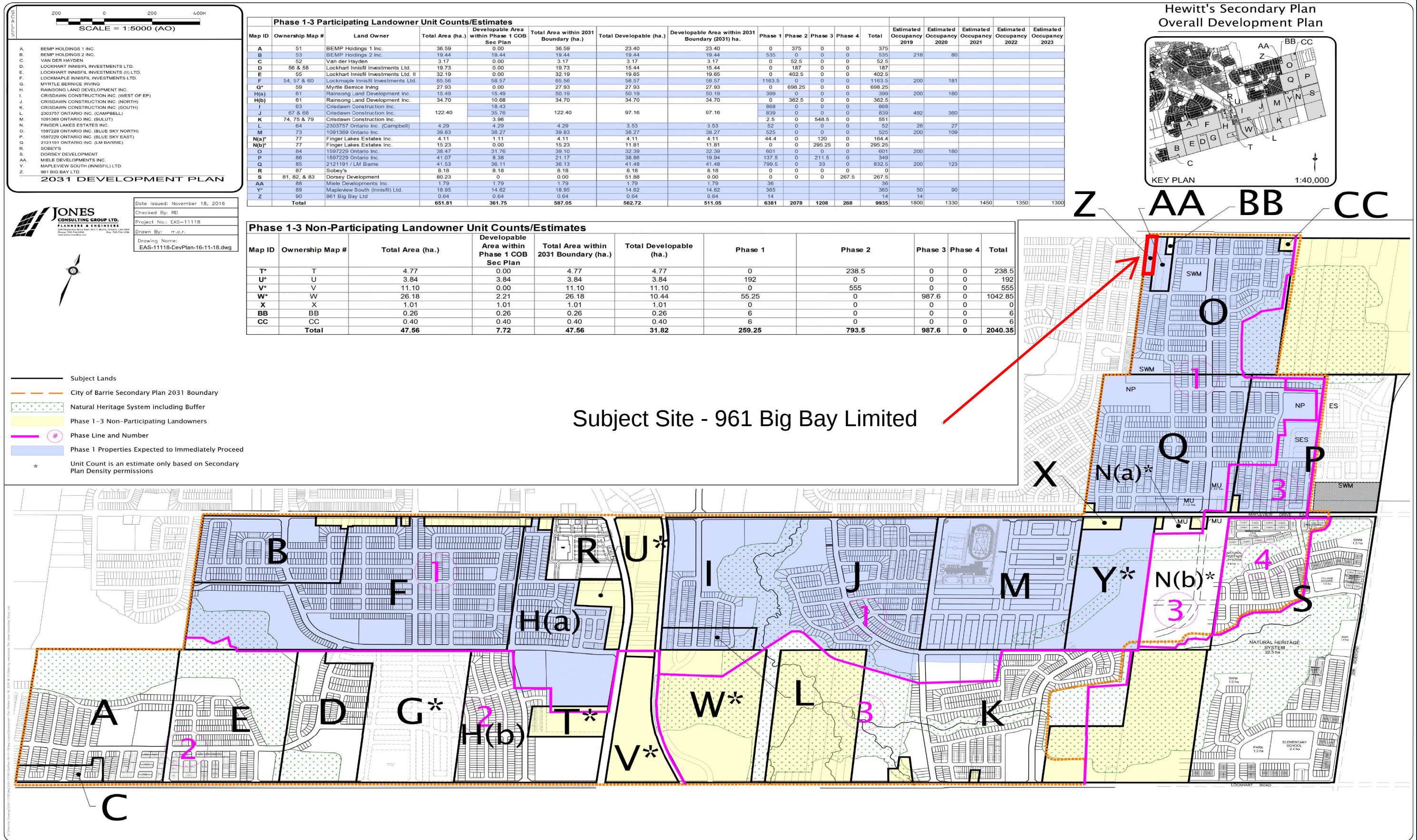
LEA Consulting Ltd. (LEA) was retained by 961 Big Bay Limited to conduct a Functional Design Review for the proposed lands (herein referred to as the “Big Bay Lands”) located within the Hewitt Secondary Plan Area in the City of Barrie (herein referred to as the “City”). The Big Bay Lands, which are currently occupied by a single-detached unit, are located on the south side of Big Bay Point Road between Yonge Street and 20th Sideroad, as illustrated in **Figure 1-1**. The lands are bounded by Big Bay Point Road to the north, Land Parcel ‘O’ to the south, residential development to the west and Land Parcel ‘AA’ to the east.



Figure 1-1: Site Context

The proposal for the lands consists of a residential development with 16 single-detached units, with the only access provided through Street ‘A’, which is owned by the neighbouring property (Miele Developments Inc. – Land Parcel ‘AA’). Discussions between both landowners have resulted in an agreement that Miele Developments will build Street ‘A’ prior to the development of the Big Bay Lands.

Figure 1-2 illustrates the Big Bay Lands with respect to the Hewitt 2031 Development Plan.



LEA has completed a Master Transportation Study (herein referred to as the “Hewitt Study”) for the entire Hewitt development, which included the Big Bay Lands. The Hewitt Study included the evaluation of the Hewitt development for the following two horizon years:

- Interim horizon (2020), which analysed the traffic impacts of the partial development of the Hewitt Lands prior to the opening of the Harvie Road / Big Bay Point overpass at Highway 400; and
- Ultimate horizon (2031), which analysed the traffic impacts associated with the full build-out of the Hewitt Lands.

Analysis of the Ultimate horizon within the Hewitt Study accounted for all City-proposed roadway improvement projects and provided the recommended intersection improvements required to accommodate the full build-out of the Hewitt Lands.

This Functional Design Review report is supplemental to the Hewitt Study with a focus on the Big Bay development, which is expected to be developed within Phase 1 of the entire Hewitt development. The completion of Phase 1 of the Hewitt development falls in-between the two analyzed horizons, 2020 and 2031. Therefore, the results and recommendations presented in this report correspond to that proposed for the Ultimate horizon in the Hewitt Study in order to maintain consistency and develop the lands for the full build-out of the Hewitt Lands.

This report will focus on the following objectives:

- Provide a description of the existing conditions within the vicinity of the Big Bay Lands; and
- Determine site traffic generated by the proposed development, which is expected to be developed within Phase 1 of the entire Hewitt development.

1.1 PROPOSED DEVELOPMENT

The proposal for the lands is to develop the area into a residential development with single-detached units, with the only access provided through Street ‘A’. Street ‘A’ is owned by the neighbouring property, and will need to be built prior to the development of the Big Bay Lands.

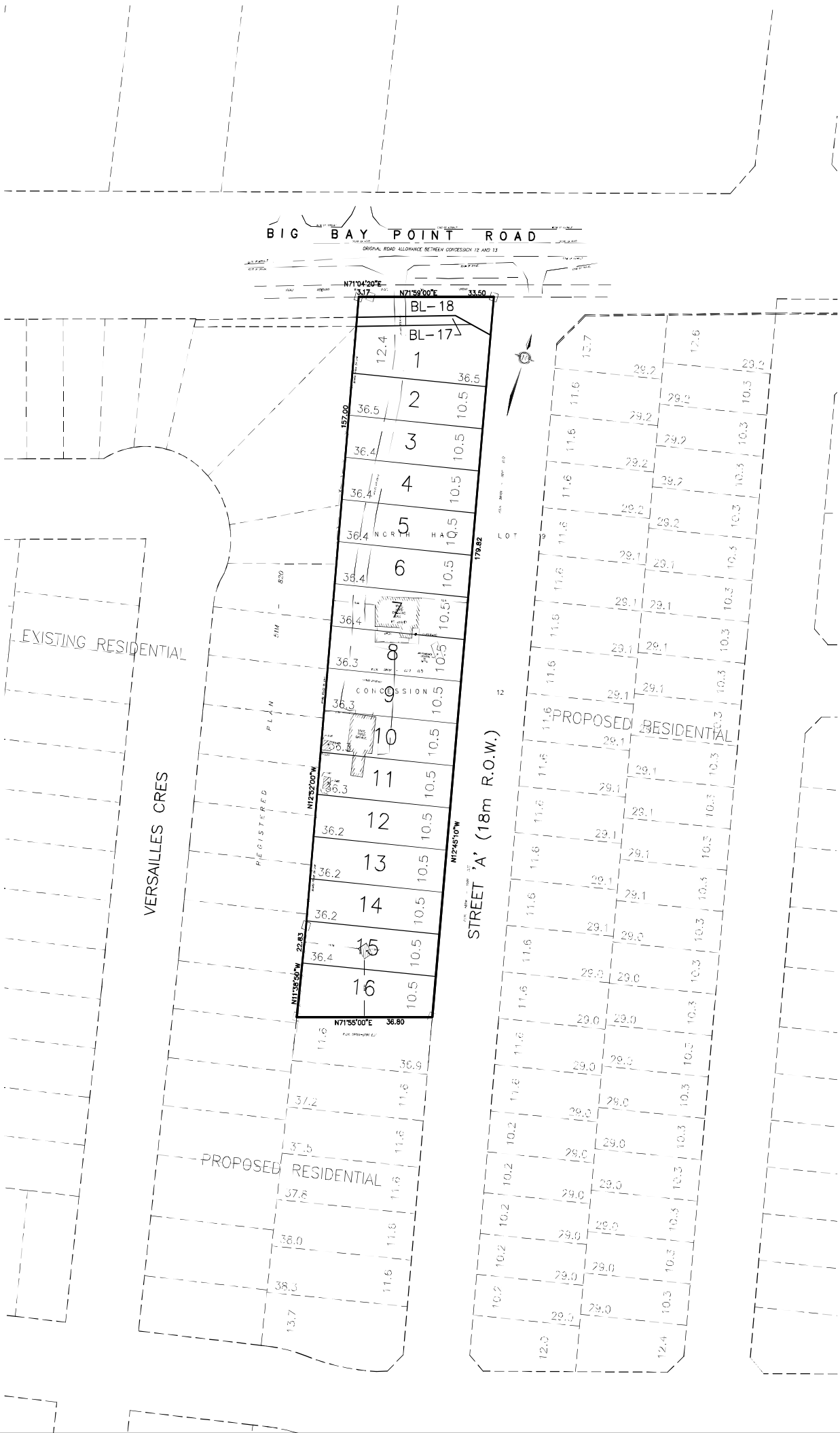
A summary of the site statistics for the Big Bay Lands, which is to be developed within Phase 1 of the entire Hewitt development, is provided in **Table 1-1**.

Land Use	Phase 1
Single-Detached Units	16
Total Residential Units	16

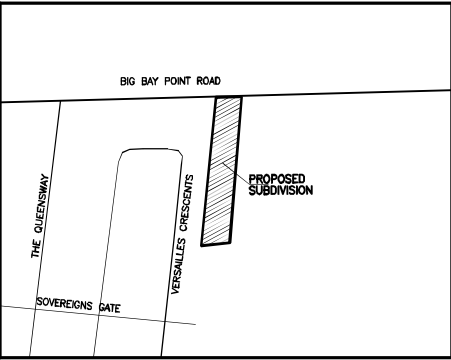
Table 1-1: 961 Big Bay Limited Development Site Statistics

The proposed draft plan for the Big Bay Lands is illustrated in **Figure 1-3**.

DRAFT PLAN OF SUBDIVISION
PART OF NORTH HALF LOT 19, CONCESSION 12
(GEOGRAPHIC TOWNSHIP OF INNISFIL
CITY OF BARRIE
COUNTY OF SIMCOE



DRAFT PLAN T-



KEY PLAN N.T.S.

SECTION 51, PLANNING ACT,
ADDITIONAL INFORMATION

- A. AS SHOWN ON DRAFT PLAN
- B. AS SHOWN ON DRAFT PLAN
- C. AS SHOWN ON DRAFT PLAN
- D. SEE SCHEDULE OF LAND USE
- E. AS SHOWN ON DRAFT PLAN
- F. AS SHOWN ON DRAFT PLAN
- G. AS SHOWN ON DRAFT PLAN
- H. MUNICIPAL PIPED WATER AVAILABLE AT TIME OF DEVELOPMENT
- I. CLAY-LOAM
- J. AS SHOWN ON DRAFT PLAN
- K. SANITARY AND STORM SEWERS, GARBAGE COLLECTION, FIRE PROTECTION
- L. AS SHOWN ON DRAFT PLAN

SURVEYOR’S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AS SHOWN ON THIS PLAN, AND THEIR RELATIONSHIP TO THE ADJACENT LAND ARE ACCURATELY AND CORRECTLY SHOWN.

DATE _____, 2017
RUDY MAK OLS

OWNER’S CERTIFICATE

I AUTHORIZE KLM PLANNING PARTNERS INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF BARRIE FOR APPROVAL.

OWNER
ABC 222222 LTD
c/o
XXX
XXX
XXX
XXX
A.S.O.

SCHEDULE OF LAND USE

TOTAL AREA OF LAND TO BE SUBDIVDED = 0.653±Ha. (1.613±Acs)

LOTS FOR DETACHED DWELLINGS	BLOCKS	LOTS	UNITS	±Ha.	±Acs.
LOTS 1-16		16	16	0.626	1.547
MIN. LOT FRONTAGE=10.0m. MIN. LOT AREA=160.0sq.m.					
SUBTOTAL		16	16	0.626	1.547
BLOCK 17 - BUFFER	1			0.007	0.017
BLOCK 18 - ROAD WIDENING	1			0.020	0.049
TOTAL	2	16	16	0.653	1.613

NOTE — ELEVATIONS RELATED TO CANADIAN GEODETIC DATUM



PROJECT No. P-2803
SCALE 1:500
(2803DES1) X-REF: (2803MAS & 2803TOPO)
DWG. No. - 17:1
64 JARDIN DRIVE - UNIT 1B, CONCORD ONTARIO L4K 3P3
TEL: (905)669-4055 FAX: (905)669-0087 design@klmplanning.com
Planning • Design • Development

APR. 5, 2017

Figure 1-3
Draft Plan of Subdivision
961 Big Bay Limited - Functional Design Review



*Not to scale

2 EXISTING CONDITIONS

The following section describes the existing major roadways and transit services within the vicinity of the Big Bay Lands.

2.1 ROAD NETWORK

The major roadways within the vicinity of the site are described below, with lane configurations illustrated in **Figure 2-1**.

Big Bay Point Road – an east-west major arterial roadway under the jurisdiction of the City of Barrie between Fairview Road (located slightly east of Highway 400) and 20th Sideroad. Big Bay Point Road begins east of Highway 400; west of Highway 400 it becomes Harvie Road. The two roadways are currently not connected to each other. Big Bay Point Road currently operates with a two-lane cross-section from Fairview Road to Huronia Road, a five-lane cross-section between Huronia Road and Prince William Way, and a two-lane cross-section east of Prince William Way to 20th Sideroad. Big Bay Point Road has a posted speed limit of 50km/h within the study area.

Yonge Street – a north-south major arterial roadway under the jurisdiction of the City between Garden Drive and 10th Line/Victoria Street. Yonge Street currently operates with a five-lane cross-section between Garden Drive and Mapleview Drive, and a two-lane cross-section south of Mapleview Drive. Yonge Street has a posted speed limit of 50 km/h north of Mapleview Drive and 60 km/h south of Mapleview Drive.

20th Sideroad – a north-south arterial roadway under the City’s jurisdiction from Big Bay Point Road to Lockhart Road, where it then falls under the County’s jurisdiction. 20th Sideroad operates with a two-lane cross-section with a posted speed limit of 80km/h.

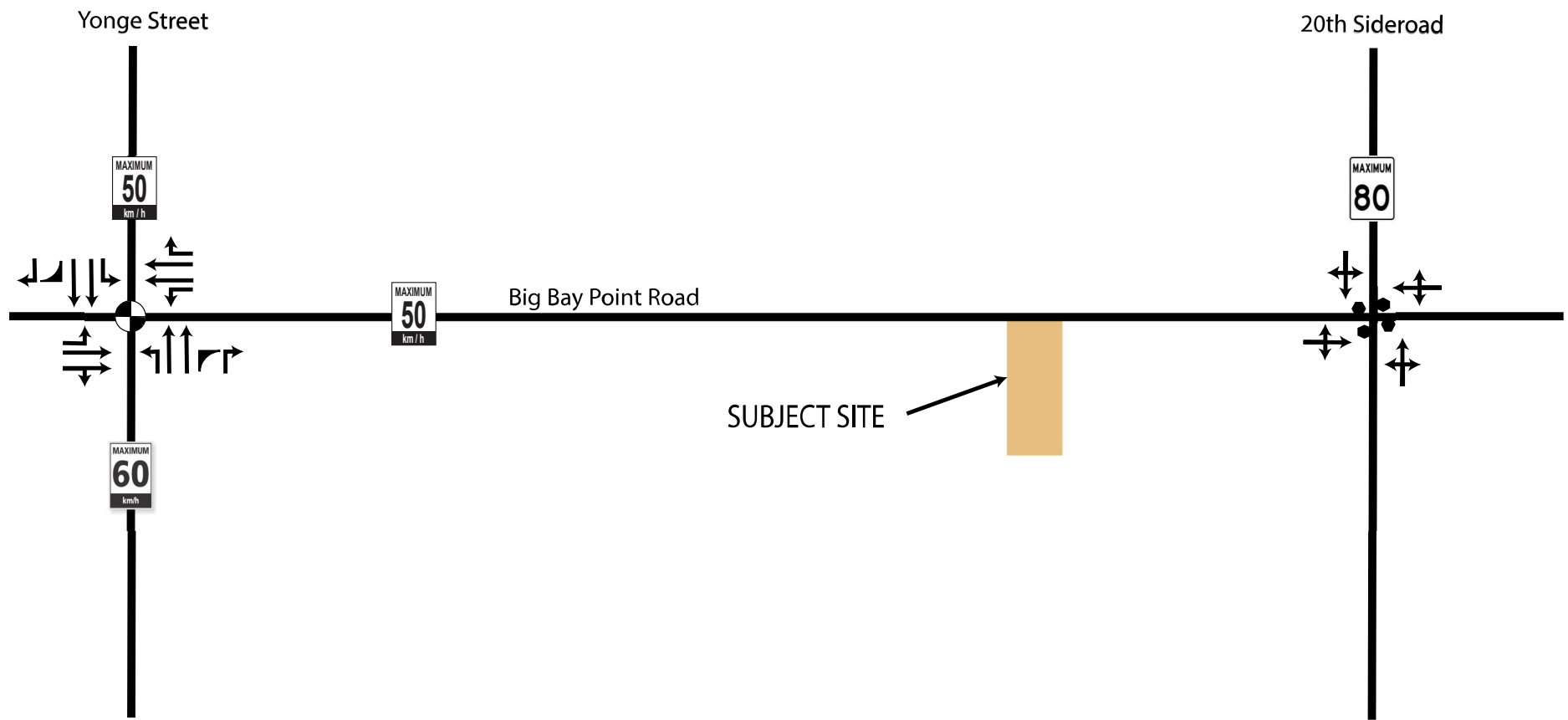


Figure 2-1
Existing Road Network and Lane Configurations
961 Big Bay Limited - Functional Design Review



2.2 TRANSIT NETWORK

The Big Bay Lands are serviced by bus routes operated by Barrie Transit and are approximately 4,500 meters northeast of the Barrie South GO Station. The existing transit network nearest to the Big Bay Lands is outlined below and illustrated in **Figure 2-2**.

Barrie Transit

8A RVH/Yonge (Northbound) / 8B Crosstown/Essa (Southbound) bus routes operate in a circle encompassing the area of Livingstone Street West in the north, Essa Road in the west, Mapleview Drive in the south and Yonge Street in the east. The major stops along this route include Georgian College, Georgian Mall, Barrie Fairgrounds Park Place and the Barrie South GO Station. The 8A and 8B bus routes operate at 30 minute frequencies during weekday morning and afternoon peak travel periods.

3A Georgian (Northbound) / 3B Painswick (Southbound) bus routes operate between Georgian College, the Royal Victoria Hospital and Barrie South GO Station, generally in a north-south direction. The major stops along this route include Park Place, Allendale Recreation Centre, the Downtown Barrie Bus Terminal and Painswick Library. The 3A and 3B bus routes operate at 30 minute frequencies during weekday morning and afternoon peak travel periods.

4A East Bayfield (Northbound) / 4B South GO (Southbound) bus routes operate between the Georgian Mall and Barrie South GO Station, generally in a north-south direction. The major stops along this route include Painswick Library, Allendale Waterfront GO Station, the Downtown Barrie Bus Terminal and Bayfield Mall. The 4A and 4B bus routes operate at 35 minute frequencies during weekday morning and afternoon peak travel periods.

GO Transit

As mentioned above, the Big Bay Lands are located approximately 4,500 meters northeast of the Barrie South GO Station. This station is serviced by the following GO buses and trains:

Bus Route 68 operates from Barrie to Newmarket with a connecting service at Newmarket, Route 65, travelling to Union Station. This route operates with 30 minute headways travelling southbound and hourly headways travelling northbound during the morning peak period, and the opposite frequencies during the afternoon peak period. This bus route also operates during the weekends with hourly frequencies.

The **Barrie Train Line** operates between Union Station in Toronto to Barrie South and Allendale Waterfront GO Stations in Barrie. There are currently five train departures in the morning travelling towards Union Station and seven train departures travelling towards Barrie during afternoon peak period. All trains services operate with approximately 30 minute headways. This route operates during the weekends with three southbound trains departing in the morning and three northbound trains arriving in the night on both days.



Figure 2-2: Existing Transit Services

3 SITE TRAFFIC GENERATION AND DISTRIBUTION

The proposal for the Big Bay Lands is to develop the area into a residential development with 16 single-detached units.

Trip generation for the Big Bay development was based on the trip rates obtained from a proxy site survey of the residential development located along Prince William Way between Mapleview Drive and Big Bay Point Road, which is illustrated in **Figure 3-1**. The trip generation for the development is summarized in **Table 3-1**.

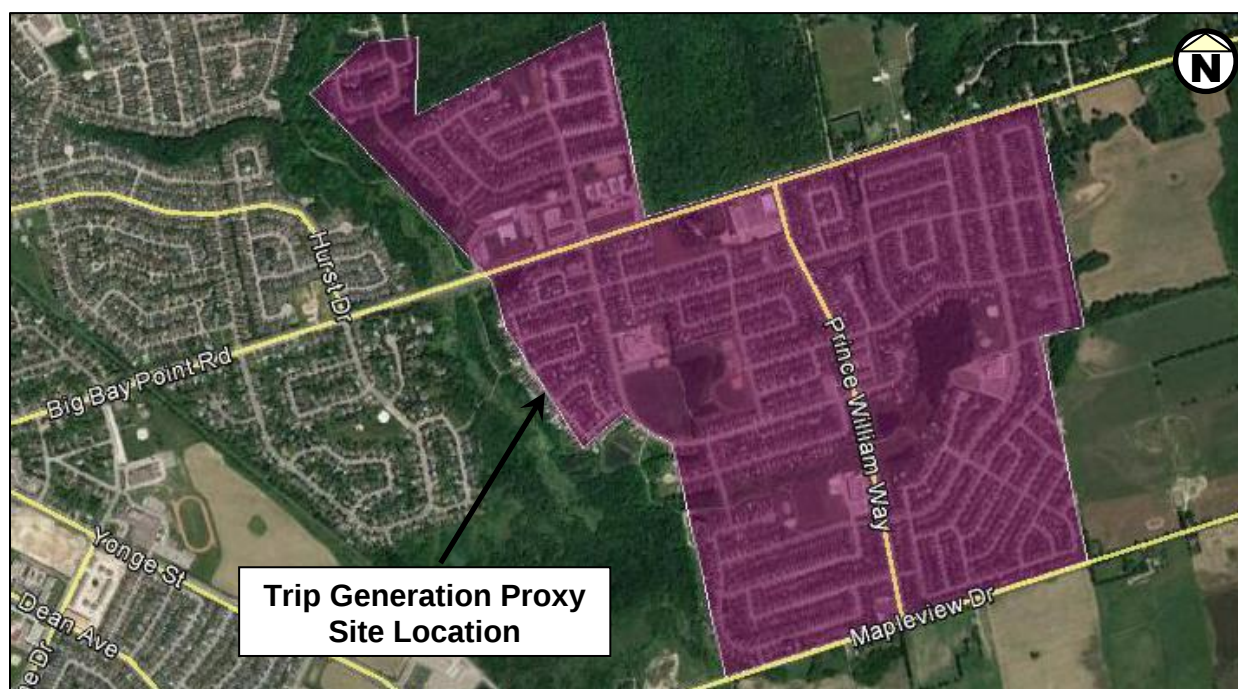


Figure 3-1: Trip Generation Proxy Site Survey Location

Land Use		AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Residential (16 units)	Proxy Site Trip Rate	0.14	0.34	0.48	0.41	0.25	0.66
	Big Bay Lands Site Trips	2	5	7	7	4	11

Table 3-1: Trip Generation Summary – 961 Big Bay Limited Site Traffic

The proposed development for the Big Bay Lands is expected to generate seven two-way trips (two in, five out) in the AM peak hour and 11 two-way trips (seven in, four out) in the PM peak hour by the end of Phase 1 of the entire Hewitt development.

It should be noted the above-mentioned site traffic is only a component of the trips accounted for in the analysis of the Ultimate horizon within the Hewitt Study.

The City's macroscopic EMME travel demand forecast model was utilized for the distribution of the site generated trips. A detailed discussion of the trip generation and distribution methodologies is included in the Hewitt Master Transportation Study.

4 CONCLUSION

The Hewitt Master Transportation Study evaluated the external roadway network for an interim horizon (2020) prior to the opening of the Harvie Road / Big Bay Point Road Highway 400 overpass and an ultimate horizon (2031) corresponding with the full build-out of the Hewitt development. The analysis included the following components for each horizon year:

- The mesoscopic level analysis – Aimsun Modeling Software; and
- The microscopic level analysis – Synchro 8.0 Software.

The Aimsun Model was utilized as a large scale review of the entire Hewitt development with respect to the southern portion of Barrie and the northern portion of Innisfil, and as a screening tool to present the areas of constraint for detailed analyses using the Synchro software.

In addition to the detailed analyses for the identified constraint areas, the proposed Hewitt site accesses were also analyzed at the microscopic level to determine the required lane configuration and dimensions of any required turning lanes.

The site traffic associated with the Big Bay Lands has already been taken into consideration for the traffic analysis conducted in the Master Transportation Study.

The Big Bay Lands have no access to any public roadways on their property; the only access provided is via Street ‘A’ on the neighbouring property. As such, we conclude that Street ‘A’ will need to be constructed by the neighbouring property prior to the development of the Big Bay Lands.