# BACKGROUND REPORT

PEFFERLAW SECONDARY PLAN

Town of Georgina

Reinders and Associates (Barrie) Ltd.

Terraprobe Limited

September/92

APPENDIX 'A'

# PEFFERLAW SECONDARY PLAN

# BACKGROUND REPORT

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# PEFFERLAW SECONDARY PLAN

# BACKGROUND REPORT

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

Within the Community area of Pefferlaw, a number of proposals for residential subdivisions have been submitted to the Town for review and comment. These proposals are located throughout the community area and if approved would not encourage an efficient and desirable pattern of growth. The Town recognizes these development pressures and that there is a lack of detailed planning policies to address, in a comprehensive manner, the future development of the community which takes into consideration the inherent physical and environmental constraints of the Pefferlaw area.

To fully understand the inherent physical and environmental constraints, and in order to conform with Region of York policy, a Hydrogeological Investigation was undertaken by the Town to determine the settlement capability of the community area. The Hydrogeological study assessed the ability of the community to support continuing development on private waste disposal systems. The Town was also interested in addressing resident concerns about the quality of the groundwater resources in the community area and determine whether or not a piped water system was necessary to provide a secure source of potable water to the public.

### 1.2 LOCATION AND AREA CONTEXT

The Community Area of Pefferlaw encompasses lands located within the north-east quadrant of the Town of Georgina and is primarily composed of the rural village of Pefferlaw, the seasonal cottage residential area of Port Bolster and the seasonal areas clustered along the Pefferlaw River and the Lake Simcoe shoreline. The study area is 2,540.19 hectares (6,276.72 acres) in size and comprises that area of the

Town of Georgina between the western limit of Lot 18 and Lake Ridge Road in Concessions 4, 5, 6, 7 and part of 8. The boundaries are generally defined as Lake Simcoe to the north, the Township of Brock and Region of Durham to the east, the road between Concessions 3 and 4 to the south and Weir Sideroad to the west.

Generally, the majority of land in the community area is undeveloped and used for rural and agricultural uses with a significant amount of undeveloped land remaining in a natural state situated throughout the community area and directly south in the Pefferlaw Tract. The exceptions to this is a strip of seasonal residential development situated along the Lake Simcoe shoreline and the Pefferlaw river and the built-up area in the historic core of Pefferlaw. As in the community area there are a wide range of land uses found in the surrounding area.

## 1.3 PURPOSE

This Background Report along with the Hydrogeological Investigation were prepared as a preliminary phase of the creation of a Secondary Plan document for the Community Area of Pefferlaw in order to provide the necessary background data for policy review and formulation.

This report examines the physical characteristics, natural environment, community profile, land use, servicing, proposed development, and policy issues pertaining to the Community Area of Pefferlaw. The background information in this report provides an analysis and evaluation of the above noted factors and provides a basis for evaluating potential development. This report also contains recommendations regarding the planning and development of the area and proposes a future land use concept for the Pefferlaw Community and Secondary Plan area.

## 2.0 INVENTORY OF EXISTING CONDITIONS

### 2.1 PHYSICAL ENVIRONMENT

The physical environment of the community area was examined in order that an overview of the landscape and its inherent characteristics could be obtained. The identification of soils, drainage, natural resources, physiography, flood plain and regulatory fill areas, environmentally significant areas, etc., provide a general description of the landscape. It is recognized that this generalized description does not accurately depict all lands and that the characteristics of individual sites may vary from the generalized description.

#### 2.1.1 Physical Characteristics

The predominant physical feature of the study area is the Pefferlaw river which runs north into Lake Simcoe over the physiographic region known as the Simcoe lowlands. The community area can be described as flat and low lying with the difference in elevation between the northerly and southerly portions of the community area being approximately 20 metres. The community area is without steep slopes except for a few exceptions along the banks of the Pefferlaw Brook.

The underlying bedrock of the community area is comprised of limestone of the Trenton-Black River Group. The bedrock was formed during the Paleozoic Era, Ordovician Period approximately 425 to 500 million years ago. The area was inundated by Lake Algonquin which left overburden materials of a depth of 9 -15 metres consisting of gravel and sand lenses as well as clay and clay tills. A gravel spillway underlies the surface in the westerly portion of the community area and runs northward. Surficial sand soils are generally more predominant in the south half of the study area and the watertable is shallow, generally being located within 1.5 metres of the ground surface.

The Hydrogeological Investigation identified an overburden and bedrock aquifer. The overburden aquifer is located directly above the bedrock surface at some

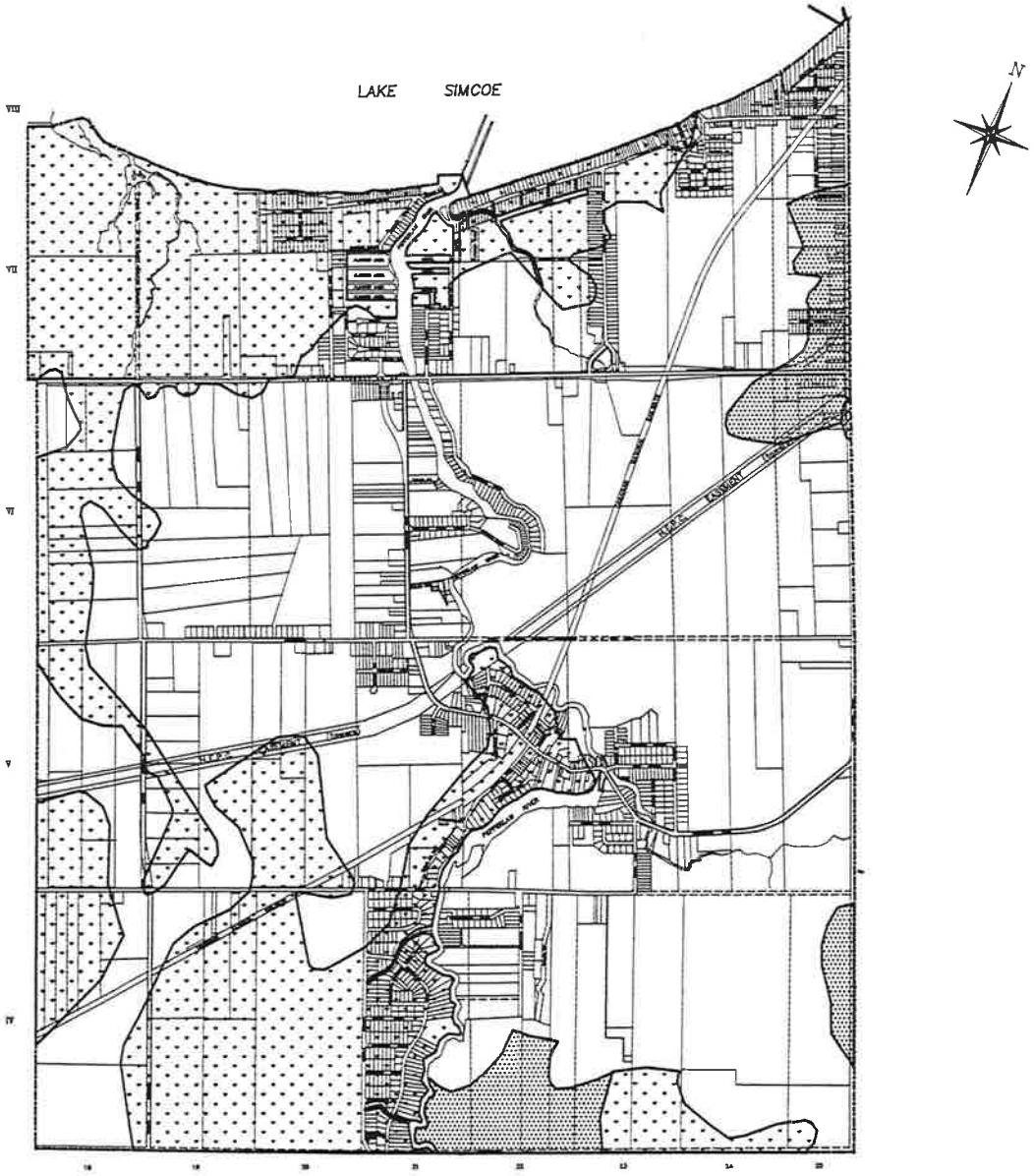
locations throughout the study area. The majority of existing wells in the area draw from the bedrock aquifer. Shallow groundwater flow appears to follow the surface topography with a general northward flow direction towards Lake Simcoe and locally towards the Pefferlaw River. The bedrock aquifer also indicates flow towards the north.

### 2.1.2 Soils & Capability for Agriculture

Human activities and land uses in a large part result from the inter-relationships between the drainage characteristics of an area, natural vegetation and the composition of the underlying strata and material of the earth itself. The characteristics and physical properties of soils determine their ability to sustain different types of usage and to assimilate wastes. A clear understanding of the soil resource of an area can therefore assist in avoiding poorly planned development which may cause groundwater contamination and pollution and the unnecessary clearance of natural vegetation for unsuitable and unsustainable purposes.

In an effort to determine shallow soil and groundwater conditions throughout the community area, 40 auger holes were completed. Generally the auger holes indicated that there is a thin veneer of sand overlying silty sand to fine grained silt and clay soils. In some areas the sand veneer was not encountered and peat and organic soils were present. The area where deeper sand deposits were situated generally covers the southern half of the Community area of Pefferlaw. Figure 11 presents the information gathered from the auger holes and shows the location and general breakdown of the shallow soil types and groundwater conditions.

The soil groups found in the Pefferlaw area are of the Brunisolic Order, Grey-Brown Podzolic and Brown Forest Group, which is characterized by well and imperfectly drained lacustrine deposits. These groups are associated with alkaline materials and contain lime and generally have developed under deciduous forest cover.




# PEFFERLAW SECONDARY PLAN

## SOIL CAPABILITY FOR AGRICULTURE

TOWN OF GEORGINA

FIGURE 1

## LEGEND

— SECONDARY PLAN BOUNDARY LINE

FIELD CROP SYSTEMS

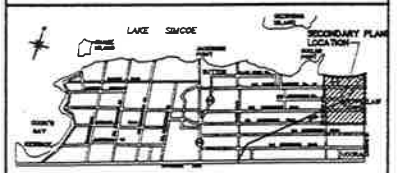
– CLASS 1
– CLASS 2
NO SIGNIFICANT TO MODERATE LIMITATIONS IN USE FOR CROPS.

– CLASS 3
– CLASS 4
MODERATELY SEVERE TO SEVERE LIMITATIONS.

– CLASS 5
– CLASS 6
PERENNIAL FORAGE CROPS.

– CLASS 7
– ORGANIC SOILS
NO CAPABILITY FOR AGRICULTURE.

## KEY MAP

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### 2.1.2 a) Capability for Agriculture

Canada Land Inventory mapping for the Community area identifies the suitability of lands for agriculture and designates land in a given area as being of a certain capability. There are seven classifications of land in this rating system with Class 1 lands having no significant limitations for agricultural production. Classes 1,2,3 & 4 are considered to have the best potential for agriculture, assuming that they are well managed and cropped, and are considered capable of sustained use for cultivated field crops and a wide range of agricultural activities. Soils in Classes 5 & 6 have severe limitations and are suited for only perennial forage crops. Organic soils and those in class 7 have no capability for agriculture.

According to the agricultural capability mapping for the Pefferlaw area, the majority of soils present in the Pefferlaw community area may be basically reduced to two types, Classes 1 & 2 (no significant to moderate limitations) and Class 7 and Organic soils. Class 1 & 2 soils types predominate and account for approximately 66 % of the community area while Organic and Class 7 soil areas are also substantial in extent and account for approximately 29 % of the total community area. The location and extent of these areas are shown clearly on Figure 1. Of the lands identified as being Class 1 & 2, approximately 80 % of these are Class 2 and possess moderate limitations for agricultural use.

Capability limitations identified by the Canada Land Inventory mapping for the Class 1 and 2 soils of the study area include low natural fertility due to lack of available nutrients, high acidity or alkalinity and high levels of calcium carbonate or the presence of toxic compounds. Other limiting factors of the Class 1 and 2 soils of the study area result from a low moisture holding capacity caused by adverse inherent soil characteristics which limit crop growth and excess water due to poor drainage and a high water table. A very limited amount of tile drainage has been installed in the eastern portion of the community area to increase crop yields.

### 2.1.2 b) Soils

The physiographic analysis of the Pefferlaw Area completed by Ian D. Wilson Associates Limited in 1980 identified a number of specific soil types in the community area, most being developed on granular parent material. Generally, the soils were described as sandy with wet sub-soils. The soil texture is undulating to rolling loam formed from coarse and medium textured tills.

In order to facilitate a greater understanding of the soil types in the community area, the following excerpt from the above noted report has been included which gives a detailed description of 12 identified soil types found within the area.

**1. Medium Textured Limestone Till Soils**

a) Good Drainage

Otonabee Sandy Loam (OSL) This soil has developed on high lime parent materials. The soil is slightly to medium alkaline and is well suited for agriculture.

b) Imperfect Drainage

Emily Loam (EL) The surface is sometimes stony and water percolation is moderate, however, runoff is slow. The soil is slightly to medium alkaline. With regard to its suitability for agriculture, this soil's low moisture holding capacity limits crop growth and its concentration of carbonates limit natural fertility. The soil is mainly suited for pasture.

**2. Well Sorted Sandy Outwash Soils**

The following soils have developed on well sorted sandy materials deposited by still or slow moving water, assuming the form of sand bars, outwash plains or beaches. The materials vary in lime content from low to high and are stonefree.

a) Good Drainage

1) Brighton Sandy Loam (Brsl). This soil is formed on coarse sandy outwash material immediately east of the Pefferlaw River. The soil is well drained due to the porosity of the materials aiding rapid percola-

tion. The organic content of the soil is low, resulting in a low holding capacity for moisture, which coupled with its low natural fertility and aridity reduces the production of high yielding cash crops. Heavy applications of commercial fertilizers, however, make it more suitable for cash cropping.

2) Brighton Sandy Loam Over Gravel (Brsl). This soil is similar to Brighton Sandy Loam, except that it is underlain by well sorted gravel and stones which are present in varying amounts. It also has low natural fertility.

3) Tioga Sandy Loam (Tisl). This soil is located immediately west of the fork in the Pefferlaw River and Pefferlaw Brook. The soil is moderately to slightly acid and is stonefree. The soil has good drainage, however, it has a low natural fertility due to a lack of available nutrients and high levels of calcium carbonate. The Canada Land Inventory gave it a Class 3 rating; i.e. moderately severe limitations, that restrict the range of crops.

b) Imperfect Drainage

1) Tecumseth Sandy Loam (Tsl). Water percolates at a fair rate through the soil, however, runoff is slow. The soil produces fair agricultural crops and is a good soil for orchards. It is a bit low in natural phosphate and potash and is susceptible to wind erosion. The installation of tile drains could be beneficial for those cash crops requiring better drainage.

2) Rubicon Sandy Loam (Rsl). This soil type, has slow external drainage and moderate internal drainage. Drainage conditions usually vary within short distances, however, due to numerous small knolls and/or depressions. This soil is low in plant nutrients, therefore lime and heavy applications of general fertilizers are normally required for good crop production.

c) Poor Drainage

Granby Sandy Loam (Gsl). The drainage of this soil is very slow with a high water table causing the development of a high surplus of in organic matter. This soil can only be used for short season crops as it stays wet late in the spring; consequently, forages are a better crop to plant.

**3. Well Sorted Gravelly Outwash Soils**

The well sorted gravelly outwash soils were deposited in slow moving water occurring as outwash plains with calcareous materials.

a) Good Drainage

Sargent Sandy Loam (Sg). This soil was developed in calcareous gravelly materials. Due to its course, open materials, drainage is good. Rapid percolation of the soil allows for early spring planting, however, drought like conditions often prevail in early summer due to its low moisture holding capacity. The soil is not rated good for agriculture by the Canada Land Inventory (Class 6-60%, Class 3-40%) due to a lack of natural fertility and a low moisture holding capacity. Also some of the land is stony.

**4. Lacustrine Clay**

a) Poor Drainage

Simcoe (Sic). This soil is alkaline to slightly alkaline and has poor drainage. The soil is a clay loam and is fairly fertile for agricultural purposes, however, the poor drainage and high water table creates excess water limiting early spring planting and causing troublesome fall harvesting.

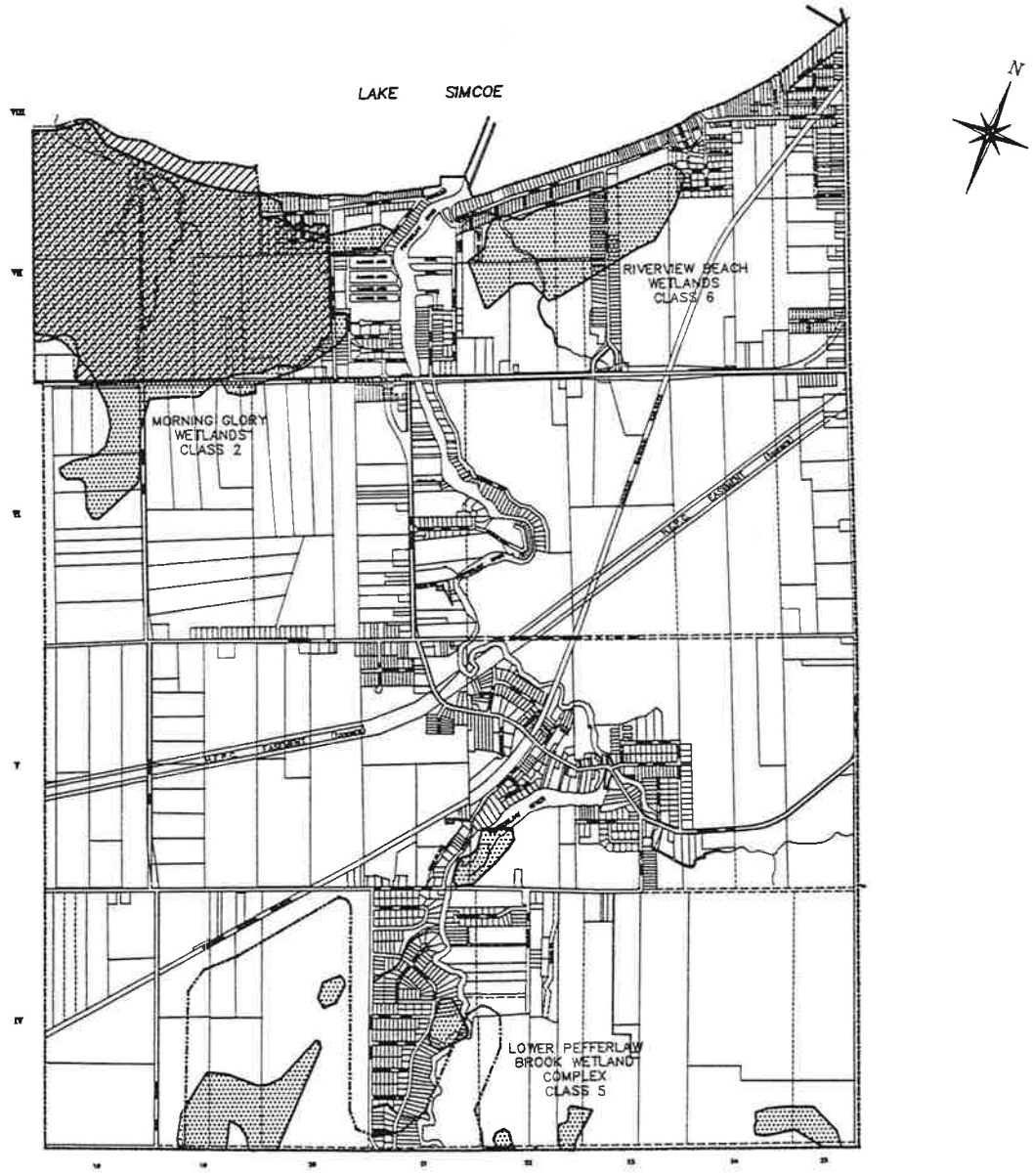
**5. Organic Soils**

a) Very Poor Drainage

Muck (M). These soils are comprised of decomposed organic materials. The drainage is very poor and the soil is usually under water for some of the year. The soil is very high in nitrogen and low to very low in phosphorus and potassium. The soil is suitable for specialized crops where it can be drained.

### 2.1.3 Wetlands and Environmentally Significant Areas

Wetland areas are generally undervalued and in most instances are worth conserving and protecting as they fulfill a number of functions. Wetlands act as natural water reservoirs and in doing so augment the moisture retaining capacities of the soils by maintaining ground water levels as well as reducing flooding in some instances by




# PEFFERLAW SECONDARY PLAN

## WETLANDS AND ENVIRONMENTALLY SIGNIFICANT AREAS

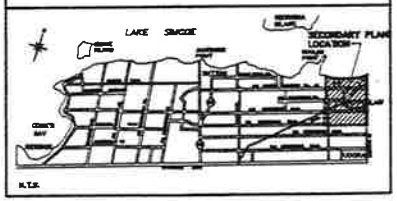
TOWN OF GEORGINA

FIGURE 2

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- WETLANDS
- AREA OF NATURAL AND SCIENTIFIC INTEREST
- ENVIRONMENTALLY SIGNIFICANT AREA

## KEY MAP

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storing peak water flows. In addition to the above, wetlands generally provide habitat for locally significant plants and wildlife.

The community area of Pefferlaw contains an extensive amount of wetlands and environmentally significant areas (E.S.A.). Wetlands account for approximately 12 % of the total Pefferlaw community area. There are three main wetland areas, these being the Morning Glory Swamp Wetlands (rated as a provincially significant Class Two wetland and Area of Natural and Scientific Interest (A.N.S.I.)), the Lower Pefferlaw Brook Wetland Complex (a Class Five wetland) and the Riverview Beach Wetlands (a Class Six wetland). The Morning Glory Swamp Wetlands are part of the larger Duclos Point Park Reserve and contain provincially significant plants.

The wetlands of the study area are predominantly situated north of Highway 48 adjacent to the Lake Simcoe shoreline. All of these wetlands have been affected to varying degrees by human structures and building activities. Of the wetlands in the community area, Riverview Beach wetland in particular has been disrupted by roads, commercial marina and recreation development, and channelization.

### 2.1.4 Forest and Wildlife

The community of Pefferlaw has a significant portion of its area (approximately 43 %) covered by scrub, immature bush and forested lands. The forest areas are utilized for fuel wood production, hunting and open space purposes. Forested lands also provide important wildlife habitat, provide a buffer for watercourses against erosion and siltation and are an important aesthetic and recreational resource for the community.

#### 2.1.4 a) Forest

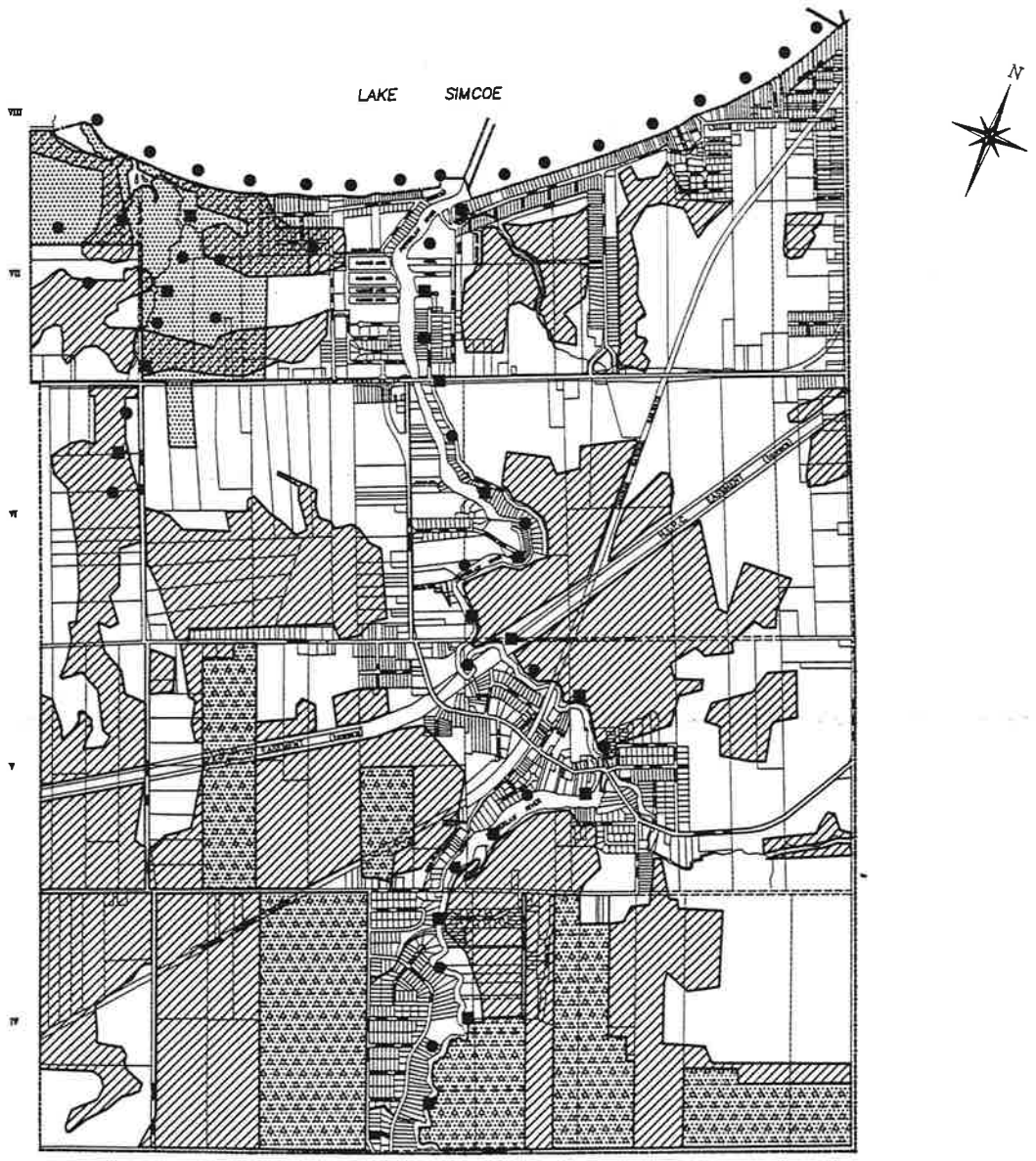
The natural forest in the community area primarily consists of poplar, basswood, birch, sugar maple, ash, oak, beech and mixed evergreens consisting of tamarack, pine, spruce and cedar. The hardwoods are generally found on well drained soils with the poorly draining areas supporting cedar. Growing conditions are not ideal as limitations exist due to the high water table and poor soils.

Generally, with the exception of the Morning Glory wetlands, the northern portion of the community area along the Highway 48 corridor has been cleared for agricultural purposes. The majority of forested land is situated in the southerly portion of the community area and is privately owned. The Region of York Forests control a significant amount of land in the community area (approximately 10 % of the total community area) and the tree plantations maintained by the Region are collectively known as the Pefferlaw Tract.

### 2.1.3 b) Wildlife

The Ontario Land Inventory classifies the Pefferlaw community area as possessing severe limitations to the production of wildlife due to water inundation and shallow stream depths. Terrestrial fauna found in the community area is typical of the Great Lakes mixed forest region and includes white tailed deer and small mammals such as the red fox, porcupine, european and snowshoe hare, beaver, muskrat and mink. Fur bearing mammals occur along the Pefferlaw river and throughout the community area and are trapped and harvested. Coyotes and other larger mammals have been known to frequent the area but sightings are rare. According to Ministry of Natural Resources mapping a Deer Yard is situated immediately to the south of the community area, in the Pefferlaw Tract. Birds, many of an aquatic nature, are found in the community area and include puddle ducks, wood ducks, ruffed grouse, wild turkey, blue herons, migrant woodcocks and Canada geese.

Ministry of Natural Resources mapping identifies the Lake Simcoe shoreline as a warm water fishery and the Pefferlaw River (also known historically as the Pefferlaw Brook) as a warm water migratory run. A smaller stream with seasonal flow draining into the Morning Glory wetlands also has a marginal warmwater migratory run. Fish characteristic of the warmwater fishery and migration include pike, walleye (yellow pickerel), small and large mouth bass and carp. A more diverse seasonal cold water fishery consisting of trout and whitefish exists further out into the lake. A seasonal fish sanctuary has been established by the Ministry of Natural Resources between the Pefferlaw dam and Highway 48. The Pefferlaw Dam blocks fish migration and




# PEFFERLAW SECONDARY PLAN

## FOREST AND WILDLIFE PLAN

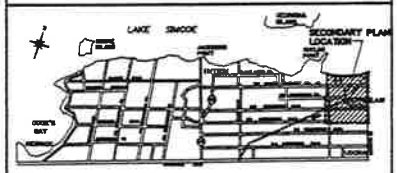
TOWN OF GEORGINA

FIGURE 3

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- AGREEMENT FORESTS
- PRODUCTION FOREST AREA
- YORK REGIONAL FOREST, PEFFERLAW TRACT
- WARM WATER FISHERIES WITH WARM WATER MIGRATORY RUN
- WARM WATER FISHERIES

## KEY MAP

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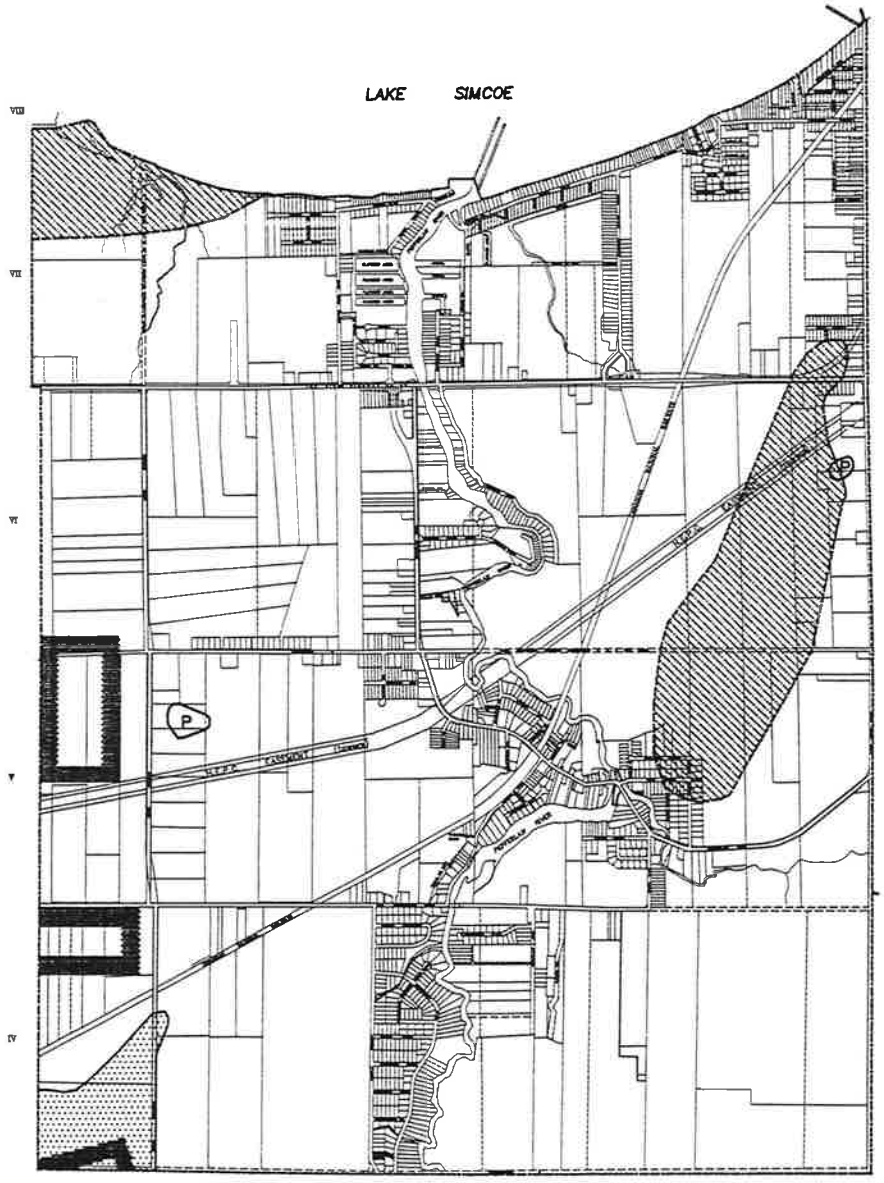



# PEFFERLAW SECONDARY PLAN

## AGGREGATE RESOURCE PLAN

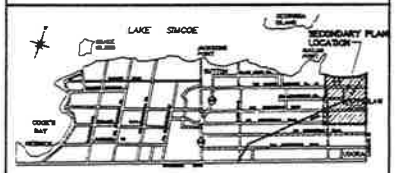
TOWN OF GEORGINA

FIGURE 4

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- SECONDARY DEPOSITS
- OVERBURDEN 4–25 FEET
- RESOURCE PROTECTED IN OFFICIAL PLAN
- (P) – ABANDONED PITS

## KEY MAP

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adversely affects the warmwater migratory run. A significant commercial fishery is also present on the Pefferlaw river and consists of the harvesting of emerald shiners.

### 2.1.5 Aggregate Resources

A major gravel spillway resulting from the retreat of Lake Algonquin underlies the surface and runs northward along the westerly portion of the community area. Sand and gravel deposits are common in underground drainage spillway areas. Areas of overburden with depths ranging from 4-25 feet have been identified east of the Pefferlaw river and beneath the Morning Glory Swamp wetlands. The overburden areas are substantial in size and account for approximately 7 % of the total community area. Deposits in these areas may or may not be of sufficient depth and quality to be economically viable. Effectively, aggregate resources located beneath the Morning Glory Swamp wetlands are sterilized and would not be available for extraction.

In the extreme southwest corner of the Pefferlaw community area, as shown by Figure 4, there is an area with secondary deposit potential. Secondary deposits are not considered to be the best resource although they are believed to contain significant amounts of sand and gravel and could be considered part of an aggregate supply for an area. Situated directly north of this are two areas (one is currently an extractive area) where the aggregate resource has been identified and protected by the Official Plan. The extent of the areas identified and protected by policies contained within the Official Plan are approximately 2.4 % of the community area. Two abandoned wayside pits have also been identified in the community area and are also shown in Figure 4, the Aggregate Resource Plan for the community.

### 2.1.6 Watersheds and Drainage Systems

Drainage throughout the community area is problematic due to the flatness of the topography and the low slope gradient and water velocity of drainage courses. Sediment accumulation in the drainage courses themselves, due to the low water velocity, further reduces the efficiency and capacity of the watercourses. Peak storm

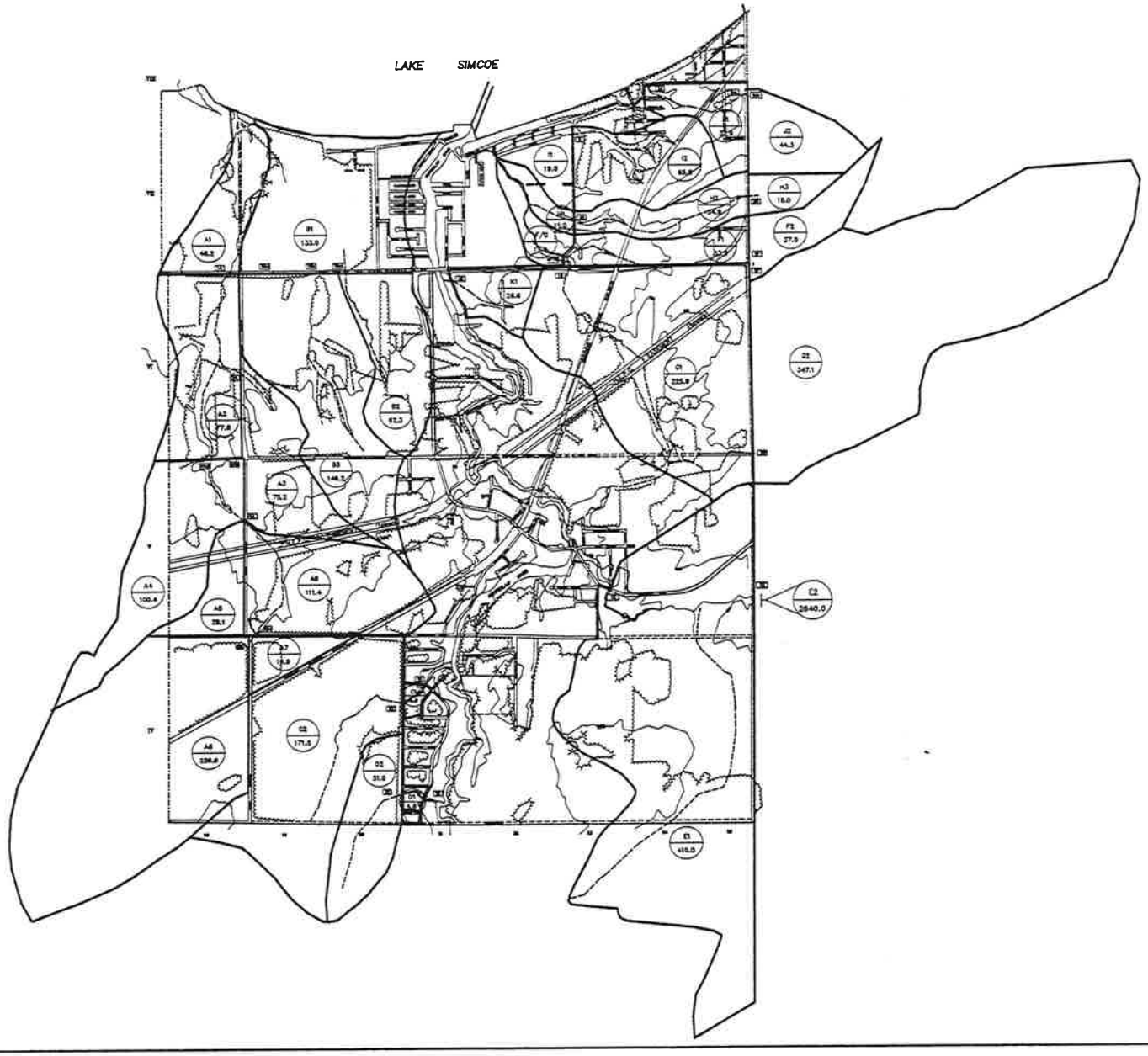
flows are low in the community area due to the nature of the soils, flat slopes and the natural water storage available in marsh and swamp areas. The water level of Lake Simcoe also measurably affects the level of standing water in the northern shoreline areas of the community, with increases in the lake level negatively effecting drainage.

As part of the Secondary Plan Background study a Drainage System Review of the community area was undertaken. Drainage problem areas were identified and examined and the capacities of the culverts as well as peak flows were reviewed. In summary, it appears that existing drainage problems appear to be caused by high groundwater conditions and not by surface water flow restrictions caused by insufficient culvert capacity. It was also concluded that a significant increase in the urbanized area within the Secondary Plan Study area would likely result in culvert capacities being exceeded. Stormwater runoff from newly developed areas could also cause a negative impact on the fishery resource and should therefore be closely monitored and controlled. It was recommended by the review that all new residential development be required to undertake Master Drainage Plans for the drainage area in which a development is situated in order to estimate the impact of the proposal. Detailed drainage information is contained in the Drainage System Review contained in Appendix A to this document.

### 2.1.7 Flood Plain and Regulatory Fill Areas

Floodplain areas are primarily located along the Pefferlaw River, the stream leading into the Morning Glory Wetland on the west side of Weir's sideroad, and the stream that goes through Wilfred in Brock Township and joins the Pefferlaw River just north of the dam. These areas are significant in size and account for approximately 7 % of the Pefferlaw community area.

Regulatory fill areas were also identified as being very extensive, these being located primarily throughout the north and westerly portions of the community area. The portion of the community area subject to fill regulation is 1,142 hectares (2,823 acres) or approximately 44 % of the total community area. When combined with the




# PEFFERLAW SECONDARY PLAN

## WATERSHED PLAN

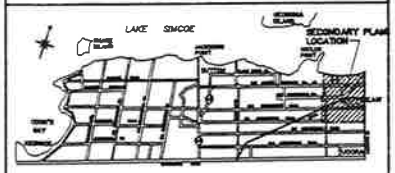
TOWN OF GEORGINA

FIGURE 5

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- SUBCATCHMENT NAME
- AREA IN HECTARES
- CULVERT
- WATERSHED AREA
- EXISTING CONTOUR (5.0m Interval)

## KEY MAP

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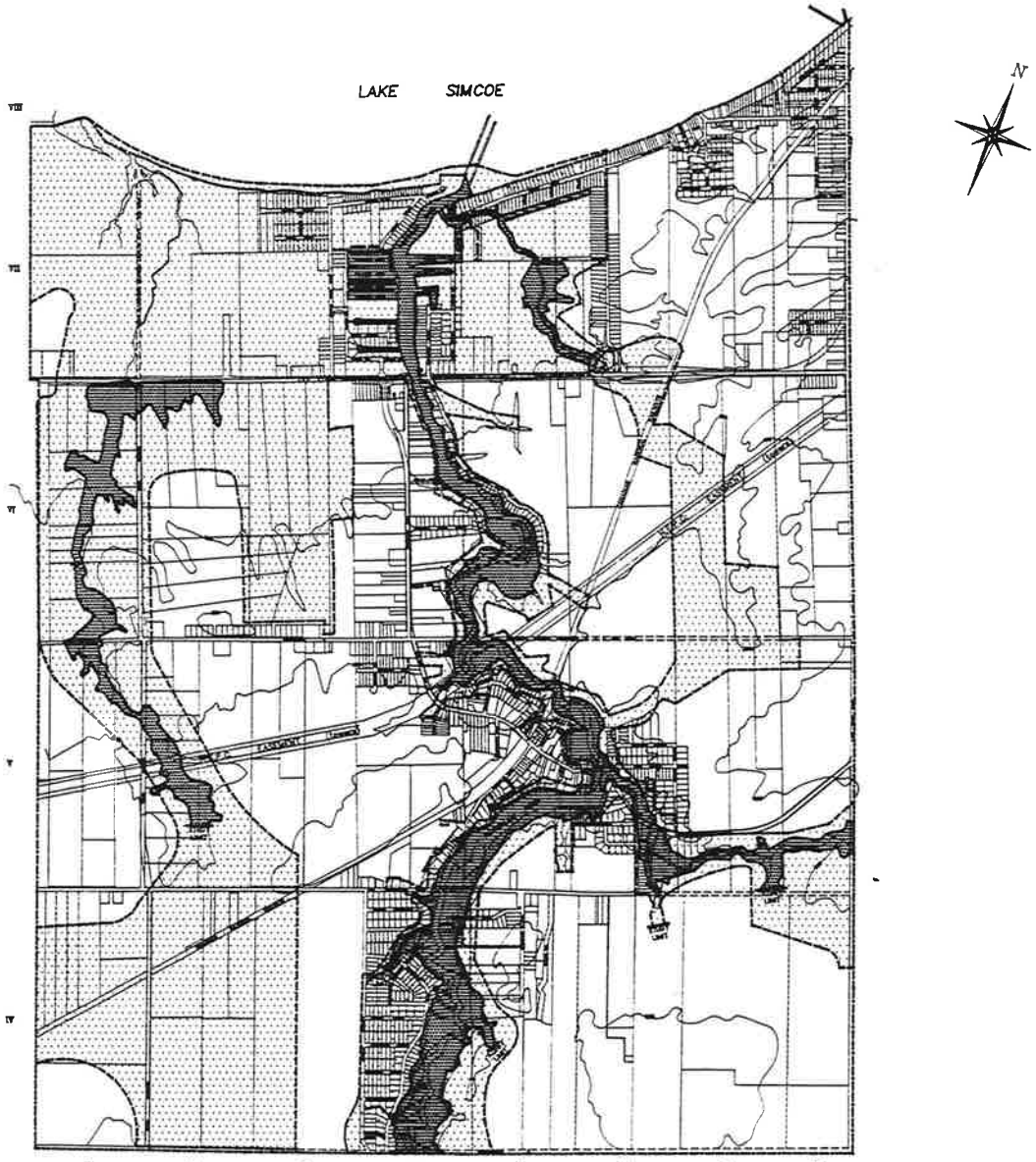



# PEFFERLAW SECONDARY PLAN

## FLOOD PLAIN AND FILL REGULATION LINE MAPPING

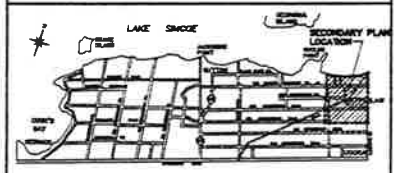
TOWN OF GEORGINA

FIGURE 6

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- REGULATORY FLOOD LINE
- REGULATORY FILL LINE
- CONTOUR (5m interval)
- FLOOD PLAIN AREA
- REGULATORY FILL AREA

## KEY MAP

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area identified as floodplain, over half or 51 % of the Pefferlaw community area is subject to flood hazards and the fill regulations of the Lake Simcoe Conservation Authority.

## 2.2 COMMUNITY LAND USE

In 1991, a windshield survey was undertaken by Reinders and Associates Limited to accurately determine the character and type of existing land uses within the Pefferlaw community area. This information has been transferred onto Figure 7, the Existing Land Use map. Land Use information obtained from the windshield survey was combined with Ministry of Agriculture and Food and Ministry of Natural Resources mapping to develop an accurate statistical breakdown of land uses within the community area. This statistical summary of land uses for the Pefferlaw community area is included as Table 1.

In this section we intend to describe the types and current status of land uses found in the Pefferlaw community area. Generally land uses within the community area may be placed into two basic categories, one being those land uses with urban characteristics and the other less intrusive land uses with rural and agricultural characteristics. For the purposes of brevity, Wetland, Woodland and Aggregate Extractive land use classifications are not discussed in this section and have been omitted as these were discussed in the preceding section.

Generally land uses in the community area of Pefferlaw may be characterized as fragmented and disjointed. This is primarily due to divisions caused by natural features such as the Pefferlaw River, poorly drained areas, railway and hydro electric utility corridors and a limited road network. Many land uses are scattered throughout the community area and are in need of focusing and increased integration with similar uses in the rest of the community. As an example, residential development is not contiguous and a number of vacant or underutilized parcels isolate and separate residential areas. Without guidance from clear planning and development policies, confusion concerning where residential development should occur may lead to further ad-hoc and unfocused growth.

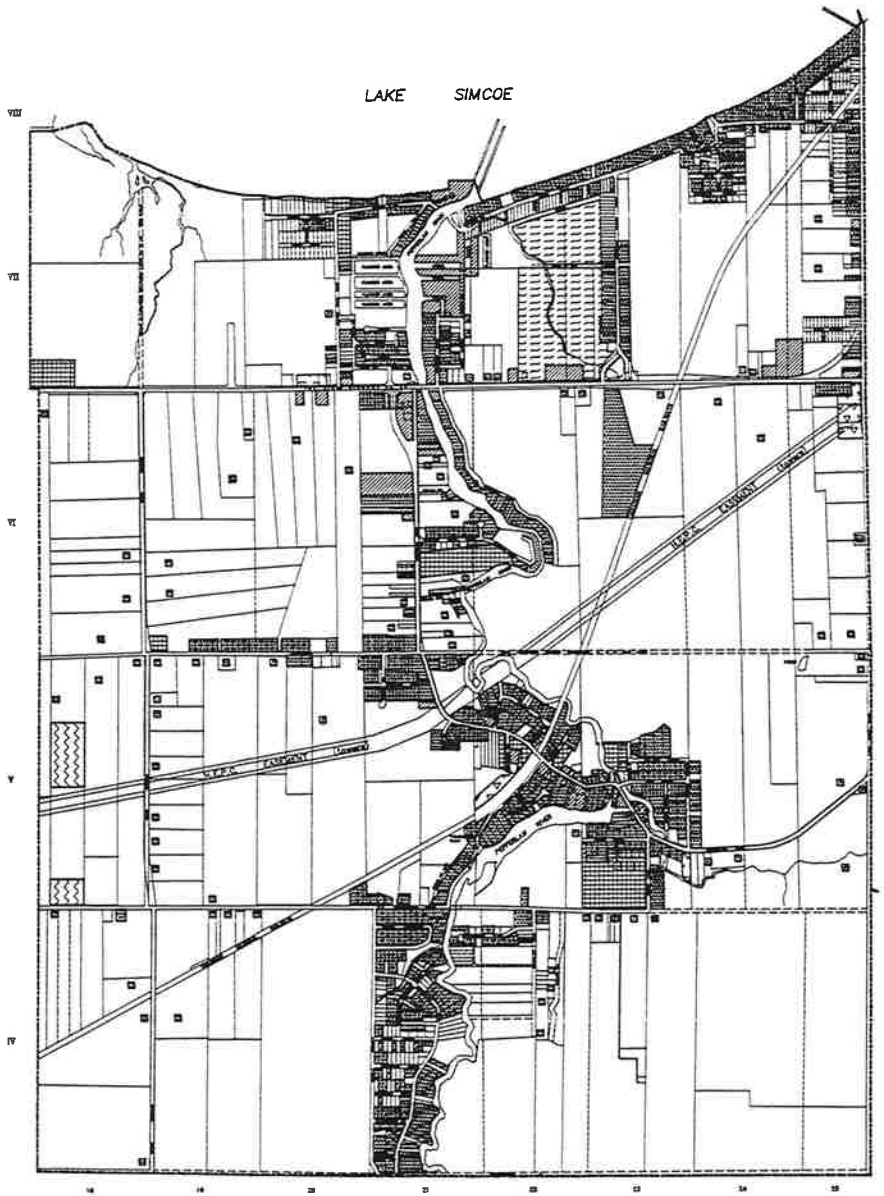
### 2.2.1 Existing Urban Type Uses

#### 2.2.1 a) Residential

Within the community area there are basically two types of residential development consisting of seasonal and permanent residential uses. Although the distinction is gradually disappearing, seasonal residential development historically was characterized as smaller cottage dwellings orientated near a natural amenity such as a lake, river etc. In the community area this type of residential land use is centered around the Lake Simcoe shoreline and the Pefferlaw river. According to 1990 assessment data, there are approximately 262 cottages in the community, 23 of which are classified as occupied on a year round basis. The seasonal residential component currently comprises 21.7 % of the total number of residential housing units. Statistics show that the seasonal residential component is slowly declining as a result of the continuing conversion of cottages into permanent residential dwellings.

Although permanent residential uses are situated throughout the community area they are predominantly centered in the core area along Pefferlaw and Station Roads, and in the Woodland Subdivision. Scattered farm residences are located throughout the rural area as well as linear non-farm residential development located along concession roads. The residential use is a significant land use consisting of a total of 1,207 housing units and accounting for approximately 14 % of the total community area. Presently 10 % of the total number of housing units located within the Town of Georgina are situated within the Pefferlaw community area.

Almost all types of residential structures found in the Town are also present in the community, however due to servicing constraints the ability of the Pefferlaw community to continue to provide a variety of housing types in the future is very limited. Presently, single family detached dwellings make up approximately 93 % of the community housing stock.




# PEFFERLAW SECONDARY PLAN

## EXISTING LAND USE

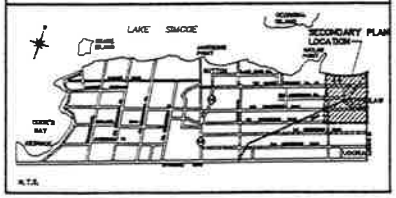
TOWN OF GEORGINA

FIGURE 7

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- VACANT / RURAL
- RECREATIONAL OPEN SPACE
- EXTRACTIVE INDUSTRIAL

## KEY MAP




REINDERS

Base Map Source : Assessment Maps (1974)
Land Use Source : F.J.Reinders Windshield Survey (1991).

SCALE 1 : 12 500

0 500 1000 1500m

**Table 1**

**EXISTING LAND USE SUMMARY*** Community Area of Pefferlaw

| Land Use Category | Size Hectares | Acres | Percentage of Total |
|---|---|---|---|
| Built Up | 440 | 1,087 | 17.3 |
| Residental | 360 | 8,90 | 14.2 |
| Commercial | 44 | 109 | 1.7 |
| Industrial | 6 | 16 | .2 |
| Institutional | 30 | 75 | 1.2 |
| | | | 17.3 |
| Agricultural (Field Crops) | 597 | 1,475 | 23.5 |
| Extractive Resources | 9 | 22 | .3 |
| Woodlands | | | |
| Production Woodland | 824 | 2,036 | 32.4 |
| York Regional Forest | 263 | 6,51 | 10.3 |
| Wetlands | 298 | 736 | 11.7 |
| Transportation/Communications | 71 | 175 | 2.8 |
| Recreational Open Space | 38 | 94 | 1.5 |
| **Total** | **2,540** | **6,276** | **100.0 (99.8)** |

*Source = 1992 Reinders & Associates Existing Land Use Survey & Min. of AG & FD and MNR Land Use Mapping.

### 2.2.1 b) Commercial

Commercial land uses in the community area are principally located in three general areas, the Pefferlaw commercial core area, the Highway 48 corridor and along the Pefferlaw River. Commercial uses located in the commercial core are neighbourhood commercial in nature and include small retail shops, foodstores, personal services, office uses, a garden centre, restaurants, vehicle maintenance and repair establishments and a bank. This is the primary commercial area and focus of the community. Apart from a greater utilization of existing buildings in the core area, opportunities for expansion of central core commercial activities are extremely limited due to the lack of municipal water and sewer servicing, the physical presence of the river and the proximity of nearby residential areas. An improvement in the commercial core area recommended by previous planning studies concerned increasing the provision of increased off-street parking.

Along the Highway 48 corridor highway commercial uses such as gas stations, restaurants, convenience stores, and a garden centre are located. Recreational marine and tourist commercial uses predominate in the area along the Pefferlaw River, especially north of Highway 48. These uses include three marinas, a motel and a golf course and constitute the major commercial type of land use. Although the Pefferlaw commercial uses serve outlying rural areas and hamlets and are an important sector of the community, existing commercial land uses are not space extensive and account for only 1.7 % of the total community area.

### 2.2.1 c) Industrial

Industrial land uses in the community area are very limited in size and extent. Industrial uses are presently located within the core area next to the railway right-of-way and along the Highway 48 corridor. Industrial uses account for approximately 0.2 % of the total community area and are mostly manufacturing in nature. As a result of servicing constraints industrial uses are limited to those activities which do not require the use of water in the manufacturing process or "dry" type uses.

### 2.2.1 d) Institutional

Institutional uses are a minor land use category in the secondary plan and account for approximately 1.2 % of the total community area. Institutional land uses would include the post office, community centres, library, churches, fire station, etc. A more detailed description of the various community institutional uses is included in the following Community Profile section.

### 2.2.1 e) Transportation/Communications

The community area of Pefferlaw is directly accessed by two main roads, provincial Highway 48 and Regional Road 23 (Lake Ridge Road). In terms of road connections to the south, the community is well served with Highway 48 providing access to multilane Highway 404 and Regional Road 23 providing access to Highway 401 and, when completed, the new Highway 407. Regional Road 21 (Pefferlaw Road)

is a minor arterial located exclusively within the community area which services the core area linking Highway 48 and Durham Regional Road 23. Two other Regional Roads are located within the community area, these being Regional Road 79 (Old Homestead Road) and Regional Road 81 (Weir's Sideroad).

In terms of railway facilities, a secondary main line of Canadian National Railways dissects the community in a diagonal fashion running directly through the core area. Rail access for industrial purposes may be possible through the construction of a railway siding from this line. Future GO RAIL passenger service may also be available to commuters from Uxbridge which is located directly to the south of the community area and easily accessed via Regional Road 23. The feasibility of establishing a commuter rail corridor from Beaverton south through the community to Toronto should be examined. Transportation is a minor land use in the community with approximately 2.8 % of the total area being used for this purpose.

### 2.2.2 Existing Rural Type Land Uses

#### 2.2.2 a) Agriculture

Although approximately 66 % of the community area is classified by Canada Land Inventory agricultural capability mapping as being Class 1 & 2 lands with no significant or moderate limitations for agricultural use, only 23.5 % of the community area is actively farmed and cropped. Agricultural lands within the community area contain reasonably fertile soils, generally have no topographic limitations, possess a relatively long growing season and a climate tempered by Lake Simcoe to the north. Agriculture, however is not a predominant land use in the community area because of drainage problems due to the high water table, individual landholdings and parcels typically being too small to be economically viable and the fact that a large proportion of the potential agricultural land has remained forested and was never cleared for agricultural purposes. There has been very limited alteration of the natural drainage pattern by the construction of drains to improve the capacity of the land for agricultural production. Two small systematic tile drain systems are located within the study area.

Agricultural Land Use Systems mapping of the Ministry of Agriculture and Food indicate that scattered agricultural uses occur throughout the community area and that agricultural activity is primarily located in the eastern portion of the community. Agricultural mapping indicates that grain and hay crops are the predominant agricultural uses although pasture and grazing activities also occur.

### 2.2.2 b) Recreational Open Space

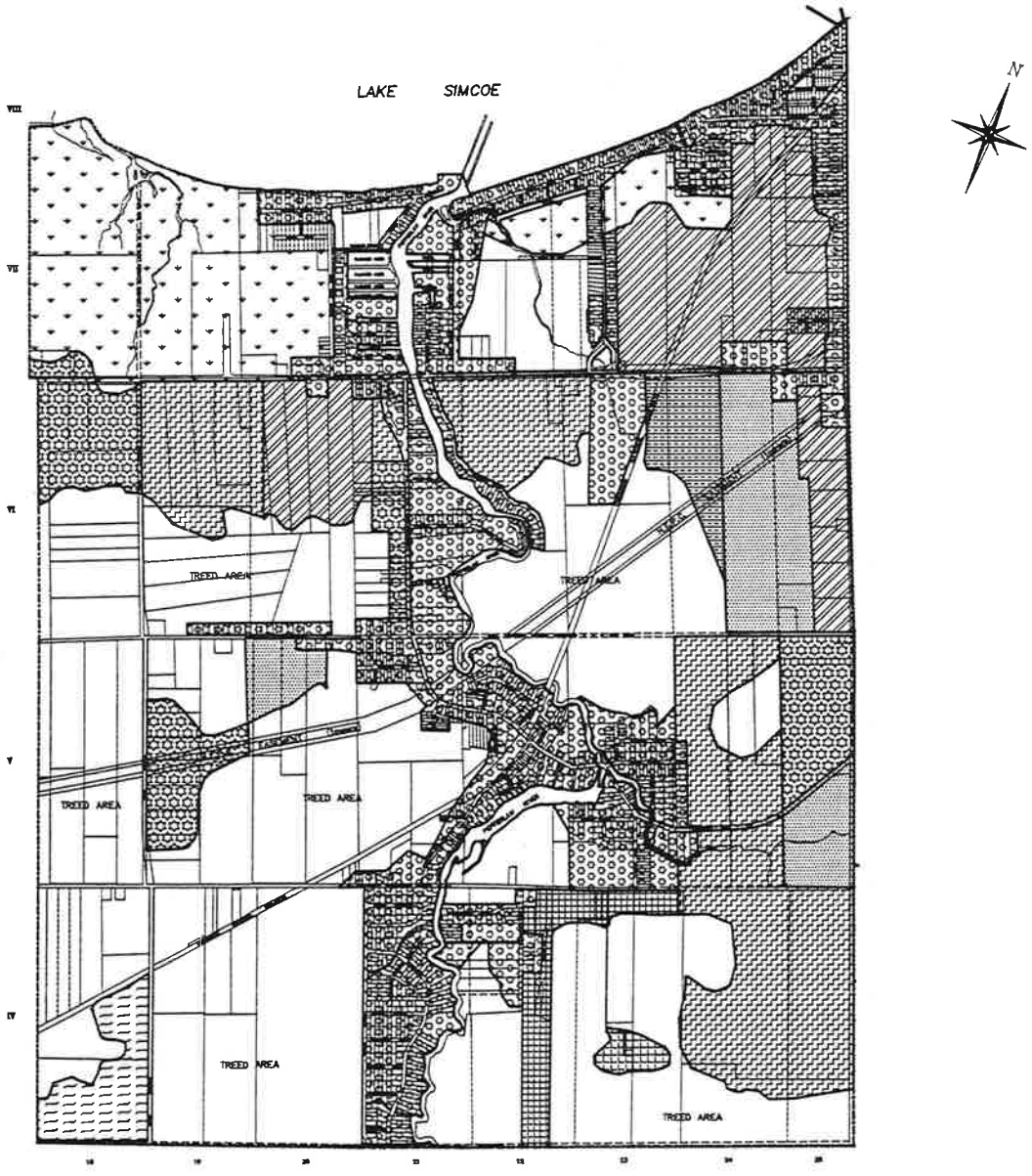
This land use category includes both public and private areas utilized for recreational activities. The major recreational open space area in the Pefferlaw community area is the Everglades Golf Course. This 18 hole golf course is located north of Highway 48 on both sides of Flying Bridge Road and is open to the public on a pay as you play basis. This use accounts for approximately 1.5 % of the total area of the community. Public recreational open space areas and facilities will be discussed in the Community Profile section.

## 2.3 COMMUNITY PROFILE

The following section of the Background Report profiles the Pefferlaw community area in terms of its demographic and socio-economic characteristics, community resources, transportation and commercial needs. This profile utilizes data collected for other studies undertaken by the municipality, in particular the Municipal Housing Statement. Assessment data specific to the community area relative to population, housing types and growth was obtained from the regional planning department. This data was reviewed in an effort to identify trends or changes occurring in the community area and allow future projections regarding population etc. to be made.

### 2.3.1 Population Profile and Projections

According to assessment data, the 1991 population of the Pefferlaw Community area was 2,314 people. This assessment data consists of the combined statistics for subdivisions 05 & 06, which although they do not coincide exactly with the boundaries of the Pefferlaw community area, most accurately represent it. Similar to the Town as a whole, the community area of Pefferlaw possesses both seasonal




# PEFFERLAW SECONDARY PLAN

## AGRICULTURAL LAND USE SYSTEMS

TOWN OF GEORGINA

FIGURE 8

## LEGEND

- SECONDARY PLAN BOUNDARY LINE

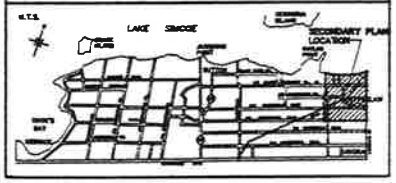
FIELD CROP SYSTEMS

- MIXED SYSTEMS
- MIXED GRAIN
- HAY SYSTEM
- PASTURE SYSTEM
- GRAZING SYSTEM

NON-SYSTEM LAND USES

- IDLE AGRICULTURAL LAND (5-10 YRS.)
- IDLE AGRICULTURAL LAND (OVER 10 YRS.)
- BUILT-UP
- SWAMP, MARSH OR BOG
- TREED & OTHER NON-AGRICULTURAL LAND USES

## KEY MAP




REINDERS

SCALE 1 : 12 500

0 500 1000 1500m

and permanent populations. Based on 267 seasonal residential dwellings situated within the community area and an occupancy rate of 2.1 persons per unit, the seasonal population in 1988 was estimated to be approximately 560 residents.

The age distribution of the community of Pefferlaw, when compared with similar data for the province, generally possessed higher percentages of elderly and slightly lower percentages of persons under the age of 25 years. In 1990, 18.8 % of the population of the Pefferlaw community was under 15 years of age. This percentage is the result of a population increase due to a relatively high rate (63 %) of in-migration, a large proportion of which consists of young families of childbearing years in search of affordable housing. The proportion of persons aged 15 - 24 in the community area is low at 9.8 % of the total population when compared to a provincial percentage of approximately 16.5 % for this age group. This low percentage may reflect the fact that people in this age group emigrate away from the community area in search of education and career opportunities.

The number of persons aged 25 - 44 is very close to the provincial average which again reflects the in-migration of young families. Those persons aged 55 years and older make up approximately 22.7 % of the community's population, a slightly higher percentage than the province (20.6 %) and significantly higher than York Region (14.4 %). Reasons for this higher percentage of elderly residents may be the community's present role as a local retirement destination and the conversion of seasonal dwellings by longtime seasonal residents to permanent residential dwellings for retirement purposes.

The permanent population of the community, like most in the province, is getting older and the percentage of people aged 65 + in the next ten years is expected to increase from 12% at the present, to approximately 15% of the total population. Correspondingly, decreases are expected in the 0-14 and the 15-24 age groups.

**Table 2**
**AGE DISTRIBUTION & POPULATION** **Community Area of Pefferlaw**

| Age Group | 1987 No. | 1987 % | 1988 No. | 1988 % | 1989 No. | 1989 % | 1990 No. | 1990 % |
|---|---|---|---|---|---|---|---|---|
| 0-14 | 333 | 16.4 | 446 | 21.9 | 430 | 18.5 | 436 | 18.8 |
| 15-19 | 110 | 5.4 | 96 | 4.2 | 122 | 5.2 | 105 | 4.5 |
| 20-24 | 90 | 4.4 | 110 | 4.9 | 102 | 4.4 | 123 | 5.3 |
| 25-34 | 268 | 13.2 | 373 | 16.7 | 384 | 16.5 | 408 | 17.6 |
| 35-44 | 255 | 12.5 | 312 | 13.9 | 341 | 14.7 | 324 | 14.0 |
| 45-54 | 155 | 7.6 | 199 | 8.9 | 226 | 9.7 | 199 | 8.6 |
| 55-64 | 178 | 8.7 | 201 | 7.9 | 198 | 8.5 | 192 | 8.3 |
| 65+ | 229 | 11.2 | 257 | 11.5 | 267 | 11.5 | 276 | 11.9 |
| Unknown | 409 | 20.1 | 239 | 10.7 | 246 | 10.6 | 251 | 10.8 |
| **Total** | **2,027** | **100.0** | **2,233** | **100.0** | **2,316** | **100.0** | **2,314** | **100.0** |

87-90 Average Annual Growth Rate = 3.4%
87-90 Net Growth 287 = 14.1%
1990 Seasonal Population Est. = 262 x 2.1 p.p.u. = 550

Sources: 1991 Assessment Data, Subdivisions 05 & 06

### 2.3.1 a) Households and Families

The total number of households in the Town of Georgina has increased at a greater rate than the population in general. This high rate of household growth reflects a general change towards smaller and non-family households. The rate of growth of non-family households between 1976 and 1986 was double that of family households. In 1986, 81.6 % of all households were family households while 18.4 % were non-family households.

The size of households within the Town are smaller than both the region and the province with 42 % of the households comprised of two person families compared with 31 % for the region. This may be the result of the greater proportion of senior citizen and single parent households within the Town. In terms of household size, approximately 49 % of the population resided in two person households with the average number of persons per household being 2.9 persons which is slightly

higher than the provincial average of 2.8 persons per household. The percentage of families with children in the Town of Georgina is 58 %, a lower rate when compared to York Region which had 71 % of all families with children. As mentioned above, modest declines in the average number of persons per household are expected as well as increased numbers of non-family households.

### 2.3.1 c) Population Projections

When reviewing population projections, caution should be exercised in order that the projections are interpreted in the context intended. The projections are not intended to reflect Regional or Town policy or population targets but rather to stimulate discussion about policy requirements necessary to accommodate estimated future growth. There are a number of methods that may be utilized to estimate future populations. The method used in developing the estimate in this report was to multiply the present population by an anticipated average annual growth rate for four five year periods. From our present perspective it is reasonable to assume that growth rates will generally be low until 1996, when the demand for housing (especially senior housing) is expected to increase. The projections have varying percentage growth rates as shown on the chart to account for anticipated economic cycles. Projections beyond the ten year period are usually less accurate since many factors including social trends, economic factors and technical improvements may not be foreseen and cannot be accounted for.

According to regional assessment data contained within the Municipal Housing Statement, population growth of Pefferlaw between 1972 and 1989 averaged 8.0% per annum with the net population increasing by 136.7% during the same period. Pefferlaw modestly increased its proportion of the Town of Georgina's total population from 4.6 to 6.1 percent. During this same period the Town of Georgina as a whole grew by 78 % at an annual rate of 4.6 %. Data specifically relating to the Pefferlaw community area indicates that in the period from 1987 (the first year assessment data was available for subdivisions 05 & 06) to 1990, the community

area experienced a net population growth of 287 persons and grew at an average annual growth rate of 3.4 %.

**Table 3**

**PROJECTED POPULATION GROWTH RATES** — **Town of Georgina Community Area Of Pefferlaw**

| | ASSUMPTION 1 AAGR = 1.5% High | | ASSUMPTION 2 AAGR = 1% Low | |
|---|---|---|---|---|
| | Pop. | % | Pop. | % |
| 1991 | 2,314 | 1.0 | 2,314 | .05 |
| 1992 | 2,337 | 1.0 | 2,325 | .05 |
| 1993 | 2,360 | 1.0 | 2,336 | .05 |
| 1994 | 2,383 | 1.0 | 2,347 | .05 |
| 1995 | 2,406 | 1.0 | 2,348 | .05 |
| 1996 | 2,430 | 2.0 | 2,359 | 1.5 |
| 1997 | 2,478 | 2.0 | 2,394 | 1.5 |
| 1998 | 2,527 | 2.0 | 2,429 | 1.5 |
| 1999 | 2,577 | 2.0 | 2,465 | 1.5 |
| 2000 | 2,628 | 2.0 | 2,501 | 1.5 |
| 2001 | 2,680 | 1.5 | 2,538 | .05 |
| 2002 | 2,720 | 1.5 | 2,550 | .05 |
| 2003 | 2,760 | 1.5 | 2,562 | .05 |
| 2004 | 2,801 | 1.5 | 2,574 | .05 |
| 2005 | 2,843 | 1.5 | 2,536 | .05 |
| 2006 | 2,885 | 1.5 | 2,598 | 1.5 |
| 2007 | 2,928 | 1.5 | 2,636 | 1.5 |
| 2008 | 2,971 | 1.5 | 2,675 | 1.5 |
| 2009 | 3,015 | 1.5 | 2,715 | 1.5 |
| 2010 | 3,060 | 1.5 | 2,755 | 1.5 |
| 2011 | 3,105 | 1.5 | 2,796 | 1.5 |

*Source: Reinders and Associates Projections

For a number of reasons, it is apparent that these previous levels of growth are not expected to continue. Growth rates such as those seen in the past are not forecast for the future due to the absence of municipal sewer and water services in the community area, a stricter regulatory environment governing private septic disposal systems and a limited amount of suitable land available for development. It is expected that the Pefferlaw community area will have the lowest average annual

growth rate in the Town of Georgina, less than the 2.3 % average annual growth rate projected for the rural area in the Municipal Housing Statement.

Natural increases in the population of the Town have been consistent and the average annual natural growth rate has been steadily increasing during the period from 1972 to 1988. The average annual natural growth rate (discounting growth due to in-migration) of 161 persons per annum accounts for approximately 36 % of total annual population growth of the Town. Taking into consideration that the Pefferlaw community area presently accounts for approximately 7.9 % of the Town's total population, it is estimated that the natural increase of the community area would be approximately 13 persons per annum or a rate of .5 % a year. It is also expected that limited population growth will also occur in the community area as a result of the continuing conversion of seasonal cottage units to permanent residential dwellings.

Taking the present servicing constraints and regulatory framework into account, the natural increases of the population, and a limited amount of in-migration and seasonal cottage conversion, it is estimated that the average annual population growth would be within a range of a lower rate of 1.0 % per annum to a higher rate of 1.5 % per annum for the next twenty years. These rates are not expected to stay constant over the planning period and may vary considerably from year to year. Indeed, population growth has historically occurred in surges due to the strong component of in-migration traditionally experienced during economic boom periods when the affordability aspect of housing within the Town is more apparent. Utilizing the above noted growth rates it is expected that by the year 2011 the population of the Community Area will be somewhere within the range of 2,796 and 3,105 persons.

### 2.3.2 Social and Economic Characteristics

The Pefferlaw community area economy may be characterized as a rural/recreational satellite community based primarily on commuting residents. The Town of Georgina and the Pefferlaw community area provide housing to service the secon-

dary employment markets of more southerly municipalities such as Markham, Richmond Hill and Newmarket. The Pefferlaw community area also serves as a minor recreation destination and service center for the Town and the surrounding

**Table 4**

**POPULATION PROJECTIONS**
**ASSUMPTION 1**

**Town of Georgina & Community Area of Pefferlaw**

| Community | 1991 | 1996 | 2001 | 2006 | 2011 | AAGR |
|---|---|---|---|---|---|---|
| Georgina | 29,000 | 32,400 | 38,600 | 44,800 | 51,500 | 3.0% |
| (% of Total Pop.) | 100% | 100% | 100% | 100% | 100% | |
| Pefferlaw | 2,314 | 2,430 | 2,680 | 2,885 | 3,105 | 1.5% |
| (% of Total Pop.) | 7.9% | 7.5% | 6.9% | 6.4% | 6.0% | |

791 additional persons (34% increase) = 282.5 units (2.8 p.p.u.)
Developable land = 283 lots x 1.7 acres/lot
= 481 acres = 194.6 ha

Sources: The Starr Group, Reinders and Associates

**Table 5**

**POPULATION PROJECTIONS**
**ASSUMPTION 2**

**Town of Georgina & Community Area of Pefferlaw**

| Community | 1991 | 1996 | 2001 | 2006 | 2011 | AAGR |
|---|---|---|---|---|---|---|
| Georgina | 29,000 | 32,400 | 38,600 | 44,800 | 51,500 | 3.0% |
| (% of Total Pop.) | 100% | 100% | 100% | 100% | 100% | |
| Pefferlaw | 2,314 | 2,359 | 2,538 | 2,598 | 2,796 | 1.0% |
| (% of Total Pop.) | 7.9% | 7.2% | 6.6% | 5.8% | 5.4% | |

482 additional persons (21% increase) = 172 additional units (2.8 p.p.u.)
Req. developable land = 172 x 1.7 acre/lot
= 292 acres = 118 ha

Sources: The Starr Group, Reinders and Associates

rural area. In the past, growth was mainly due to the vacation home and the recreation/tourism sector.

### 2.3.2 a) Economic and Employment Trends

The community, similar to the Town of Georgina as a whole, has extremely limited industrial and commercial sectors as illustrated by the Town of Georgina assessment ratio of 90 % residential to 10% industrial. Census data for the Town of Georgina shows that in 1986, the majority of Georgina residents held jobs in the lower paying retail (21.2%) and clerical (18.3%) sectors. Employment opportunities increased in the Town by 22 % during the period 1981-1986, however, average Regional growth generally far outpaced that of the Town. In two sectors, service related jobs and processing, growth in the Town outperformed that of the Region. Income levels in the Town of Georgina are substantially lower than those of York Region and the province, with approximately 30% of the Town's households in 1985 earning less than $ 20,000 per annum. Average household and family incomes in the Town are 16 % below those of the province which may have resulted from the relatively affordable housing available in the Town attracting mostly middle income migrants. Another reason for the lower than provincial average income is the seasonal nature of many of the Town's service sector jobs.

### 2.3.2 b) Housing

The Town of Georgina provides relatively more affordable housing and accommodation than many of the more southerly municipalities in the Region, and because of this it is attractive to lower and moderate income households. The Town of Georgina is expected to continue to attract middle income migrants due to the relative affordable housing and good commuting links. The ability of the Town to continue to provide housing at lower prices which act as an incentive for commuters and others to locate within the Town over the longer term is not guaranteed and may be subject to change. Housing prices are strongly dependent upon a number of factors among which general economic conditions, availability and cost of servicing, commuting trends, and the prices and availability of alternatives may vary considerably.

In 1986, the housing stock of the Town of Georgina was predominantly comprised of single detached dwellings (92%) with a very limited amount of apartment (6%) and semi-detached (2%) units. The predominance of single family dwellings may have resulted from the relative affordability of this form of housing in the Town. There has been a slight trend towards greater ownership, with 85 % of all housing units within the Town now being owner occupied. The degree of ownership varies considerably by housing type with 90 % of the single family detached housing being owner occupied compared to 39 % of the single attached units and 24 % for apartment units. A large proportion of the housing stock of Georgina (31 %) is less than 20 years old, while a significant portion (20 %) of the housing stock is over 45 years in age. Problems with the condition of housing has been identified in isolated pockets throughout the municipality and consist of, in a large part, poorly converted seasonal residential cottages being used for permanent residential use.

According to the Municipal Housing Statement, the "affordable" house price in the Town, as defined by 1991 provincial standards, would cost under $ 157,000. In the Town of Georgina, 44 % of all renters were paying over 25 % (25 % of gross income or less is considered affordable) of their gross income towards rental accommodation. Affordability to a large degree is dependent upon the age of the person, with younger people typically having to pay a much higher percentage of income for accommodation. In terms of the housing mix of the Town, the Municipal Housing Statement recommended a "shift" towards a more affordable unit mix consisting of 65 % single detached dwellings, 20 % semi-detached and 15 % apartment units. The major benefit of a shift towards a housing mix such as the one described above would be to alleviate the perceived shortage of rental units and increase the number of low cost housing alternatives for those groups and segments of the population experiencing affordability difficulties.

Patterns and trends evident in the housing stock of the Pefferlaw community area are similar to the Town of Georgina as a whole. Housing in the community area in 1988 accounted for approximately 10 % of the total housing stock of the Town of

**Table 6**

**HOUSING ANALYSIS** — **Community Area of Pefferlaw**

| Structural Type | 1987 No. Occ. Units | 1987 Total | 1988 No. Occ. Units | 1988 Total | 1989 No. Occ. Units | 1989 Total | 1990 No Occ. Units | 1990 Total |
|---|---|---|---|---|---|---|---|---|
| Single Attached | 3 | 4 | | | | | | |
| Single Farm | | | 21 | 23 | 21 | 23 | 21 | 23 |
| Single Non Farm | 712 | 746 | 739 | 794 | 775 | 834 | 776 | 848 |
| Row Housing | | | 1 | 2 | 1 | 2 | 1 | 2 |
| Semi & Duplexes | 8 | 10 | 6 | 12 | 5 | 7 | 5 | 7 |
| Apartments | 26 | 26 | 26 | 26 | 31 | 32 | 5 | 6 |
| Apts/Comm. | | | 14 | 15 | 14 | 15 | 14 | 15 |
| Non-Residential | 14 | 15 | | | | | | |
| Institutional *** | | | | | | | 23 | 26 |
| Mobile Home | 1 | 1 | | | | | | |
| Other Residential | 1 | 4 | 7 | 7 | | | | |
| Uncoded | 6 | 13 | 13 | 20 | 12 | 17 | 13 | 18 |
| Total Permanent | 756 | 819 | 803 | 899 | 837 | 930 | 835 | 945 |
| Cottage - Seasonal | 15 | 276 | 24 | 267 | 22 | 265 | 23 | 262 |
| Total Permanent & Seasonal | 771 | 1,095 | 827 | 1,166 | 859 | 1,195 | 858 | 1,207 |

Sources: Assessment Data, Subdivisions 05 & 06

* Changes in the number of specific units and types may be due to the reclassification of units

** Seasonal units are considered single non farm

*** Existing mobile home park not recognized by assessment data

Georgina. The housing stock of the Pefferlaw community area is generally characterized by slightly higher percentages of single detached units and seasonal cottage dwellings than the Town. The tendency in the community area to have slightly elevated numbers of single detached units would be expected because of servicing constraints and the reliance on private services. Apart from the presence of mobile homes, the community area possessed all other forms of accommodation found throughout the Town, although at slightly lower percentages. Housing statistics for the community area show a slight trend in the continuing loss and conversion of seasonal housing stock to permanent residential use. During the period of 1987 to 1990, the period for which data is available, this loss occurred at an average rate of 1.2 % per annum.

The ability of the community area to continue to provide other forms of housing types other than single detached residential dwellings will be severely restricted due in a large part to recently developed and implemented provincial policies governing private sewage disposal services. Although there are no reasons to suggest the contrary, it is not yet evident whether government assisted and sponsored housing projects will also be subject to these policies. The Municipal Housing Statement for the Town reviewed and evaluated the core area of the community and stated that Pefferlaw could generally support a limited range of residential intensification. The form of residential intensification recommended was infill (by severance of new or underutilized properties) and accessory apartments, as well as the redevelopment of existing commercial properties in the core area. The type of intensification recommended above in the very least would require an assessment of the capacity of the existing sewage disposal system and approval by the local health unit of any proposed expansion. Due to the present restrictions concerning the nitrate loading of groundwater, the opportunity for the inclusion of a residential component in a

**Table 7**
**COMPARISON OF HOUSING UNITS BY STRUCTURAL TYPE WITH TOWN OF GEORGINA – 1988**

| Community | Single Perm. | Single Seas. | Semi | Row | Apt. | Mobile | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Town of Georgina | 7,878<br>67.9% | 2,363<br>20.3% | 82<br>.7% | 102<br>.9% | 643<br>5.5% | 194<br>1.7% | 329<br>2.8% | 11,591<br>100%<br>(99.8)* |
| Community of Pefferlaw | 817<br>70.0% | 267<br>22.9% | 12<br>1.0% | 2<br>.1% | 41<br>3.5% | **0 | 27<br>2.3% | 1,166<br>100%<br>(99.8) |
| Pefferlaw Unit Types as Percentage of the Town of Georgina | 10.3% | 11.3% | 14.6% | 1.9% | 15.7% | – | 8.2% | 10% |

Source: Assessment Data, Subdivisions 05 & 06 and Municipal Housing Statement.
*Percentage may not add to 100% due to the effects of rounding.
**Existing Mobile Home Park not in data.

mixed use (commercial and residential) development would generally be very limited except where the nature of the commercial use was "dry" in nature and not water intensive.

### 2.3.3 Commercial Services Review

A commercial services review was undertaken on behalf of the Town of Georgina in order to establish the quantity and type of future retail/service space that would be warranted in the community area of Pefferlaw by the end of the planning period. The results of this review are to be used as background information and provide input into the completion of the Pefferlaw Secondary Plan.

The present supply of retail and service space within the Pefferlaw community area is limited. The major commercial concentration of the community area is found in the Pefferlaw core along Regional Road # 21 (Pefferlaw Road) with a minor amount of commercial uses located along Highway 48. The use of buildings within the existing commercial core area could be intensified since many properties are designated commercial but presently used for residential purposes. The location of businesses to this area could be encouraged through investment in parking facilities and increased signage along transportation corridors outside the core area. It should be noted that the potential for the location of additional businesses to the core area is basically limited to the utilization of existing buildings. Businesses which wish to locate in the community area in a new building would be forced to located outside of the core area because of the need for extensive space due to the regulatory requirements.

#### 2.3.3 a) Methodology and Commercial Location

Two methods have been commonly used to forecast and assess market need. When expenditures and sales per square foot information is available, required retail/service space is calculated in terms of the total space that could be supported by the expenditure of the residents of the trade area, in this case the Pefferlaw community area. In the instance that expenditure and sales per square foot values

are not obtainable, the estimation of potentially supportable space may be based on the threshold number of consumers typically needed to support each type of commercial facility. The review method used in evaluating the future space requirements for the Pefferlaw community area have been based on the former method, that being the use of per capita square foot ratios. This method is widely used in other market analyses in Ontario and is considered acceptable in examining a market from a commercial planning point of view.

In the evaluation of the need for additional commercially designated lands in the Pefferlaw community area, it is our opinion that the question is not so much whether or not commercial uses are needed or where to locate them, but rather what type of commercial uses are appropriate, how much commercial space is required, and to what extent can commercial uses be developed given the present servicing and regulatory constraints. If a suitable site could be found within the core area (our review has indicated that such a site is not available) future businesses would end up servicing mostly the existing Pefferlaw community.

It is felt that the location of a commercial centre at the intersection of Highway 48 and the Pefferlaw Road (York Regional Road # 21) would be more beneficial to the Town as well as to the Pefferlaw community area since such a centre would serve a larger population (i.e. both local and pass-through traffic) and therefore a larger and more diverse commercial use could possibly be established. The location at this intersection of a small commercial centre would also serve to help promote an existing and developing commercial "node" which could serve to "funnel" further traffic into the core area. A commercial use at this location would also utilize an existing intersection and would not necessarily result in the development of additional accesses onto Highway 48. Other locations were not considered because it is evident that no other area with the Pefferlaw community had a similar potential.

### 2.3.3 b) Types of Commercial Uses

In terms of the type of commercial uses that could be located in the community area it should be recognized that there is a hierarchy of commercial facilities which

include Regional Centres, Community Commercial Centres, Convenience Commercial Centres and Highway Strip General Commercial. It is usually the higher levels of this hierarchy (in particular the higher order comparison goods offered at regional centres) that will typically exert the greatest influence on expenditure patterns of residents in the community area. It is therefore expected that future residents of the community area will continue to shop in other centres outside of the community area and that facilities in the core area of Pefferlaw will primarily serve the community population which will not be large enough to support or warrant higher order facilities such as a department store.

In our opinion the largest commercial centre the community could expect would be a convenience commercial centre with possibly a single medium sized tenant. According to similar commercial studies, the maximum size for a convenience centre would be between 12,000 $ft^2$ and 15,000 $ft^2$ serving a population of 3,000 to 5,000 people. The types of uses which normally would be devoted primarily to convenience tenants includes, among others, small drug stores, general merchandise retailers, jug milk stores, banks or financial businesses, bakeries, gas bars and possibly eating or drinking establishments catering to nearby residents. It is likely that a commercial centre located at the intersection of Highway 48 and Regional Road 21 would not strictly be comprised of convenience type uses. Highway commercial type uses which require exposure to major arterial roads or highways where traffic flow is the highest may also be appropriate at that location. This combination of highway strip general commercial and convenience commercial uses would be appropriate since a community facility at this location would serve both drive-in clientele as well as the population of the Pefferlaw community.

### 2.3.3 c) Assumptions

It is assumed, for the purposes of this review and the projection of retail service space, that a reasonable degree of economic stability will prevail in the community area and the Town and Region during the duration of the planning period. This assumption is important as changes in income will affect retail expenditures. As an

example, food purchased in stores is not as sensitive to income differences as food purchased in restaurants. For the purposes of this review, it was also assumed that the population of the Pefferlaw community area would reach 3,105 persons at the end of the planning period. In addition, the review is premised on the belief that all available and current information on commercial facilities has been recognized and accounted for. It should also be noted that the commercial needs and requirements of the seasonal population of the community area was not factored into the retail/service space. If the factoring in of seasonal residential population was deemed to be desirable it could be accomplished by forecasting the expected amount of seasonal dwellings in the community area at the end of the planning period and then dividing by three (the average annual occupancy length for seasonal dwellings).

### 2.3.3 d) Retail/Service Space Projections

Using the assembled inventory data and the future population projections we have used a statistical approach utilizing per capita retail/service space ratios in order to estimate the amount of future commercial space that will be warranted in the Pefferlaw community area at the ultimate population of 3,105 persons.

Based on experience in other markets, normal or expected per capita space factors for each retail/service category can be applied to the ultimate population of the community area. These ratios are listed in Column 1 of Table 8. These per capita space factors, which are based on experience in other Ontario communities, have then been multiplied by the ultimate population (3,105) to derive the total space that is required by community area residents in these specific categories. This total includes the space which community area residents will support both inside and outside of the Pefferlaw community area. As expected, residents of the Pefferlaw community area will continue to shop in other areas of Town of Georgina such as Keswick and Sutton and in fact in other municipalities such as Toronto, Newmarket, Brock Township, etc. Maximum local share targets are then applied (Column 3 of Table 8) to determine the net space required locally. Those with higher local shares

**TABLE 8**
**PEFFERLAW COMMUNITY AREA**
**REQUIRED RETAIL/SERVICE SPACE AT ULTIMATE**
**POPULATION OF 3,105 PERSONS**

| Column<br>Store Type | 1<br>Average Space Req'd Per Capita (1) | 2<br>Total Sp. Req. Per Capita | 3<br>Max. Local Share Targets (2) | 4<br>Net. Sp. Req'd For Local Res. | 5<br>Plus Inflow Sp. (3) | 6<br>Total Sp. Req'd | 7<br>Less Existing Competitive Sp. (4) | 8<br>Net Demand (5) | 9<br>Typical Avg. Size of Service |
|---|---|---|---|---|---|---|---|---|---|
| A. Convenience Goods | | | | | | | | | |
| A.1 Supermarket | 3.0 | 9,300 | 85% | 8,000 | 1,200 (15%) | 9,200 | 4,900 | 4,300 | 30,000 |
| A.2 Other Specialty Food | 1.4 | 4,300 | 85% | 3,600 | 400 (10%) | 4,000 | 4,960 | (-960)0 | 500 |
| A.3 Hardware | .3 | 900 | 90% | 800 | 100 (10%) | 900 | 0 | 900 | 4,340 |
| A.4 Drugs | .8 | 2,400 | 90% | 2,200 | 200 (10%) | 2,400 | 0 | 2,400 | 6,620 |
| A.5 Liquor/Beer/Wine | .2 | 600 | 80% | 500 | 100 (10%) | 600 | 3,647 | (-3,047)0 | 3,670 |
| B. Comparison Goods | | | | | | | | | |
| B.1 Department Stores | 3.75 | 11,600 | 35% | 4,000 | N.A. | N.A. | N.A. | N.A. | |
| B.2 Other General Merchandise | .55 | 1,700 | 40% | 700 | 100 (15%) | 800 | 0 | 800 | |
| B.3 Apparel | 2.3 | 7,100 | 25% | 1,800 | 400 (20%) | 2,200 | 0 | 2,200 | |
| B.4 Household Furnishings | 2.8 | 8,700 | 25% | 2,200 | 400 (20%) | 2,600 | 1,961 | 639 | |
| B.5 Other Specialty DSTM | 1.75 | 5,400 | 40% | 2,200 | 400 (20%) | 2,600 | 4,446 | (-1,846)0 | 2,390 (Sporting Goods) |
| B.6 Selected Automotive | 1.0 | 3,100 | 50% | 1,600 | 300 (20%) | 1,900 | 5,600 | (-3,700)0 | |
| B.7 Home Improvement | .6 | 1,900 | 50% | 900 | 200 (20%) | 1,100 | 6,640 | (-5,540)0 | |
| C. Services | | | | | | | | | |
| C.1 Eating/Drinking | 3.70 | 11,500 | 40% | 4,600 | 1,200 (25%) | 5,800 | 22,402 | (-16,602)0 | 1,000 (Take-out) |
| C.2 Financial Services | 1.10 | 3,400 | 80% | 2,700 | 300 (10%) | 3,000 | 1,176 | 1,824 | 3,575 (Bank) |
| C.3 Personal Services | .90 | 2,800 | 80% | 2,200 | 200 (10%) | 2,400 | 31,717 | (-29,317)0 | 1,310 (Barber) |
| C.4 Local Office Space | 1.85 | 5,700 | 70% | 4,000 | 400 (10%) | 4,400 | 1,300 | 3,100 | 900 (Any) |
| TOTAL | 26.0 | 80,400 | | 42,000 | 5,900 | 43,900 | 88,749 | 16,163 | |

NOTES:
1. Based on estimates used in other Ontario municipalities.
2. Refers to the current trade area space, which would normally be supported locally (i.e. trade area residents only) as a percentage of the total space supported by trade area residents both inside and outside the trade area.
3. Inflow space refers to the net space or the actual space supported by people living outside of the community.
4. Effective space refers to the net space or the actual space supported by trade area residents only. Source: Reinders and Associates, 1992.
5. Reflects the 2011 projected population of 3,105 people.

SOURCE: Larry Smith and Associates Limited - Technique used in Holly Secondary Plan Study.
John Winter Associates Limited - Last column.

are those which serve a more localized market, while the more comparison oriented store types have much lower shares as stores in the higher order regional centres will have a much greater attraction for residents of the Pefferlaw community area. This space supported locally by community area residents is shown in Column 4 of Table 8.

In Column 5 of Table 8 the inflow space has been added which is the space supported by residents travelling through the community area or occasional shoppers. Column 6 indicates the total space required in the area before the effective competitive space is subtracted. The concept of effective space takes into account that a portion of the existing space within the community area is supported by residents living outside the area. The actual total inventory has, therefore, been adjusted to reflect the net effect of inflow and represents only that space supported by the population base living in the community area. To be specific, the inflow space (i.e. that space supported by purchases made in the community area by non-trade area residents) has been deducted from total space. The resulting figures are then shown in Column 7. Inflow space may be higher than normal due to the small population base of the community area. By subtracting the existing effective space from the net space required, a "Net Demand" (Column 8) for space in each store category has been calculated. Column 9 is not related to the calculation for net demand but is included for comparison purposes to show average sizes of selected commercial uses.

A review of the compiled chart reveals that given the population estimates are realized, there would be a projected need for approximately 16,000 square feet of competitive retail/service space in the Pefferlaw Community Area. Table 8 also shows that in a number of store categories and types there is significantly more existing competitive space than what is required. This excess amount of space is particularly noticeable in the services category. The reason for the partial skewing of these figures is the relatively large amount of existing commercial service space in the community area resulting from the three local marinas. In terms of

eating/drinking services, the relative large amount of space in this category is representative of the fact that the community area is partially orientated towards seasonal and tourist visitors and that the statistics include the clubhouse/restaurant of the Everglades Golf Course which is a relatively large facility. It is also important to note however that an over abundance of space for one store type does not negate the demand for retail/service space for different types of commercial uses. As well, in some categories such as department stores the space warranted is too small to necessitate the development of such facilities.

When reviewing the commercial services projection, the important columns of Table 8 to consider are the last two, "Net Demand" and the "Typical Average Size of Service". A comparison of these two columns will reveal which type of commercial facilities can actually locate in the community area. If the average size of the service is larger than the demand, then the demand is not strong enough to warrant such a use, at least not on it's own or relying upon the community population only. It should be pointed out that it is possible to combine the demand for two or more of these uses within one store. For example, the chart indicates a net demand of 2,400 $ft^2$ for drug store space. Consequently, based on the size of the population, a 6,620 $ft^2$ drug store could not survive based on business from the community area only. On the other hand, if one adds the "Net Demand" for "Supermarket" retail grocery space with the "Net Demand" for a drug store, a total of 6,700 $ft^2$ of viable commercial space could be accommodated. Although there is some demand for financial services (1,824 $ft^2$), a free standing bank would not be feasible. With respect to local office space, there is a demand for approximately 3,100 square feet or two to three units.

### 2.3.3 e) Servicing Constraints on Commercial Development

Because of the lack of municipal sewer services in the Pefferlaw community area, the primary consideration in the development of new commercial facilities is compliance with current provincial regulations governing the dilution of nitrate generated by septic disposal systems. The reason for the concern relating to nitrate

concentrations in groundwater resources, as discussed in the Hydrogeological Investigation, is the possibility of the contamination of drinking water supplies and the health risks associated with this.

For sewage discharge rates of less than 4500 litres per day a similar dilution ratio is used for commercial development as for individual residential beds. In order to conform to present Ministry of the Environment policies, sewage effluent must be mixed with 4 parts fresh water infiltration to obtain a resultant nitrate concentration of 10 milligrams/litre or less at the subject property boundaries. For those sewage flows greater than 4,500 lpd (i.e. a sewage disposal system to service a large home is often designed for 3,000 lpd), a more stringent policy is applied. Assuming a zero background nitrate concentration for the site before development, new loadings are restricted to ensure that the sewage and infiltrating precipitation mix to obtain a resultant nitrate concentration less than 2.5 mg/l (i.e. 25 percent of the difference between the background concentration and the Ontario Drinking Water Objective of 10 mg/l for nitrate) at the property boundary. This effectively increases the land area required for dilution four fold which makes new commercial development on private sewage disposal systems extremely land intensive.

Compliance with Ministry Policy is therefore highly dependent upon the estimated sewage flow rates of individual commercial uses. Generally developments which exceed the 4500 lpd are basically impractical because of the large land area required. For commercial uses anticipated to generate less than this amount the precise nature of the commercial use in terms of water usage and sewage generation must be known as this is the critical limiting factor to the size of the overall commercial development. In order to ensure compliance with provincial policy, the development proponent will have to conduct detailed site specific studies to demonstrate appropriate infiltration rates and septic designs.

### 2.3.3 f) Summary

In the review we have examined the future market potential for retail and service commercial uses in the Pefferlaw community area. We have identified that commer-

cial retail/service space of approximately 16,000 square feet will be required at an ultimate population of 3,105 persons. It is our opinion that existing commercial buildings in the core area appear to be underutilized and could and should accommodate a major portion of this demand. We have also identified a general location which we believe could be utilized to provide new commercial retail/service space. New commercial development near a major transportation corridor would benefit from pass-through traffic and would assist in the development of a commercial "node" at this location.

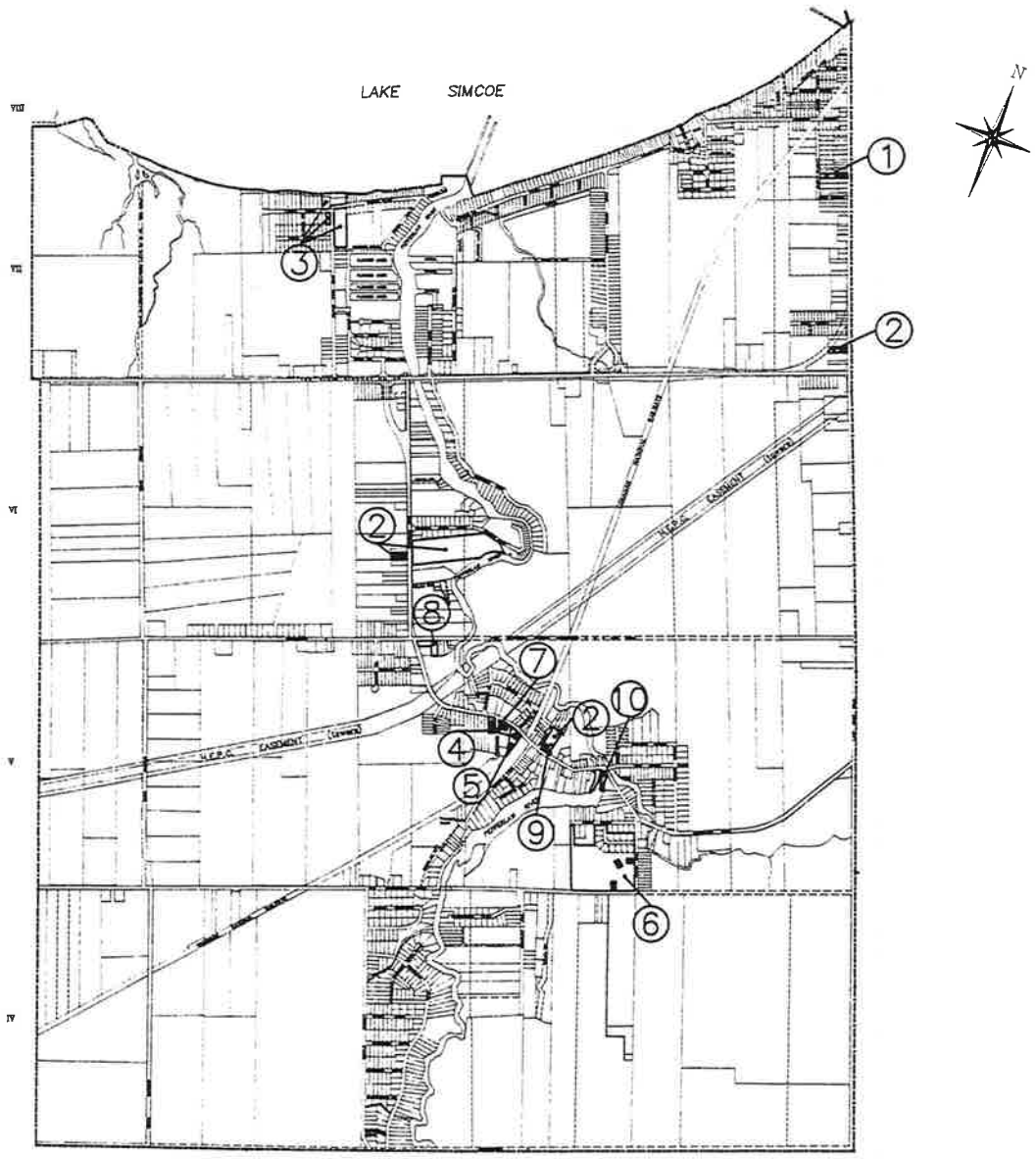
### 2.3.4 Community Facilities and Services

This section of the Background Report contains general information concerning existing community facilities (public and private), items of cultural heritage and interest, and the availability of soft services such as recreational, fire and police protection, medical, religious facilities, social and other municipal owned facilities and services available to by residents in the community area.

Consideration should be given to the quality and extent of available soft services in a community because inadequate or overutilized soft services can indirectly restrict development since increases in the number of users will eventually lead to increased municipal expenditures to accommodate growth. It is apparent that new residential development places additional burdens on the capacity of existing community facilities and services and that the extent of these burdens and costs are relevant and must be taken into consideration when evaluating proposed growth in the community.

### 2.3.4 a) Community Facilities

Pefferlaw area residents are geographically close or closer to community facilities and services situated in Beaverton, Cannington and Sunderland, than to many similar facilities and services available within the Town of Georgina and the Region of York. Alternatively, residents of Brock Township in the Region of Durham located to the east utilize some of the services provided in the community area.




# PEFFERLAW SECONDARY PLAN

## COMMUNITY FACILITIES

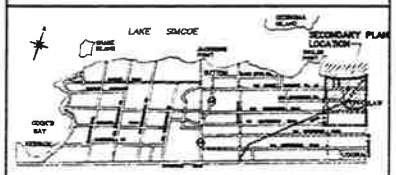
TOWN OF GEORGINA

FIGURE 9

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- (1) – PORT BOLSTER COMMUNITY CENTRE
- (2) – CHURCHES AND RETREATS
- (3) – HOLMES POINT CONSERVATION AREA
- (4) – HEALTH CENTRE
- (5) – POST OFFICE
- (6) – SENIOR CITIZEN'S CENTRE (RIXON MANOR), COMMUNITY CENTRE, NURSERY SCHOOL, PUBLIC LIBRARY, BASEBALL & SOCCER FIELDS
- (7) – ARC INDUSTRIES (SERVICES FOR THE MENTALLY HANDICAPPED)
- (8) – McFADDEN MEDICAL CLINIC
- (9) – FIRE STATION
- (10) – PEFFERLAW BROOK PARK

## KEY MAP




REINDERS

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One of the most important community facilities in the area is the Morning Glory Public School. This educational facility is located on the western boundary of the community area on the north side of Highway 48 on a 4.7 hectare site (11.6 acres) adjacent to the Morning Glory swamp. The school has indoor resources which include a library/resource centre and a music room and stage. Outdoor facilities include soccer fields (2), softball diamonds (2), basketball and volleyball courts, tetherball posts and play structures. This facility, being located on a provincial highway in a non-residential area without pedestrian linkage is essentially accessible by automobile only.

The main focus for soft services in the community area is the Pefferlaw Community Park. The major facility within the park and the entire community area is the Community Hall. This facility has a stage, full kitchen, senior citizens room and features a maximum capacity of 350 people in the main hall and a smaller separate meeting room with a capacity of 125 people. The land area occupied by the structure is approximately 929 $m^2$ (10,000 $ft^2$) in size. The community hall is actively managed by the Pefferlaw Lions Club and is made available to host a number of community functions. The other main community facility situated within the park is the library. This building is approximately 1,740 $ft^2$ in size, possesses 6,000 books and has a circulation of approximately 14,000. Outdoor facilities in the park include one lighted softball diamond, three (3) soccer pitches, one (1) creative play structure, two (2) tennis courts, one (1) basketball court and one (1) picnic shelter. The park also provides passive open space and vacant areas which may in the future be utilized for the location of tennis courts, lawn bowling greens and fitness trails with exercise nodes. Community facilities also include the Port Bolster Hall located on Lake Ridge Road which has a maximum capacity of 75 persons.

### 2.3.4 b) Community Services

Police protection services are provided by the York Regional police force and fire protection services are provided by a volunteer community fire department and the fire station located in the core area. Medical and dental services are provided in the

community at the McFadden medical clinic and the Medical Centre located in the core area. A retirement and nursing home, Rixon Manor, is located adjacent to the Pefferlaw Community Park. Daycare services are available from the Little Sprout nursery school situated in the community centre. The community area is served by three churches, the Congregational Christian, Cookes United and the Church of the Nazarene, which also has an adjacent conference centre and campground. Public elementary educational services are provided in the community area by the York Region Board of Education at Morning Glory Public School. The York Region Roman Catholic Separate School Board has no existing or proposed school facilities in the Pefferlaw area. Secondary school educational services are provided by the Sutton District High School. In terms of social activities, the community has an active Lion's club, Seniors Club, Snowmobiling Club, Boy Scouts, and Horticultural Society which sponsor and provide Bingo and participate in arts & crafts, bridge and exercise programs. Other social and educational activities include a band and recreation and educational courses provided by the Boards of Education.

### 2.3.4 c) Parks, Recreation and Open Space

Generally the Town of Georgina and the community area of Pefferlaw are well provided for in terms of parkland and open space. At the present time there is approximately 137.5 hectares (340.3 acres) of developed parkland in the municipality which equates to approximately 5.1 hectares (12 acres) of parkland for every 1,000 persons. This is in excess of the minimum standard of 4 hectares of municipal parkland for every thousand (10 acres per thousand) residents. When lands owned by other government agencies and public bodies such as the Lake Simcoe Conservation Authority, York Region Public and Separate school boards, Region of York forests and provincial parks and park reserves are included with the municipal parkland, there is a total of 1,116 hectares (2,758 acres) of public open space available to residents of the Town. The ratio of 41.6 hectares (103 acres) of public open space for every thousand residents is well above the recommended minimum standard of 8 hectares (20 acres) per thousand residents.

Within the Pefferlaw community area there is approximately 30 acres of municipal parkland situated in two municipal parks and two parkettes. These parks are the Pefferlaw Community Park, the Holmes Point Park, the parkette in which the Pefferlaw Dam is situated and a small park in Port Bolster. The Pefferlaw Community Park, centrally located in the core area is a District type park of approximately 23 acres in size which features outdoor activity facilities (as mentioned previously), as well as a passive area. The Holmes Point park is a community type park of approximately 5 acres in size, with a beach and picnic area, playground, and restaurant located nearby. The Pefferlaw River Dam parkette is a small passive neighbourhood type park located in the core area of the community and the Port Bolster parkette is of a similar nature being approximately 1.2 acres in size.

In terms of private recreational facilities, the community has three marinas and an 18 hole golf course. As mentioned previously the Town is well endowed with public open space and within the Pefferlaw community area in particular there is a significant amount of crown land and publicly controlled forest which is available for non-intensive and passive recreational use. The Recreation Master Plan for the Town, completed by Sesquaig Inc. (not adopted), made a number of suggestions concerning the development of recreational infrastructure and recommended that cross country ski trails be developed in the York Regional forest in the Pefferlaw and Udora areas. Snowmobiling, a somewhat conflicting recreational use was recommended to be restricted to utility corridors, rivers, Lake Simcoe and private lands. The Plan also recommended that a 8 rink lighted lawn bowling green and four all weather tennis courts be established at the Pefferlaw Community Park.

### 2.3.4 d) Cultural Heritage

The Archaeological Heritage of the Pefferlaw Community area is generally little known and unsurveyed. The Pefferlaw community area, however, does contain two known archaeological sites generally situated on either side of the Pefferlaw River. One site is of settlement size and the other is a burial site. The cultural matrix of the settlement site is characterized as middle woodland with Point Peninsula and

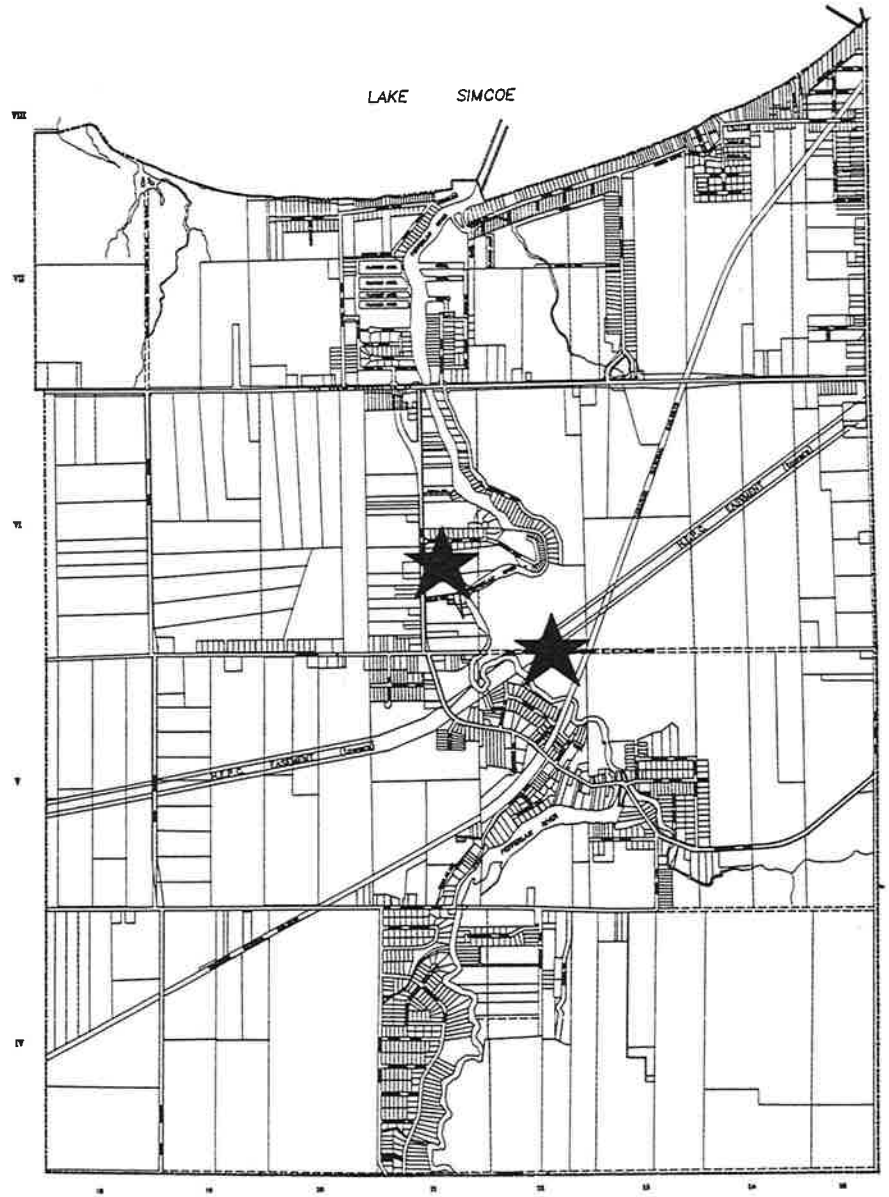
Owascoid cultural components. The presence of the two sites should not be considered an exhaustive list since archaeological sites are only reported as they are discovered by licenced archaeologists in the course of their activities in the field. Since it is demonstrated that there is potential in the Pefferlaw community area for the recovery of archaeological resources in unspecified areas it is important for policies in planning documents to require an archaeological survey before consumptive land uses are permitted to occur.

In terms of Architectural Heritage the core area of the Pefferlaw community shows an interesting mix of historical styles. We would suggest that members of the community be encouraged to participate in an assessment of the architectural resources of the core area. Planning policies could be implemented by the municipality which would require development or redevelopment in the core area to take into consideration and design buildings or structures which are sympathetic to the existing community style of the core area.

### 2.3.5 Transportation

The present road pattern of the Pefferlaw community area is the result of two different forms of development. In order to accommodate agriculture and other forms of rural development, roads were developed in accordance with the concession and sideroad grid network common to southern Ontario. Roads were also developed along the Pefferlaw River and the Lake Simcoe shoreline areas in order to service and permit seasonal residential development.

Roads within the community area are classified in the accompanying schedule according to their significance to the community in the handling of various volumes of traffic, ownership status and their relationship to the Provincial highway system and the Regional Road network.




# PEFFERLAW SECONDARY PLAN

## AREAS OF ARCHAEOLOGICAL POTENTIAL

TOWN OF GEORGINA

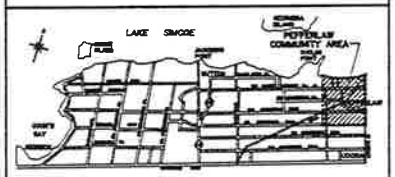
FIGURE 10

## LEGEND

— — — PEFFERLAW COMMUNITY AREA

★ AREA OF ARCHAEOLOGICAL POTENTIAL

## KEY MAP




REINDERS

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### 2.3.5 a) Road Classification System

The following highway and road classification system will be utilized in the formulation of special policies concerning roads for the Secondary Plan of the Pefferlaw community area.

(1) Arterial Roads

Arterial roads provide the primary means of facilitating large volumes of traffic flow between traffic generating areas. These roads may be 2 to 4 lanes wide, generally provide limited land-access to abutting properties and are further divided into the two categories of major and minor.

(i) Major Arterial - include major roads with a width in excess of 35 metres. In the community area an example of this type of road would include Provincial Highway 48 and Regional Road 23.

(ii) Minor Arterial - include Regional roads of lesser significance with right-of-way widths of 30 metres. In the community area these roads include Pefferlaw Road (Y.R. # 21), Weir's Sideroad (Y.R. # 81) and Old Homestead Road (Y.R. # 79).

(2) Collector Roads

Collector roads are intended to collect traffic from local roads and transfer it to arterial roads as well as to distribute arterial traffic to local roads. These roads are two lanes with a right-of-way width of 20 metres which tend to discourage through traffic and provide land-access to abutting property. On-street parking should be allowed except in locations where it will create a conflict between pedestrian and vehicular traffic. When new collector roads are being developed sidewalks may be provided, subject to anticipated pedestrian traffic and the requirements of the Town. Collector roads in the community include Station Road, Maple Street, Concession Road 6, Holmes Point Road, Riverview Beach Road, Church Street and Irving Drive.

(3) Local Roads

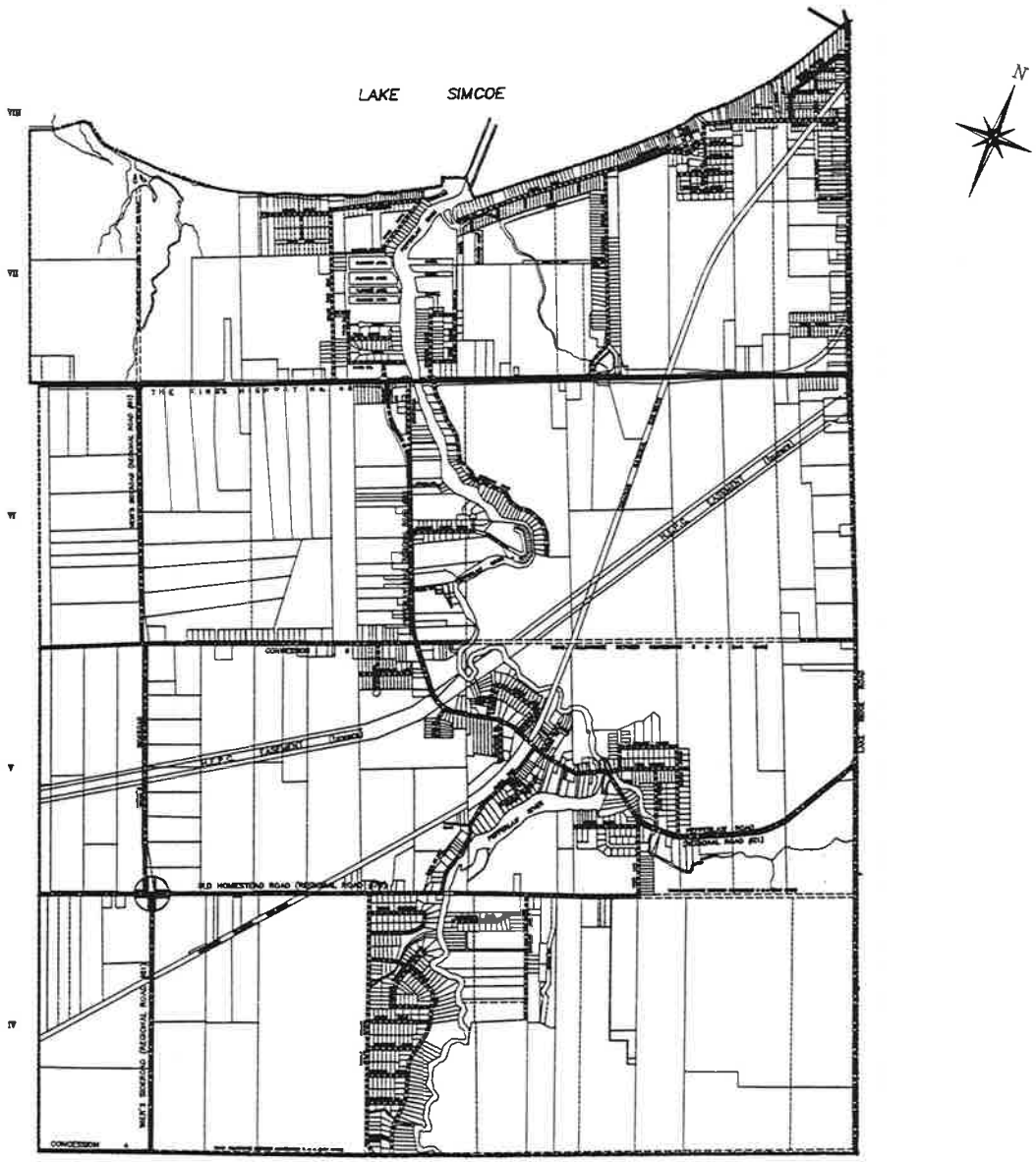
Local roads are primarily meant to be utilized for residential land-access of adjacent abutting properties. They are intended to discourage through traffic and feature a right-of-way width of 20 metres. On-street parking should be allowed except in locations where it will create a conflict between pedestrian and vehicular traffic and problems with snow removal. Sidewalks may be required for new local roads, subject to anticipated pedestrian traffic and the requirements of the Town. The majority of roads within the community area are local roads.

### 2.3.5 b) Traffic Circulation

The majority of traffic volume moving through the community area moves along Provincial Highway 48 in an east-west direction and Regional Road 23 in a north-south direction. This traffic is well separated from local traffic which is centered on Pefferlaw Road (Y.R. # 21). Pefferlaw Road is connected to both of the above noted roads and acts as a minor arterial for local traffic in the core area. A significant number of the local roads in the core area are streets which directly access Pefferlaw road and culminate in dead ends or cul-de-sacs. A road network with a large number of dead ends is not desirable from a traffic circulation, winter maintenance or planning perspective. In order to improve the road network in the core area it is recommended that the overall number of dead end roads be reduced. This could be achieved to some extent through the incorporation and utilization of existing dead end streets in the design of future plans of subdivision.

The road network of the northern portion of the community area (Lake Simcoe shoreline - Pt. Bolster) is limited in terms of access and circulation, and in some instances has poor alignment and substandard right-of-way widths. Problems with some of the roads in this area are the result of the ad-hoc and unplanned manner in which they were developed over time. Access to Lake Simcoe shoreline residential areas is restricted to Lake Ridge Road (R.R. # 23) and two collector roads running north from Highway 48. The Pefferlaw River divides and isolates residential areas located on either side of the river in the Holmes Point Road and Riverside Drive areas. The road network of the eastern portion (Port Bolster) of the shoreline residential area is not connected with other residential areas and traffic circulation in this area is limited by the substandard right-of-way widths and poor road alignment of streets such as Irving Drive and Bolster Lane. Future development in this area is clearly limited by the lack of an efficient and properly aligned road which could act as a local collector.

Alignment and right-of-way problems exist throughout the community area and it is recommended that a traffic study be undertaken to review the deficiencies of the




# PEFFERLAW SECONDARY PLAN

## ROAD CLASSIFICATION MAP

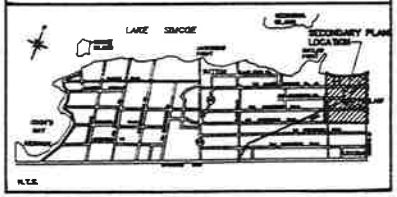
TOWN OF GEORGINA

FIGURE 11

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- PROVINCIAL HIGHWAY
- MINOR ARTERIAL
- COLLECTOR ROAD
- LOCAL ROAD (ASSUMED)
- LOCAL ROAD (UNASSUMED)
- PRIVATE ROAD
- INTERSECTION IMPROVEMENTS
- SUGGESTED AREA OF ROAD WIDENING

## KEY MAP

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local road network and recommend improvements and solutions. This is beyond the scope of the present review, however traffic circulation problems appear to exist along Irving Drive, Station Road and Bolster Lane. Consideration should also be given by the municipality to the extension of Old Homestead Road by the building of a bridge across the Pefferlaw River at this location. This would decrease the volume of traffic on Station Road and Pefferlaw Road and would encourage residential development to locate in the eastern part of the community by increasing the accessibility of the area. The encouragement of residential growth in this area of good soils, community facilities and open space is in conformity with the recommendations of this report. The volume of traffic on Pete's Lane would be expected to increase if that road became a collector road, however, an extension of Old Homestead Road east and then north to link up with Pefferlaw Road would preclude this occurrence.

### 2.3.5 c) Identified Intersection Improvements & Sight Triangle Requirements

According to correspondence received from the Regional Municipality of York, road improvements are not currently planned within the community area. It is anticipated, however, that at some point Old Homestead Road (Y.R. # 79) and Weir's sideroad (Y.R. # 81) will be improved to a paved surface. A jog elimination is proposed for the intersection of Old Homestead and Weir's sideroad. Another improvement identified for Old Homestead Road is a possible future grade separation at the C.N.R. crossing east of Weir's sideroad. Sight visibility triangle size requirements vary from 15.0 metre triangles for local and regional road intersections to 30.0 metres for Regional road intersections.

## 3.0 DEVELOPMENT PRESSURE AND POTENTIAL

### 3.1 General Development Suitability and Constraints

The purpose of this section of the Background Report is to review proposed and anticipated development within the Pefferlaw Community area and to evaluate settlement capacity and infill potential in terms of the overall future "vision" of the community.

As alluded to above, the nature of the future Pefferlaw Community depends upon the vision and goals of the planning documents guiding the long term growth and development of the area. The goal of the Pefferlaw Secondary Plan is to permit and encourage the continued development of an environmentally sustainable community in the context of sound planning principles. The vision for the Pefferlaw Community at the end of the planning period would be that of a small compact low density rural centre situated in an area of limited agricultural potential adjacent to extensive natural and open space areas. Multi-lot development in the community would be limited to and concentrated in the better drained silty sand and sand soil areas abutting the existing residential centre. Limited residential infill would be permitted adjacent to and within the existing residentially built up area situated in the poorer soils area located primarily along the lakeshore.

Services would continue to consist of private sewage disposal systems and individual water systems as contemplated in Section 6.3.1.4 of the Official Plan. Hydrogeological assessments and communal water and sewage feasibility studies would be required by the municipality in conformity with the Regional policy on rural communities servicing when major new multi-lot development proposals are being reviewed and contemplated. Within the community area new development would generally be low density in nature and limited to preferred development areas and consist mainly of single family dwellings occuring on larger lots as recommended by the Hydrogeological Investigation. Seasonal residential uses would generally

continue and recreational activities would be encouraged to expand. Dry Industrial as well as Commercial areas would be encouraged to locate within the community, both in the existing core area and in certain locations along the major traffic corridor. Further estate residential type multi-lot development located in primarily rural areas, as well as any development of environmentally sensitive, hazard lands or areas of significant resource potential would not be permitted.

At the present time, provincial ministries and other regulatory agencies are in the process of developing more exacting planning and environmental guidelines and regulations governing all forms of development, especially when it is proposed to be based on private sewage disposal systems and individual water supplies. These policies are designed to promote good planning practice and environmentally sound development as well as protect existing environmental features such as wetlands and groundwater resources. It is generally recognized that these policies may serve to limit the extent of growth possible in areas without full municipal services. In the case of the Pefferlaw community area there is a limited amount of growth anticipated and an extensive Hydrogeological review showing no existing groundwater pollution problem. In our opinion it is evident that growth such as it is contemplated for the Pefferlaw Community Area in this section is indeed sustainable and can be accommodated within the Community according to good planning principles during the planning period.

### 3.1.1 Summary of the Hydrogeological Investigation

As mentioned previously, Terraprobe Limited, conducted a Hydrogeological and Geotechnical Investigation of the community area which reviewed the quality and quantity of the existing groundwater aquifers and resource in general. The Investigation also examined the potential for a communal well, evaluated general soils and drainage conditions and provided information concerning the development suitability and ultimate settlement capability of the community area. Further detailed information concerning existing aquifers, groundwater flow directions, water supply and domestic sewage disposal conditions is contained within the Hydrogeological

Investigation. The following general conclusions were obtained as a result of the Hydrogeological Investigation and are listed below:

- The water well records indicate that sufficient groundwater supply for individual supplies can be obtained from wells constructed in the confined overburden aquifer and/or the rock.
- There does not appear to be a regional problem regarding the quality of drinking water from existing drilled wells. The health related parameters generally meet the Ontario Drinking Water Objectives. However, several aesthetic parameters such as iron, hardness, turbidity, and colour either exceed The Drinking Water Objectives or are slightly elevated.
- Sodium levels exceed the recommended limit of 20 mg/l in a number of wells which could pose concerns for consumers with Congestive Heart problems and/or hypertension.
- Communal wells may also be feasible. However, given the aesthetic water quality problems (iron,hardness), treatment of groundwater would likely be required. A surface water treatment system drawing from Lake Simcoe may be an appropriate alternative to communal well systems.
- It is anticipated that fully to partially raised sand beds will be required in most of the Plan Area because of high water table conditions. Based on dilution of sewage from infiltration only and assuming an infiltration rate of 200 mm/year, a minimum lot size of 0.7 ha (1.7 acres) is recommended. The Regional Municipality of York, Rural Communities Servicing Study 1988, recommends minimum lot sizes of 0.4 ha.
- For proposed developments, adjacent to existing development, there should be rigorous testing to ensure that the proposed development will not impact existing development and to determine background water quality information.
- Development of the existing wetlands for on-site sewage disposal should not be permitted.
- A high groundwater table and sandy soil conditions present some geotechnical constraints. These include the difficulty in excavating below the water table resulting in the need for dewatering or raised basements for development.
- Based on the entire study area (ie: 2500 ha), and an infiltration rate of 200 mm per year, approximately 1,250,000 cu.m. of domestic sewage could be discharged per year. This is equivalent to approximately 3,425 residential dwellings.

### 3.1.2 Development Suitability

The Hydrogeological Investigation of the community assessed the suitability of the Pefferlaw area for the acceptance and disposal of sewage effluent from domestic septic tank and field systems. It is the intent of the Secondary Plan document to encourage future development to locate in those areas of the community that possess the greatest natural suitability for the development of private sewage disposal systems. Two general constraints were identified to the proper functioning of septic tile fields, these being adequate percolation rates and a high water table.

From information collected by the excavation of auger holes throughout the community area it appears that the study area is generally underlain by a thin veneer of sand overlying silty sand to fine grained silt and clay soils. An area of deeper sand which extended to the full depth of the auger holes (1.3 metres) was identified in the south half of the study area. In some parts of the community area the sand veneer is not present and organic and peat soils were present at the surface. The location of the deeper sand area and other surficial soil types is shown on the accompanying Soil Conditions and Water Levels map. The native sand soils found mainly in the southern quadrant of the community area were thought to be generally acceptable for use in the grading of the tile bed areas.

In the majority of auger holes drilled in the community the water table was found at depths of less than 1.5 metres. In order to operate efficiently septic tile fields must be situated in well drained areas free from flooding, sheet flow and periodic inundation. The Hydrogeological Investigation anticipated that in order to maintain the minimum separation distance between the watertable and the tile field, due to the limited thickness of the sand layer and the generally high watertable, fully or partially raised beds would likely be required throughout the community.

The area which appears to be most suitable for the development of individual sewage disposal systems is the silty sand/sand soils area located in the southerly portion of the community area. This area is thought to generally possess the deepest layer of sand, have acceptable percolation rates and be relatively well


# PEFFERLAW SECONDARY PLAN

## SOIL CONDITIONS AND WATER LEVELS

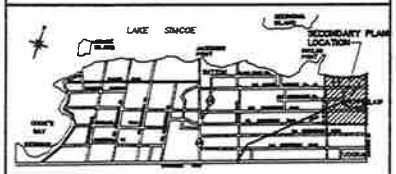
TOWN OF GEORGINA

FIGURE 12

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- ● – ORGANIC
- ▲ – SANDY SILT / CLAYEY SILT
- ■ – SILTY SAND / SAND
- #26 – NUMBERING SYSTEM
- 0.28m – DEPTH OF WATER TABLE
- – EXISTING CONTOUR (0.5m interval)

## KEY MAP

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drained. Therefore the location of multi-lot development is preferred in those areas of the community which have been identified as possessing silty sand/sand soils. Site specific testing and detailed studies as recommended by the Hydrogeological Investigation and required by the Region and the M.O.E. must also be undertaken to determine and verify the suitability of properties proposed for development.

### 3.1.3 Available Settlement Capacity

An important objective of the Hydrogeological Investigation was also to determine and identify the thresholds and limits of environmentally sustainable growth according to current M.O.E. policies and standards. Underlying the delineation of the ultimate growth threshold was the assumption that during the planning period existing and future development would continue to utilize fully private services. It is intended that development would only be allowed to occur if the policies and requirements of the Secondary Plan were met, the identified ultimate settlement capability of the community was not exceeded and the cumulative environmental impact was sustainable. In the future, after an increase in the settlement of the community occurs and before additional new development would be permitted, a proponent will have to conduct a Hydrogeological Investigation to examine the current status of the community area in terms of groundwater pollution and the anticipated cumulative impact of any proposal. The developer would alsd be responsible for investigating the feasibility of providing communal water and sewage services as required by the municipality or the province. At the point where development is not sustainable in terms of meeting provincial environmental policy, development would become capped until an acceptable servicing strategy was developed or full municipal services could become available. The logical staging of development and servicing will be considered and determined through the consideration of plans of subdivision.

The scenario as outlined above generally conforms with the revised Region of York Policy on Rural Communities Servicing. This policy was adopted in 1991 and states that in no case shall any settlement area be permitted to grow in excess of 5,000

persons or the population identified in the settlement capability study without a commitment to provide full municipal services. As well as identifying an ultimate population, the settlement capability study was required to establish appropriate development densities and specific lot sizes and standards. Terraprobe Limited in their Hydrogeological Investigation recommended a minimum lot size of .7 hectares (1.7 acres).

Utilizing the entire 2500 hectares of the community area for dilution and infiltration purposes (it can be argued that since large segments of the community area will never be developed i.e. wetlands, regional forest etc., these areas will always be available for dilution and infiltration purposes), the ultimate settlement capacity of the community area was calculated to be the equivalent of 3,425 dwellings. The existing number of dwelling units in the Pefferlaw community area according to the 1990 assessment data for subdivisions 05 and 06 was 1,207 units. The available settlement capacity was calculated by subtracting the number of existing dwelling units and the estimated current industrial and commercial components (10 % of the number of existing dwellings) from the estimated total ultimate settlement capability of the study area (3,425 dwellings). Therefore approximately 2,100 dwelling units or an additional 5,880 persons (2,100 x 2.8 p.p.u.) could theoretically still be accommodated in the community area without exceeding the Reasonable Use of Groundwater policy of the Ministry of the Environment for the nitrate loading of the watertable.

The population projections for the Pefferlaw community forecast that by the year 2011 between 2,796 and 3,105 persons could reasonably be expected to live within the Pefferlaw community area. Population growth of the community, similar to that projected by this report, could result in an additional 172 to 283 occupied dwelling units (not taking into account the component of residential demand fulfilled by the conversion of existing seasonal residential dwellings). The anticipated population growth of the Pefferlaw community during the planning period would therefore reduce the total available settlement capacity by approximately 8 to 13 percent.

Taking the above into account it is possible to conclude that the community area is of a sufficient size and settlement capability that it has the capacity to accommodate anticipated growth on private water and sewage services during the planning period.

### 3.1.4 Planning and Regulatory Constraints

As mentioned in the previous section, approximately 2,100 additional dwellings could theoretically be developed in the community area over time in conformity with the Reasonable Use of Groundwater policy of the Ministry of the Environment. This number and the ultimate settlement capability of the community area was arrived at by only taking into consideration the maximum number of dwellings and private sewage disposal systems permitted according to current M.O.E. policy. Upon further examination the actual settlement capability of the community area is much lower since other factors substantially reduce the amount of land available for future residential development.

In practice, however, large areas of the Pefferlaw community are undevelopable or not available for development for a variety of reasons. These areas consist of those portions of the community that are presently built up, designated as extractive resource areas, hazard lands, wetlands, part of York Regional Forest lands, and lands utilized by transportation and communication facilities. As shown in Table 1, the Existing Land Use Summary, the above noted land use classifications comprise approximately 1,081 hectares or 42.5 % of the Pefferlaw community area. In addition, it is the intention of the Secondary Plan document to generally direct new multi-lot development to those areas possessing silty sand/sand soils. The portion of the community area possessing these soil characteristics and not presently built up or part of York Regional Forest Lands is approximately 540 hectares or 21 % of the total community area. If this area was totally developed for low density residential use with a minimum lot sizes of .7 hectares, approximately 700 residential dwellings could be accommodated.

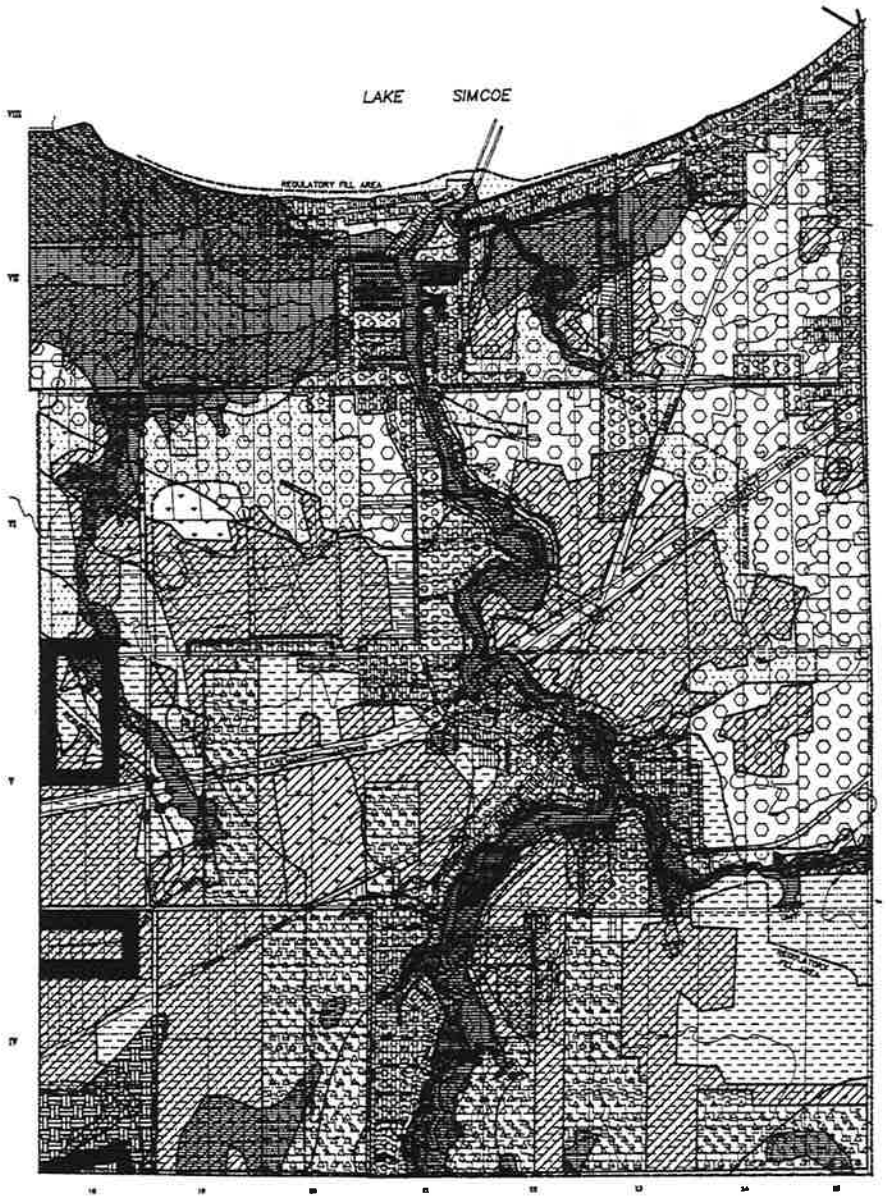
Other planning policies and practices such as maintaining the separation distances of the Agricultural Code of Practice and the normal practice of clustering future residential development adjacent to existing built up areas further restricts the amount of land that would be considered suitable for development. Figure 12, the Composite Map of Natural Features and Land Ownership, superimposes a number of typical planning concerns that must be taken into consideration when evaluating settlement capability and balancing growth and development with environmental and resource considerations.

## 3.2 Proposed Residential Developments

As is evident from a review of Figure 13, development is proposed in an ad-hoc fashion throughout the entire community area. The majority of these proposals are located within the poorer soils area of the community and have not had concept development plans submitted to the municipality for review. As mentioned previously it is the intention of the Secondary Plan document to guide future residential development towards more appropriate locations in terms of general soil conditions (away from organic and clay and silt soil areas), land use planning constraints (floodlines, resource areas, wetlands and regulatory fill areas, government owned lands etc.) and general planning principles. The residential proposals situated in the satisfactory silty/sand and sandy soils area as delineated by the Hydrogeological Investigation include the following:

- **Wolske**
  No detailed information submitted to the municipality concerning the proposal. The site is located within the preferred development area next to existing residential development along Station road. It is bisected by the Canadian National Railways Secondary mainline and would require safety berms and possibly noise attenuation features incorporated into the subdivision design. A road crossing over the railway line in this location should be examined in order to increase the viability of traffic circulation of this portion of the community area.

- **Morgan & Davis**
  No information submitted on the proposal. Designated Rural in the Official Plan, this site is not located within the preferred development area or adjacent to any existing residential development. It has been identified as




# PEFFERLAW SECONDARY PLAN

## COMPOSITE MAP OF NATURAL FEATURES & LAND OWNERSHIP

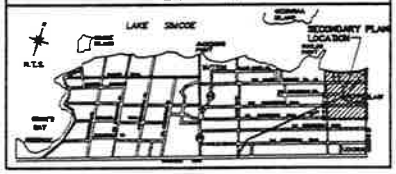
TOWN OF GEORGINA

FIGURE 13

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- REGULATORY FLOOD LINE
- REGULATORY FILL LINE
- CONTOUR (5m interval)
- FLOOD PLAIN AREA
- REGULATORY FILL AREA
- AGREEMENT FORESTS
- PRODUCTION FOREST AREA
- YORK REGIONAL FOREST, PEFFERLAW TRACT
- ORGANIC (PEAT, TOPSOIL, MUCK >08.m)
- FINE GRAINED SOILS (IE: SILT, CLAY)
- SILTY SAND / SAND
- RESOURCE PROTECTED IN OFFICIAL PLAN
- SECONDARY DEPOSITS
- ABANDONED PITS
- DEVELOPED AREA
- WETLANDS

## KEY MAP

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an area of aggregate potential and the resource has been protected by the Official Plan.

- **Vanderbrook & Rushton**
  A Draft Plan has not been received for the site although a consultant has conveyed to the municipality the intention of the owners to develop the properties. The site is 51 acres in size and is bisected by a powerline corridor. The soils of the site are characterized as silty/sand and sand. The site has been identified as a preferred development area and is bordered to the north by residential homes. The portion of the site south of the Hydro easement has been identified by the Hydrogeological Investigation as having muck soils and therefore is not suitable for development.

- **Kibble**
  Presently designated RURAL in the Official Plan. Located within the proposed preferred development area the site is thought to possess silty/sand sand soils. Development of the site could possibly proceed by severance and development agreement because of the limited number of potential lots. The existing municipal road right of way would also have to be upgraded to permit development to occur. An existing residential area is located south of the site. A portion of the western part of the property is located within the Pefferlaw River flood plain and is therefore not suitable for development.

- **Kesbro Inc. - Phase 1 (19T-91-032)**
  Designated URBAN RESIDENTIAL in the Official Plan, 23 lots were proposed in the Draft Plan submitted in 1976 (M.M.A File No. 19T-86-090). The proposed Secondary Plan policies would reclassify this area as RESIDENTIAL. A revised proposal for 28 lots submitted by Derkowski-Payne incorporates more land into the proposal for a total of 14 hectares with the proposed lots averaging 1 acre in size. In view of the recommendations of the Hydrogeologicial report, it is our opinion that the minimum lot size should take into consideration the recommended .7 hectare lot size.

- **Quesenberry (19T-87-090)**
  Designated LAKESHORE RESIDENTIAL in the Official Plan, this plan has been submitted to the M.M.A. and is draft plan approved. The proposed Secondary Plan policies would redesignate this area as RESIDENTIAL. It is our understanding that 3 residential lots were recently approved for the site.

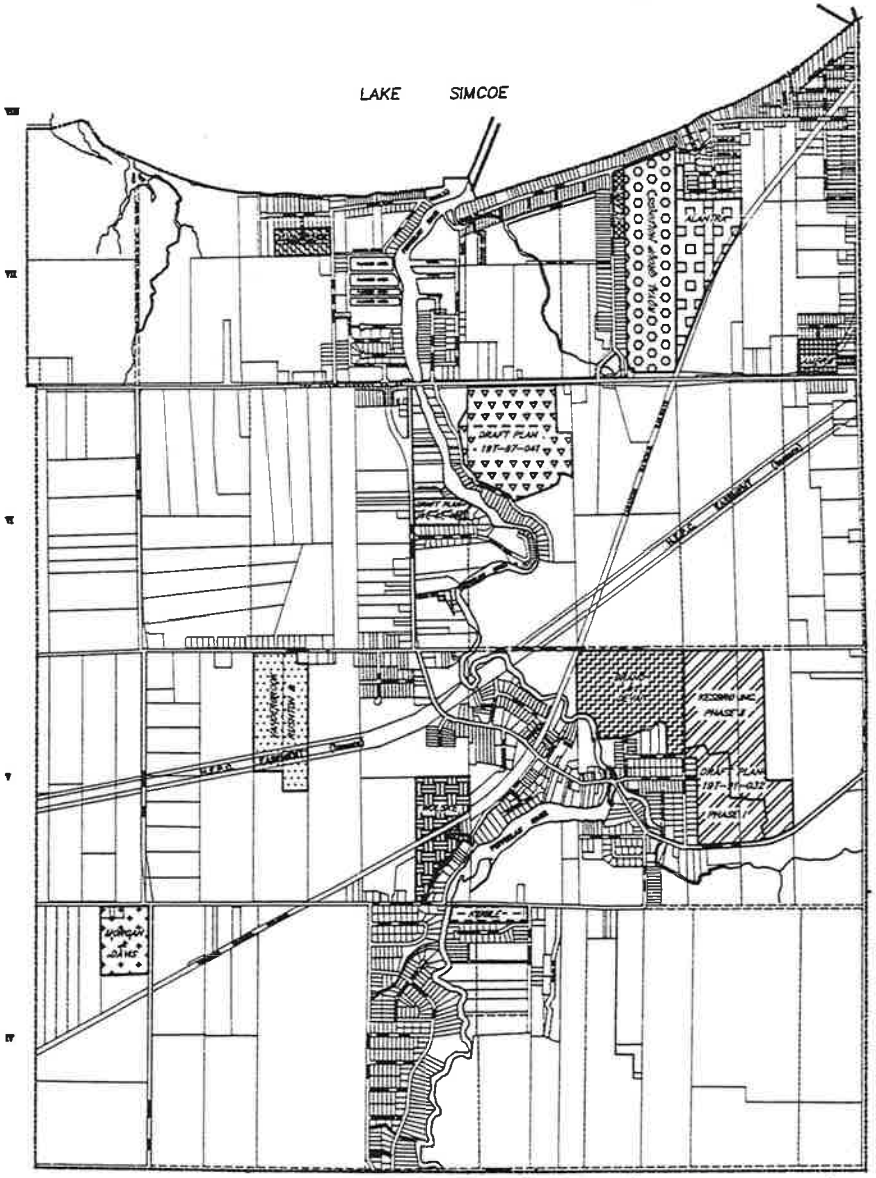
The development proposals in the area identified by the Hydrogeological Investigation of the community area as possessing poorer soils are listed below:

- **Pefferlaw Estates Subdivision (19T-87-041)**
  Presently designated ESTATE RESIDENTIAL in the Official Plan, the property consists of frontage along Pefferlaw River and a proposed subdivision featuring 39 estate lots of approximately 1 acre or .4 hectares each. The proposed Secondary Plan policies would redesignate the entire landholdings RESIDENTIAL. It is our understanding that the southern portion of this designated area is not within the present plan of subdivision. This area could possibly be placed within the RURAL designation. The subject site is located adjacent to the existing residential strip located along the east side of the Pefferlaw River and immediately south of the Highway 48 corridor.

- **Kesbro Inc. - Phase 2**
  Designated RURAL in the Official Plan, the second phase of the Kesbro proposal is 33.35 hectares in size, mostly clear of trees and was formerly used for agricultural purposes. The northern portion of the site is located within the regulatory fill area and has a drainage swale running across it from the east to the west towards the Pefferlaw River. It is presently situated east of the existing built up area of the community and north of Regional Road # 21.

- **Brand & Deval**
  The site is predominantly tree covered, designated RURAL in the Official Plan and is approximately 26.5 hectares (65.7 acres) in size. The site is bisected by a narrow strip of regulatory fill area in the northern portion of the property. The property is located immediately north of the existing residential area and access to the site would be from Adelaide Street.

- **Ampro**
  Designated RURAL in the Official Plan, the site is approximately 12 acres in size and is located on the boundary between the Town of Georgina and the Township of Brock. It is situated on the north-west corner of Highway 48 and Lake Ridge Road (Durham Regional Road # 23) and development of this site could be characterized as a small infill type development. Depending on desired lot sizes the property has the potential to produce only a small number of lots. The highest and best use for this particular site in our opinion would not be for residential use but rather for a light industrial or highway commercial land use. This type of land use would be compatible with existing industrial and commercial development situated on the other three corners of the intersection.




# PEFFERLAW SECONDARY PLAN

## PROPOSED RESIDENTIAL DEVELOPMENT

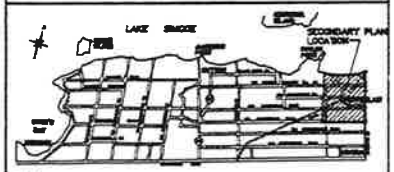
TOWN OF GEORGINA

FIGURE 14

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- KESBRO INC. (DRAFT PLAN 19T-91-032)
- AMPRO
- ROYAL GROUP HOLDINGS (CABADING)
- RUSHTON & VANDERBROOK
- BRAND & DEVAI
- PEFFERLAW ESTATES (DRAFT PLAN 19T-87-041, DRAFT APPROVED)
- MORGAN & DAVIS
- KIBBLE
- WOLSKE
- CLARK
- KUCHARCHUK
- ALANTRA MANAGEMENT INC.
- QUESENBERRY (DRAFT PLAN 19T-87-090)

## KEY MAP

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- **Alantra**
  No information has been received to date on this proposal.

- **Royal Group Holdings**
  No detailed information from the applicant has been submitted to the municipality for review.

- **Clark**
  The site is located on the west side of Riverview Beach Road which is a municipal road with residential uses presently accessed from it. Development would be confined to those lands fronting onto this road and could proceed by way of severance and development agreement. It is estimated that approximately 4 lots could be created according to present standards.

- **Kucharchuk**
  The site is presently designated RURAL by the Official Plan. The site appears to have a undeveloped plan of subdivision on it and may have been previously subdivided into what would now be considered undersized lots. The site is situated in an area of poor soils and is unsuitable for development because of the high water table and clay and silt soils. As well, the site is situated in an area adjacent to, and is possibly part of the provincially significant Morning Glory Swamp Class 3 wetland.

## 3.3 Development Potential

In addition to development suitability, settlement capability, and provincial regulations and guidelines, the development potential of the community is also dependent upon the municipal planning policies and regulations in effect. The development potential of the community, as referred to in this section, refers to the total potential number of residential lots that could conceivably be granted approval during the planning period if the recommended policies are adopted. The intent of the Secondary Plan document would be to generally discourage future multi-lot residential development by Plan of Subdivision in the poorer soils areas of the community, as defined by the Hydrogeological Investigation, and guide it towards those areas deemed to be most suitable and appropriate.

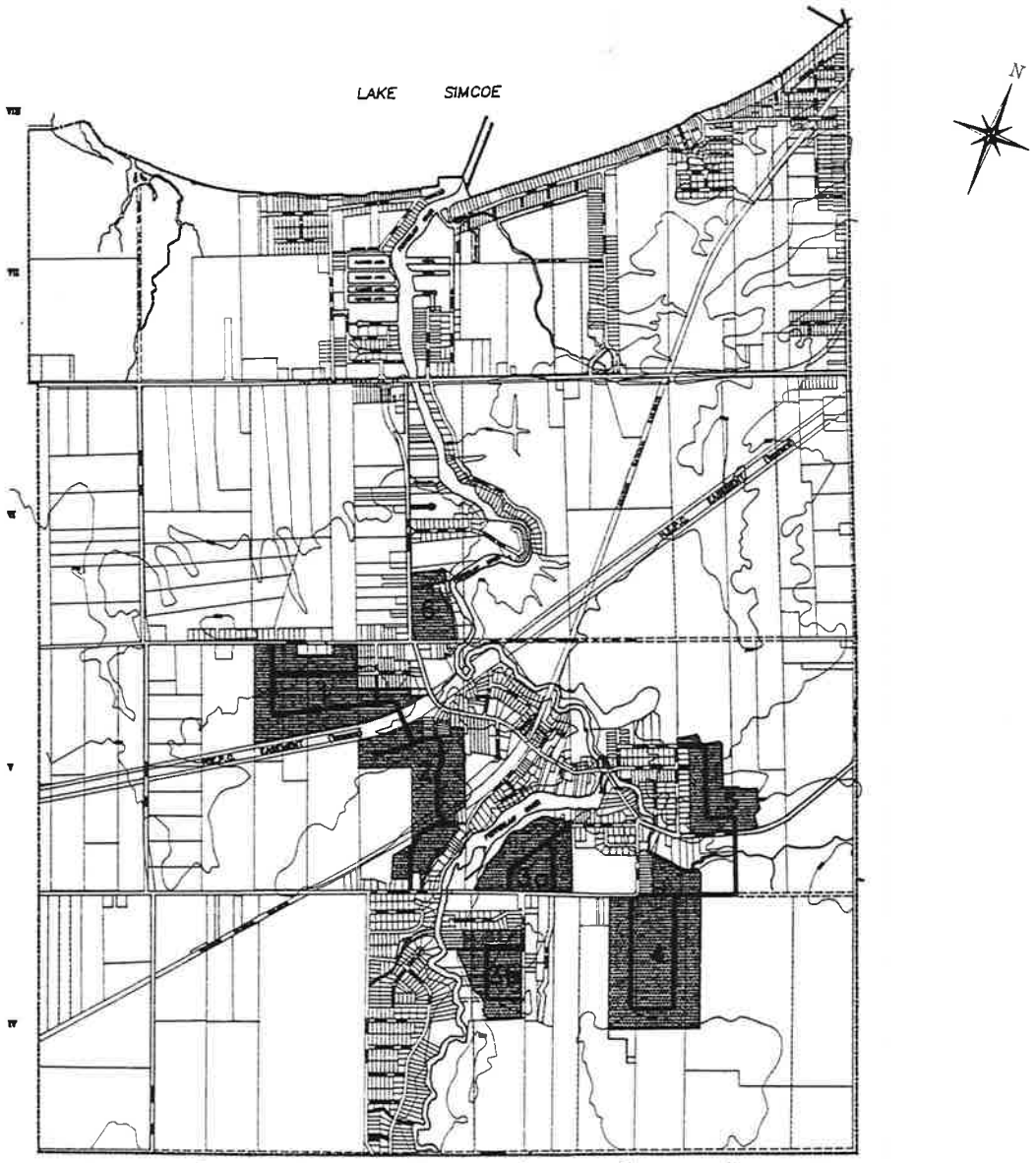
In the poorer soils area (the clay and silt soil areas), it is recommended that a limited amount of residential infill development be permitted through the severance process only. It is the intention of the plan to allow dry type Commercial and Industrial

development to locate in the poorer soils area of the community in order to take advantage of highway linkages, access and the visibility provided by the transportation corridor. Development of dry Industrial and Commercial uses may proceed by both the severance and Plan of Subdivision process depending upon the characteristics of each individual site and subject to Regional Health Unit and Conservation Authority approval. In those areas considered suitable for development, notably the "preferred development areas" located in the silty sand/sand soils area, future residential development would be permitted to proceed by both the severance and Plan of Subdivision approval processes.

### 3.3.1 Preferred Residential Development Areas

Utilizing background hydrogeological information, and by factoring in relevant planning constraints, the most appropriate locations in the community area for residential development were selected. It is not intended that all future multi-lot residential development be strictly limited to development areas as shown on Figure 14, the Preferred Residential Development Areas schedule. If a proponent can sufficiently demonstrate that a site, not identified as a preferred development area, is appropriate for the intended use and that the principles and policies as well as the intent of the Secondary Plan document is maintained, consideration for an amendment to the Secondary Plan may be given by Council. The identification of these areas is meant rather to serve as a guide to potential developers, builders etc. as well as notice to members of the community as to where residential development approvals should be sought and where development in the future is being contemplated and may be expected.

The areas selected as "preferred development areas" appear to be most suitable for development and it is intended that these areas be designated for residential purposes in the draft Secondary Plan document. The six sites shown on Figure 14 were chosen taking into consideration such factors as underlying soil characteristics, compatibility with surrounding land uses, proximity to existing residential areas, agricultural status, possible road and transportation linkages, and the




# PEFFERLAW SECONDARY PLAN

## PREFERRED DEVELOPMENT AREAS

TOWN OF GEORGINA

FIGURE 15

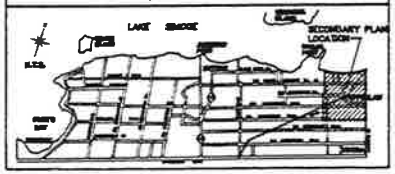
## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- CONTOUR (5m Interval)
- PREFERRED DEVELOPMENT AREAS
- ROAD CONNECTIONS

DEVELOPMENT AREAS

| | | |
|---|---|---|
| AREA 1: | 79.73 acres | (322 678m²) |
| AREA 2: | 68.82 acres | (270 423m²) |
| AREA 3a: | 41.28 acres | (167 050m²) |
| AREA 3b: | 34.64 acres | (140 199m²) |
| AREA 4: | 103.12 acres | (417 328m²) |
| AREA 5: | 35.38 acres | (143 114m²) |
| AREA 6: | 18.35 acres | (74 274m²) |
| TOTAL: | 379.30 acres | (153.5086 ha) |

KEY MAP

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environmental and resource attributes of the subject sites. In addition to identifying the preferred development areas, the schedule shows where potential linkages and connections could be made to the existing local road network. It is not anticipated that land assembly for development purposes would be a major problem except possibly for two of the preferred development sites (3b & 6), since ownership of each area appears to be held by no more than 1 or 2 owners.

In total, approximately 153.5 hectares (379 acres) of the community area has been identified as "preferred development areas" and would be designated RESIDENTIAL by the Secondary Plan document. In order to estimate the development potential of the preferred development areas, the sum of areas was multiplied by a factor of .65 to yield a net developable area and to account for parkland dedication areas, road right-of-way areas, stormwater management retention and detention areas, and expected lower than average lot yields due to the smaller size and higher number of individual landholdings. The percentage of 65 % is listed in Section 5.2.1 of the Official Plan as the percentage of land available for actual sites for residential lots in a low density neighbourhood. It is estimated that if all of the identified areas were developed for residential purposes according to current standards, a yield of approximately 142 lots could reasonably be expected.

### 3.3.2 Seasonal Residential Conversion Potential

It appears that according to recent assessment data, a trend towards the conversion of seasonal residential housing stock to permanent residential use is evident. The number of seasonal residential dwellings in the Pefferlaw community area in 1990 was 262 dwellings. The rate at which this conversion is occurring has averaged 1.2 % per annum in recent years. Assuming this rate of conversion will continue and remain constant for the duration of the planning period, it is expected that by the year 2011 there will be approximately 59 conversions leaving a total of approximately 203 seasonal residences. This amounts to an overall conversion of approximately 22 % of the existing seasonal residences in the community area.

### 3.3.3 Residential Lot Infill and Intensification Potential

From a review of the residential lot infill potential of the Pefferlaw community area it appears that limited but significant opportunities are available. The infill estimates cannot take into account individual site characteristics of each potential lot and development constraints due to such features as property grades and slopes, site specific soil conditions, depth to water table etc. Areas that were identified as having infill potential were properties that were located on an open municipal road, located within or across from an area of existing residential development, and possessing the recommended minimum lot size of .7 hectares or 1.7 acres. In regard to residential infilling and development along the rural roads of the community area (in particular Weir's sideroad and Homestead Road), we have selected those areas that if permitted to be severed and developed would only essentially "mirror" existing residential development of relatively the same type. When reviewing infill potential, it appears that almost all vacant lots in existing plans of subdivision are too small and do not meet the current minimum lot standards or are located in poor soils areas. It should therefore be expected that the infill potential of existing developed plans of subdivision is very small to the point of being almost non-existent. Almost all of the identified infill lots were located in the RURAL and RESIDENTIAL designations.

In the area possessing the better silty sand and sand soils, it was estimated that as many as 24 infill lots could be developed in the existing built-up portion of the community. Evaluation of the severance potential along the rural concession roads of the community identified a possible yield of 17 lots for a total of 41 potential residential infill sites in the good soils area. In the area identified as possessing the poorer clay and silt soils, it was estimated, site conditions permitting, that as many as 29 infill lots could possibly be developed. These estimates reflect a severance potential only, and do not accurately reflect the number of severances possible in accordance with the current severance policies of the plan.

In addition to residential infill, the Residential Intensification study completed by Starr Group for the Town identified a very limited intensification potential in the Pefferlaw community with available opportunities consisting of redevelopment of the existing commercial properties along the Regional Road 21 corridor for accessory apartment uses.

### 3.3.4 Summary of Development Potential

It is estimated that if the population projection based on the 1 1/2% annual growth rate per annum (the higher growth rate scenario) is achieved during the duration of the planning period, the community population would increase by 34 % and have an ultimate population of 3,105 persons for a net increase of 791 additional persons. Using an average household size of 2.8 persons per unit, a total of approximately 283 additional housing units would be required in the community area. If the population projection based on the 1 % annual growth rate per annum (the lower growth rate scenario) is reached, the community population would increase by approximately 21 % and feature an ultimate population of 2,796 persons or an increase of 482 persons. Again, assuming an average household size of 2.8 persons per unit, a total of approximately 172 additional housing units would be required. It is assumed that by the end of the planning period the population of the community will be somewhere within the higher and lower growth scenarios and demand for housing will range between 172 and 283 units.

Including the residential potential of the preferred development areas as well as the potential for residential infill and for "mirror" type development in the areas of good soils along Homestead and Weir's sideroad, there is a potential for approximately 186 lots. If the proposed Pefferlaw Estates (which has Official Plan status) proceeds and the identified potential infill sites of the poor soils areas are also included, there is a development potential of approximately 237 lots. In addition to this potential it is estimated that approximately 59 seasonal residential dwellings may be converted to permanent residential use over the duration of the planning period. It is our opinion therefore that a sufficient supply of residential lots could be available during

the planning period without requiring approval of multi-lot residential developments in the poorer soils area of the community.

It should be recognized that all of the lands identified for potential development will probably not become available for development purposes during the planning period. We would therefore recommend that the municipality monitor the number of residential lots available for development within the Pefferlaw community area to ensure that an adequate supply of lots is maintained. It is also recommended that present Official Plan policies governing severances in the existing built-up area of the community be revised, in accordance with Health unit regulations, to more readily accommodate the residential intensification and infill of these areas. At present, there does not appear to be any reason for the municipality to restrict limited residential growth and infill in the community, although the cumulative effect of development on the groundwater resource and health concerns must be periodically reviewed. When approval is sought for larger scale multi-lot residential developments it is recommended that extensive studies be required to examine and review the status of existing water quality and pollution in the community, the potential impact of the proposed development on the groundwater resource, and the feasibility and desirability of providing communal water and sewage systems.

### 3.4 Industrial and Commercial Development

In order to provide employment opportunities and other economic benefits to the Pefferlaw community, a number of areas were identified where dry recreational, industrial and commercial uses could be encouraged to develop. These sites are generally considered to possess attributes that would be conducive to the type of development envisioned, and would be designated by the Secondary Plan document as "special policy areas".

The objective of the adoption of special policy areas into the Secondary Plan document is to guide the land use changes that are necessary to accommodate the desired types and levels of growth while minimizing disruptions to the man-made and natural environment of the community. The identification and designation of

these areas is meant to serve as guidance to the land development industry as to where specific types of land uses and development are thought to be most appropriate and where they may be accommodated.

### 3.4.1 Tourist Marine Commercial & Recreational S.P.A.

Designation of special policy areas for commercial/recreational uses supports the intent of the Official Plan which lists as an objective in Section 3, the identification of opportunities for the support of the tourist industry and a strengthening of the lake orientated tourism commercial base. The areas identified in Figure 15, the accompanying Proposed Special Policy area schedule would be designated as a tourist marine commercial/recreational special policy areas in the Secondary Plan. These lands are seen as having potential for marina use and other water related recreational activities as well as other extensive recreational uses such as golf courses. The identified areas may be located within floodplain and regulatory fill areas, however, they are strategically located and development of the properties would increase recreational and business opportunities as well as the viability of the community area for recreational uses. The delineation of a special policy area for these types of uses is intended to encourage the nodal grouping of recreational commercial uses around the lake and river amenity. Policies in the plan would seek to encourage the various types of recreational development envisioned.

### 3.4.2 Highway Commercial Node - S.P.A.

The area identified as the Highway Commercial Node special policy area on the accompanying schedule was seen as having the greatest potential and the most desirable location for commercial development in the Pefferlaw community. The special policy area has highway exposure with the major portion of the policy area conveniently located at the junction of Highway 48 and Pefferlaw Road with access from Pefferlaw Road. The type of commercial uses envisioned in the special policy area would include, along with Highway Commercial uses, General Commercial type uses to recognize that development of new larger scale General Commercial uses cannot be accommodated within the existing core area and that a flexible blend

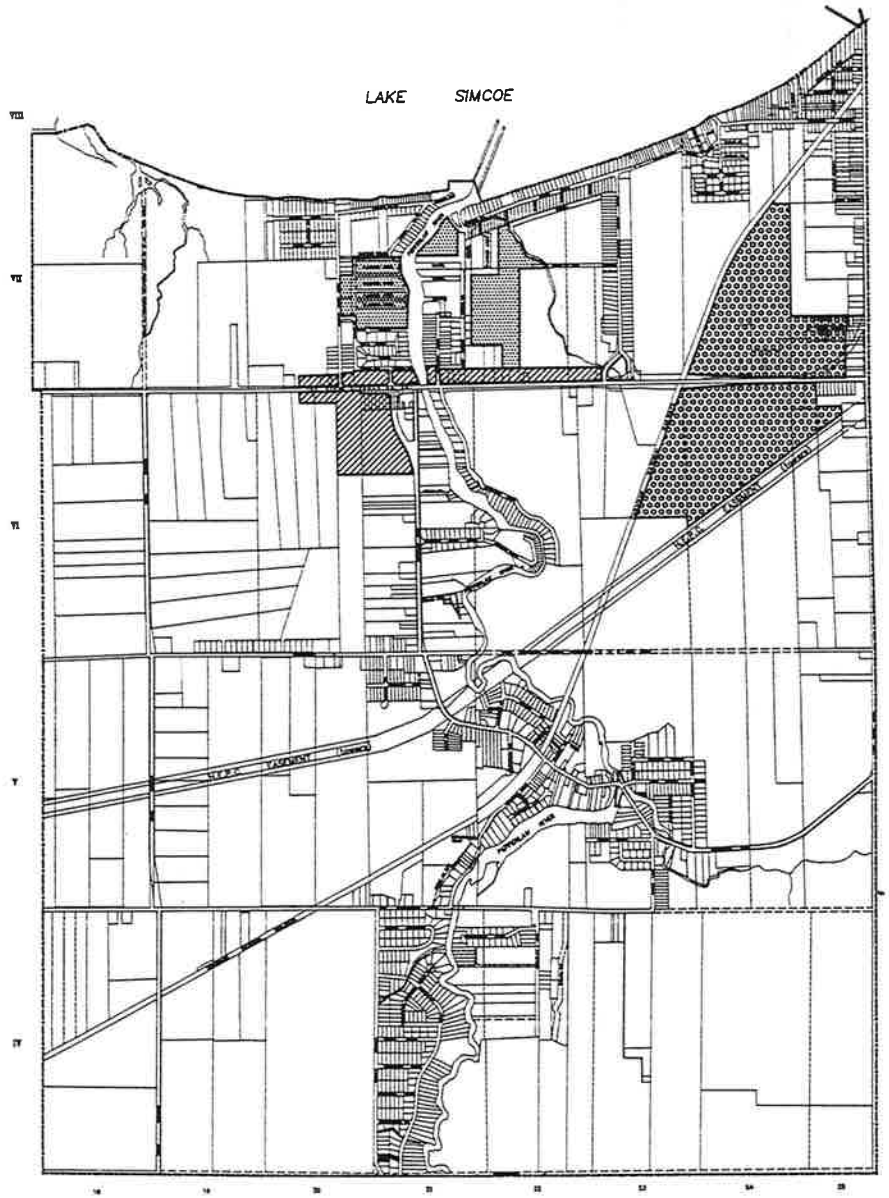
of both types of commercial uses is necessary to serve a small market. The designation of the special policy area is also an acknowledgement that beyond the more intense utilization of existing commercial buildings in the core area and the conversion of existing residential dwellings to commercial uses, the existing commercial area has little or no capacity to expand as well as having other limitations such as a lack of off-street parking. It is therefore proposed to designate the special policy area for the possible future location of new and larger commercial uses.

Specifically, the proposed policy would permit the location and establishment of a large single retail use or a small retail commercial plaza in the special policy area, possibly having a total floor area of up to or greater than 1000 $m^2$. Policies will restrict commercial uses to "dry" type uses and will encourage the Town when contemplating any proposal, to consider the effect of the approval of commercial uses in the special policy area on the existing commercial core area of Pefferlaw. It is intended that proposed commercial uses should complement and not compete with businesses in the core area and market studies may be requested by the municipality from the proponent to justify the need for the amount and type of retail space as well as to estimate the possible impact on existing commercial businesses in the core area.

It should be noted that the size of the identified node area is not a result of anticipated square footage requirements for retail space in the community, but rather a function of environmental regulations governing development on private services. For instance, developments with sewage flows greater than 4500 litres per day (a large home is often designed for 3000 l.p.d.) have more stringent guidelines applied which increase the size of the normal dilution area. Thus, commercial development on private sewage disposal systems is land extensive due to the large land areas required for dilution purposes.

### 3.4.3 Light Industrial - S.P.A.

It is not the intention of the Town that the Pefferlaw Secondary Plan area become a major industrial area, but rather that the community area continue as an area where




# PEFFERLAW SECONDARY PLAN

## PROPOSED SPECIAL POLICY AREAS

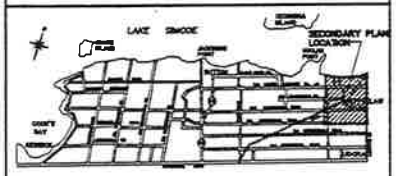
TOWN OF GEORGINA

FIGURE 16

## LEGEND

- SECONDARY PLAN BOUNDARY LINE
- TOURIST MARINE COMMERCIAL/ RECREATIONAL – SPECIAL POLICY AREA
- HIGHWAY COMMERCIAL NODE – SPECIAL POLICY AREA
- LIGHT INDUSTRIAL SPECIAL POLICY AREA

## KEY MAP




REINDERS

SCALE 1 : 12 500

0 500 1000 1500m

the establishment of local industries is permitted. The industrial special policy area is not meant to change the intent of Policy 5.2.4 (b) ii) of the Official Plan for the Town of Georgina Planning Area which makes it clear that industrial development on private services in the Pefferlaw area is of secondary importance to industrial development in Keswick and Sutton on full services. The Official Plan states in Section 5.2.8.1.6 that "industries generally will be relatively small unless directly related to agriculture, mineral aggregate extraction, or forestry". The beneficial aspect of the development of a small industrial park is that it could serve as an alternative for residents to commuting to work in larger distant centres and could possibly increase local employment opportunities. The desired effect of this policy would be the clustering of future industrial uses through the creation of an industrial plan of subdivision. New industrial uses wishing to locate or re-locate within the community could situate themselves in a specific area of the community instead of having no alternative but locating in an ad-hoc fashion along the major transportation corridor. Land use conflicts throughout the community could also be minimized and economic benefits possibly realized by the grouping of similar uses.

The areas identified as the Light Industrial Special Policy Area on Figure 15 are strategically located and well adapted for a possible future dry light industrial park. Situated near existing industrial uses, the locations have exposure and access to Highway # 48 and could be allowed a rail connection with the Canadian National Railways Secondary mainline. In terms of compliance with the guidelines for "preferred locations for new employment" listed in Section 6.4.3. (d) of the Industry on Private Services Study completed for the Region, the industrial special policy area is located within an existing settlement area where there has been a settlement capability study completed, is located in an area of existing rural industries, and is located at a strategic point which is accessible to major transportation corridors.

From an assessment of the Regional market demand and supply for the need for designated industrial land, it appears that the Industry on Private Services study

has already, in one scenario, a current deficit of industrial land for the Town of Georgina. The study has found the following:

## Table 9
## PRIVATELY SERVICED INDUSTRIAL LAND – YORK REGION

| Area Municipality | Site | [1] Occupied Zoned Land (acres) | [2] Other Occupied Land (acres) | Total Occupied Land (acres) | [3] Vacant Zoned Land (acres) | Vacancy Rate (%) | [4] Proposed Land (acres) |
|---|---|---|---|---|---|---|---|
| Georgina | Pefferlaw | 77 | 0 | 77 | 25 | 24.65 | 32 |
| | Sutton & Area | 113 | 0 | 113 | 69 | 37.8% | 0 |
| | Keswick & Area | 63 | 0 | 63 | 4 | 6.0% | 10 |
| | Sub-total | 253 | 0 | 253 | 98 | 27.9% | 42 |

Source: Industry on Private Services Study, Price Waterhouse, 1991

NOTES
[1] Includes occupied zoned lands that permit industrial uses.
[2] Includes privately serviced occupied industrial lands that are legal non-conforming uses.
[3] Includes vacant zoned lands that permit industrial uses.
[4] Includes any applications received by the municipality for development of IPS.

## Table 10
## PRIVATELY SERVICED INDUSTRIAL LAND – REQUIREMENTS

| Municipality | [1] Projected Industrial Employment Growth 1992-2011 (# emps) | [2] Estimated Industrial Land Requirement 1992-2011 (acres) | [3] Vacant Privately Serviced Industrial Land (acres) | [4] Industrial Land Surplus (Deficit) 1992 (acres) | [5] Proposed Privately Serviced Industrial Land (acres) | [6] Industrial Land Surplus (Deficit) 2011 (acres) |
|---|---|---|---|---|---|---|
| HIGH PROJECTION (1991-2011) | | | | | | |
| Georgina | 1,259 | 180 | 98 | (82) | 42 | (40) |
| LOW PROJECTION (1991-2011) | | | | | | |
| Georgina | 1,259 | 84 | 98 | 14 | 42 | 56 |

Source: Industry on Private Services Study, Price Waterhouse, 1991

NOTES
[1] Based on employment projections prepared for York Region by Hemson Consulting in June 1990. The figures are based on a Regional population target of 840,000 persons and the employment share assumptions utilized in the GTA Planning Process.
[2] Based on development densities of 7 (high projection) and 15 (low projection) employees per acre as per Regional Official Plan Alternative Visions 2011 assumption.
[3] Based on inventory of vacant privately serviced industrial land.
[4] 3 minus 2.
[5] Based on inveentory of proposed privately serviced industrial land.
[6] 4 plus 5.

The Industry on Private Services study found, as shown above in Table 9, that the Pefferlaw area contained 77 acres of occupied industrial land or 30 % of the total industrial land of the Town. It is our opinion that this is not accurate as the Existing Land Use survey completed as part of this background study found approximately 20 acres of existing industrial lands in the community area. The study also found (as shown by Table 10) that, according to the high industrial land use projection (based on the lower employment density of 7 employees per acre), the Town of Georgina in 1991 had a 82 acre industrial land deficit.

The lands identified as the Light Industrial Special Policy Area in Figure 15 are approximately 93.47 hectares (231 acres) in size. While this area is larger than the entire deficit identified for the Town of Georgina it is felt to be an appropriate size given that the estimated demand for industrial land as demonstrated by the I.P.S. study is thought to be low for a number of reasons. The anticipated need for industrial land as identified by the Industry on Private Services study is thought to be low because it was prepared using the Hemson population forecast which has been shown to contain a significant margin of error (seen by the 1996 population forecast for the Town of Georgina approximately equaling the actual 1991 population). The employment targets and the corresponding absorption rates for industrial land in the Town would most likely increase if the population projections contained within the Municipal Housing Statement were utilized in these calculations.

Other reasons for the larger size of the Industrial Special Policy Area is that the net developable area for industrial lands is normally in the range of 80 % of the gross area. In addition, there is reason to believe that even the high projection of industrial land requirements is too low since the employment density of 7 employees per acre may be too high. The Hemson study in Table XII-3 used an employment density of 5 persons per net acre for the Town of Georgina and the other more rural municipalities.

As indicated in the Hemson study, "simply providing sufficient land for the forecast of development needs is not likely to be adequate due to the realities of the real

estate market, and the uncertainties associated with the future." The Town may decide that due to the requirements for market flexibility and the need to ensure choice and competition, it may be appropriate to maintain a 10-15 year supply of industrial land in the community area. As noted above, the size of the designated area is not strictly the result the anticipated demand for industrial space within the community but rather a recognition of the requirement for large areas that are typically required for development on private services and the likelihood that not all owners of the identified properties would be willing to develop or sell their land.

## 4.0 SUMMARY

### 4.1 Rationale for Change

In addition to examining the community in detail, the Secondary Plan planning process is meant to identify policies which will guide and provide for the future growth of the community area while also taking into consideration relevant governmental policy initiatives. The Official Plan is a policy document, and with all policy documents there is periodically a need for it to be updated in order that it reflect the evolving policies and information base of the Province of Ontario, the Region of York and other governmental agencies.

Changes to the residential land use policies are intended to guide future development to more appropriate locations and to reflect the fact that previous delineations between permanent and seasonal residential types are no longer applicable or relevant. Reasons for the proposed changing of existing land use policies, as set out in the accompanying schedule, include the desire to minimize encroachment into rural lands by requiring the concentration of future residential development in and around existing built-up and settlement areas. In addition, policies were changed in order to more clearly identify and define the extent and location of existing hazards, environmentally significant areas and institutional uses. The proposed policy changes are also intended to serve to restrict those land uses no longer thought to be appropriate in a growing (albeit slowly) rural community centre. The proposed policies also recognize that commercial, industrial and tourism related assessment is required to balance residential growth and that the policies of the Secondary Plan should encourage growth of this type.

The redirection of various anticipated types of future growth to more appropriate locations is a main objective of the Secondary Plan process. Through the location of an industrial special policy area along the railway corridor the Town is actively encouraging the redirection of future industrial growth further north, away from the

core area with it's incompatible residential uses, into an area with existing industry and highway exposure. The identified industrial special policy area is also buffered from the residential and recreational uses located along the Lake Simcoe shoreline and consists of individual landholdings large enough to be developed as an industrial plan of subdivision.

It is our recommendation that a commercial node at the junction of the Pefferlaw Road and Highway 48 should be encouraged. Development of a node with access from the Pefferlaw Road may reduce the amount of commercial strip development that would normally be expected to locate along the Highway corridor. This commercial node could possibly allow the opportunity for the location of a new, larger scale (10,000 $ft^2$ +) general commercial facility in the community that would not otherwise be able locate in the existing core area due to servicing constraints and space limitations. Commercial traffic stopping at this location might be encouraged to visit the existing commercial core area.

The restricting of new residential multi-lot development from the Lakeshore area and along the Highway 48 corridor is intended to guide residential growth into areas not only more suitable for the location and operation of private septic services, but also to redirect growth to areas with proximity to the core commercial area. The redirection of residential growth from the Lakeshore and highway corridor areas to the more appropriate preferred development areas promotes the integrity of the Agricultural First Priority area and may help to protect it from sterilization due to the encroachment of non-compatible residential and commercial uses. The location of future residential growth and development to the preferred development areas is also appropriate because community facilities such as the library, community hall etc. are located nearby as well as large Open Space areas. These Open Space areas could be utilized for passive recreational use and are situated immediately to the south of the built-up area in the Pefferlaw Tract. The location of residential uses adjacent to this "green belt" serves to limit the extent of continuous development

(the possibility of future add-on development) as well as providing additional "nitrate dilution areas".

## 4.2 Summary

A major impetus for the undertaking of the Secondary Plan was to more clearly determine the extent of the apparent construction and servicing limitations of large portions of the Pefferlaw community area. Information was also sought in order to determine the general suitability of the community area for development purposes. In addition, policies such as the Reasonable Use of Groundwater Policy of the Ministry of the Environment were implemented by the province which increased the emphasis on the need to conserve the groundwater resource. Regional policies also required the Town of Georgina undertake a settlement capability and Hydrogeological study as part of the planning process if further growth of the Pefferlaw Community Area was contemplated.

The subsequent Hydrogeological Investigation determined that a communal water system was not necessary in order to ensure an adequate supply of potable water to the community. Based on the findings of the completed settlement capability component of the Hydrogeological Investigation and this background report, it is evident that the Pefferlaw community area will be able to sustain the various forms of anticipated growth on private septic and water services. If the proper procedures and precautions are applied to development, growth can be accommodated in the Pefferlaw Community without degrading the environment and in accordance with good planning principles. The level of growth anticipated over the duration of the planning period is modest and strategies to accommodate this level of growth have been identified. Specific studies relating to the potential impact on both the man-made and natural environment will be required to be undertaken by proponents of development prior to approval, in order to assess as each development proceeds the consequences and impact of growth on the Pefferlaw Community Area during the length of the planning period.

Appendix A - **Preliminary Drainage System Review**

# DRAINAGE SYSTEM REVIEW

## 1.5 Drainage System Review

### 1.5.1 Introduction

The existing storm drainage system within the Secondary Plan area was reviewed in regards to catchment areas and the size, condition and capacity of all major culverts with the exception of the main bridges on Pefferlaw Brook. These bridges were modelled as part of the floodline work done by Marshall Macklin Monahan in 1979-1980 for the Pefferlaw Brook (see below).

### 1.5.2 Background Studies

Several drainage studies have been done for areas within the Plan area ranging in scope from site specific stormwater management studies (e.g. Queensberry Subdivision, R. J. Hopkins and Associates; Woodlands Subdivision, McCormick Rankin, 1990) up to the overall Floodline Study done by Marshall Macklin Monahan in 1979-1980.

The latter study modelled the entire watersheds of the Beaverton River, Pefferlaw Brook and Zephyr Creek and determined peak flows at key points using the hydrologic model HYMO. Using these flows, floodlines were determined for major water courses throughout the study area.

### 1.5.3 Catchment Areas

The general drainage pattern and catchment areas were determined using 1:10,000 Ontario Base Mapping. A site visit was used to verify assumed flow direction and stream crossing locations. These catchment areas are shown on the Watershed Plan.

### 1.5.4 Culverts

A culvert survey of the Secondary Plan area was conducted in May of 1991. The Watershed Plan shows the location of all major stream crossings and Table 1.5.1 lists all structures including loction, size and type, condition and capacity. Culvert capacity was determined using the HY8 computer program, developed for the U.S. Federal Highway Administration.

The culverts were, for the most part, in very good shape with the following exceptions..

Culvert 5Aa is too short for use as a road crossing culvert.

Structure 2D is quite old but still usable. Capacity may be a problem during spring run-off.

Culvert 1E showed evidence of concrete loss on the north side and a bent guardrail on the south.

Structure 2Jb, which appears to be on private property, has a deformed inlet.

### 1.5.5 Peak Flows and Capacity of Existing Culverts

Using the Marshall Macklin Monahan flow data and the Ministry of Transportation of Ontario formula for transposition of flood discharges (Section 4.3.2 MTC Drainage Manual) peak flows were determined for all major stream crossings (refer to Table 1.5.2).

Using the table shown below the existing culverts were evaluated to determine their compliance with current MTO requirements.

MTO CULVERT DESIGN CRITERIA

| Road Classification | Closed Invert Culverts Up To 6 m Total Span | Bridges, Closed Invert Culverts Over 6m Total Span, and All Open Invert Culverts |
|---|---|---|
| Freeway | 50 year | 100-year or Regional |
| Arterial (Urban) | 50 year | 100-year or Regional |
| Arterial (Rural) | 25 year | 50 year |
| Collector | 25 year | 50 year |
| Local (Urban) | 25 year | 50 year |
| Local (Rural) | 10 year | 25 year |
| Temporary Detours | Up to 5 year | Up to 5 year |
| Driveways | 2 to 5 year | 5 year |

Using these criteria, culverts were found to meet or exceed these standards under existing drainage conditions.

### 1.5.6 Existing Drainage Problems

In discussions with the Town of Georgina, three areas with drainage problems were identified.

1. Wasslow Avenue/Wanicki Road

   Problems in this area do not appear to be caused by surface water either by flooding of the Pefferlaw Brook (which occurs well to the east) or flooding of a local water course. It is most likely that drainage problems at this location are caused by a high ground water table.

2. Woodland Subdivision

   Road crossing culverts in this subdivision have a minimim of 50 year capacity with the exception of Culvert 2D at the south end of Maple Street. This culvert may experience problems during spring run-off conditions.

   Regional flooding of the Pefferlaw Brook does extend up the tributary which crosses under Pefferlaw Boulevard at the north end of the subdivision and under regional flood conditions, a small part of Pefferlaw Boulevard and Maple Street will be overtopped in this area.

   A report by McCormick Rankin in July of 1990 indicated that the main cause of flooding in this subdivision is the high ground water table and some improperly graded ditches. Surface water run-off does not appear to cause the problems in this area with the possible exception of Culvert 2D as previously discussed.

3. James Street

   Drainage problems in this area appear to be caused by high ground water conditions and not surface water. The creek flowing from the Hamlet of Wilfrid passes beside this road but the floodlines from this watercourse are contained within the natural channel. The external drainage area flowing through James Street is quite small and there are no significant stream crossings on this road.

### 1.5.7 Summary

1. Peak storm flows from the various watersheds within the study area are very low due to the soil type, flat slopes and natural storage in the marsh areas. The following is a typical example of the flow/hectare for the 5 storms examined by Marshall Macklin Monahan in 1979-1980.

| | Storm Peak Flow in l/s/ha | | | | |
|---|---|---|---|---|---|
| Location | 1:100 Yr. | 1:50 Yr. | 1:25 Yr. | 1:10 Yr. | 1:5 Yr. |
| West Creek | 9.1 | 7.1 | 5.7 | 3.8 | 2.6 |

2. Culverts are for the most part in good shape and capacities are in accordance with current MTO guidelines.

3. Existing drainage problems do not appear to be caused by surface run-off. The most likely cause is a high ground water table in the problem area.

### 1.5.8 Recommendations

1. Culverts

Culvert 5Aa should be lengthened at both ends as it is currently too short.

Culvert 2D should be replaced and upsized if and when Maple Street is reconstructed as it is quite old and has barely enough capacity to pass a 10 year storm.

Culvert 1E should be examined to check on the impact that the loss of concrete has on the structural integrity.

2. Stormwater Management

As shown in Section 1.5.7, the existing peak flows from the watersheds within the subject area are very small. Under these existing conditions all culverts have sufficient capacity in accordance with MTO criteria.

With the exception of those lands draining directly into Pefferlaw Brook (i.e. not upstream of a culvert) development of the subcatchments reviewed as part of this study, will result in the capacity of many of the culverts being exceeded.

It is therefore recommended that prior to the further development of any one of Drainage Areas A to K on the Watershed Plan, a Master Drainage Plan should be done for the drainage area in which development is proposed. For example, if a subdivision is proposed just south of Concession 6 and just east of Weir's Sideroad, a Master Drainage Plan should be conducted for Drainage Area A showing future detention pond locations and indicating the impact that development will have on culverts and streams within the drainage area. A standard format for such a study is contained in MTO Drainage Management Technical Guidelines - Section 7. (Refer to Appendix)

TABLE 1.5.1: CULVERT SUMMARY

| Culvert | Location | Size and Type (Dimensions in metres) | Condition Poor/Fair/Good | Capacity ($m^3/s$) |
|---|---|---|---|---|
| 1A | Hwy. 48 | Twin 2 x 1 CSPA | G | 6.2 |
| 2A | Weir's S/R | 0.9 CSP | G | 2.2 |
| 3Aa | Conc. 6 | Twin 0.9 CSP | G | 4.0 |
| 3Ab | Conc. 6 | 0.8 CSP | G | 1.1 |
| 4A | Weir's S/R | Twin 1.8 x 1.2 CSPA | G | 10.2 |
| 5Aa | Road 79 | 1.2 x 0.75 CSPA | F | 2.3 |
| 5Ab | Road 81 | 2 x 1 CSPA | G | 2.3 |
| 1Ba | Hwy. 48 | 1.83 x 1.2 Conc. Box | G | 6.4 |
| 1Bb | Hwy. 48 | 2 x 1 CSPA | G | 3.0 |
| 1Bc | Hwy. 48 | 2 x 1 CSPA | G | 3.0 |
| 1C | Pefferlaw Blvd. | 0.9 CSP | G | 2.0 |
| 2C | Maple | 1.0 CSP | G | 2.4 |
| 1D | Pefferlaw Blvd. | 0.64 CSP | G | 0.9 |
| 2D | Maple | 0.6 CSP | F | 0.4 |
| 1E | Road 21 | 6.1 x 3 Conc. bridge | F | 51.0 |
| 2E | Road 23 | Twin 2.44 x 1.8 Conc. Box | G | 20.1 |
| 1F | Road 23 | 0.68 CSP | G | 0.8 |
| 2F | Hwy. 48 | 1.1 x 0.45 CSPA | G | 1.5 |
| 1G | Hwy. 48 | 3.05 x 1.52 Conc. box | G | 28.3 |
| 2G | Road 23 | 3.05 x 1.37 Conc. box | F | 12.9 |
| 1F/G | Riverview Bch. | 3.05 x 1.52 Conc. box | G | 21.2 |
| 1H | Riverview Bch. | 0.6 CSP | G | 0.65 |
| 2H | Road 23 | 0.6 CSP | G | 0.82 |

| | | | | |
|---|---|---|---|---|
| 1I | Riverview Bch. | 0.9 x 0.6 CSPA | G | 0.6 |
| 1J | Church St. | 0.8 CSP | G | 0.8 |
| 2Ja | Road 23 | 0.9 x 0.9 Conc. box | G | 1.6 |
| 2Jb | Private downstream of 2Ja | 1.5 x 0.7 CSPA | F | 2.2 |
| 1K | Riverbank Dr. | 0.6 CSP | G | 0.65 |

TABLE 1.5.2: FLOW SUMMARY

| Culvert | Upstream Area (ha) | Peak Flows ($m^3/s$)* 100 Yr. | 50 Yr. | 25 Yr. | 10 Yr. | 5 Yr. | Culvert Capacity (event) |
|---|---|---|---|---|---|---|---|
| 1A | 672.4 | 6.66 | 5.17 | 4.16 | 2.74 | 1.88 | 50 yr. |
| 2A | 75.2 | 1.29 | 1.00 | 0.80 | 0.53 | 0.36 | 100 yr. |
| 3Aa | 519.4 | 5.49 | 4.26 | 3.42 | 2.26 | 1.55 | 25 yr. |
| 4A | 419.0 | 4.67 | 3.63 | 2.91 | 1.92 | 1.32 | 100 yr. |
| 5Aa | 279.5 | 3.45 | 2.68 | 2.15 | 1.42 | 0.97 | 25 yr. |
| 5Ab | 259.6 | 3.26 | 2.53 | 2.04 | 1.34 | 0.92 | 25 yr. |
| 1Ba | 62.3 | 1.12 | 0.87 | 0.70 | 0.46 | 0.32 | 100 yr. |
| 1Bb | 74.6 | 1.28 | 0.99 | 0.80 | 0.53 | 0.36 | 100 yr. |
| 1Bc | 74.6 | 1.28 | 0.99 | 0.80 | 0.53 | 0.36 | 100 yr. |
| 1C | 175.5 | 2.43 | 1.89 | 1.52 | 1.00 | 0.69 | 50 yr. |
| 2C | 171.5 | 2.39 | 1.86 | 1.49 | 0.98 | 0.68 | 100 yr. |
| 1D | 55.8 | 1.03 | 0.80 | 0.64 | 0.42 | 0.29 | 50 yr. |
| 2D | 51.0 | 0.96 | 0.75 | 0.60 | 0.40 | 0.27 | 10 yr. |
| 1E | 3050.0 | 22.00 | 17.00 | 14.00 | 9.90 | 6.90 | 100 yr. |
| 2E | 2640.0 | 19.74 | 15.26 | 12.56 | 8.88 | 6.19 | 100 yr. |
| 1F | 37.0 | 0.54 | 0.40 | 0.31 | 0.19 | 0.12 | 100 yr. |
| 1G | 573.0 | 4.22 | 3.11 | 2.41 | 1.51 | 0.90 | 100 yr. |
| 2G | 347.1 | 2.90 | 2.14 | 1.65 | 1.03 | 0.62 | 100 yr. |
| 1F/G | 643.5 | 4.60 | 3.40 | 2.63 | 1.64 | 0.99 | 100 yr. |
| 1H | 52.9 | 0.71 | 0.52 | 0.40 | 0.25 | 0.15 | 100 yr. |
| 2H | 18.0 | 0.31 | 0.23 | 0.18 | 0.11 | 0.07 | 100 yr. |
| 1I | 65.8 | 0.83 | 0.61 | 0.48 | 0.30 | 0.18 | 50 yr. |
| 1J | 77.2 | 0.94 | 0.69 | 0.54 | 0.33 | 0.20 | 50 yr. |
| 2Ja | 44.3 | 0.62 | 0.46 | 0.35 | 0.22 | 0.13 | 100 yr. |
| 1K | 26.6 | 0.42 | 0.31 | 0.24 | 0.15 | 0.09 | 100 yr. |

*Flows are based on HYMO results as developed for the watershed by Marshall Macklin Monahan in 1979-1980, 24 hour event.

Appendix B - **Correspondence concerning Commercial Servicing**

**Terraprobe Limited**

Consulting Geotechnical Engineers & Hydrogeologists

UNIT 5A
230 BAYVIEW DRIVE
BARRIE, ONTARIO
L4N 5E9

(705) 739-8355
FAX: (705) 739-8369

June 30, 1992

Our File No. 91129

Town of Georgina
c/o F.J. Reinders and Associates (Barrie) Ltd.
80 Bradford Street
Barrie, Ontario
L4N 6S7

Attention: Mr. Ray Kelso



**RE: COMMERCIAL DEVELOPMENT VS NITRATE ASSESSMENT**
**COMMUNITY OF PEFFERLAW**
**TOWN OF GEORGINA**

Dear Sir:

Further to our letter of June 2, 1992 pertaining to the potential for commercial development on rural servicing within the Community of Pefferlaw Secondary Plan Area, we are providing the following additional comments.

It is our understanding that from your current land planning that about **13.84** ha of land is being designated as commercial.

Based on this area and assuming a sewage flow less than 4500 lpd per development, about 9500 to 19000 lpd of total sewage volume can be diluted using an infiltrate rate of 100 mm/year or 200 mm/year respectively. The higher rate of 200 mm/year could apply if at least 1.5 m of sand soils are encountered over that site area. The area being designated is suspected to be primarily silty soils with an associated infiltration rate likely between 100 mm and 200 mm/ year.

These numbers would suggest development of 2 to 4 small dry use commercial facilities over the 13.8 ha area.

As an example of a typical commercial development, water records were reviewed recently for an approximate 1115 m (12000 ft) commercial plaza. The records indicated a water use of about 3000 cu.m/year (8200 lpd). The plaza contained about 8 or 9 units such as a pet food store, knitting shop, dry goods retailer, variety store, and donut shop.

Given current regulations for sewage disposal (ie: less than 4500 lpd or strict Reasonable Use Guidelines apply), the above development could not be supported. The facility would need to be approximately 1/2 the size and/or likely the donut shop eliminated to keep the average sewage flow below 4500 lpd.

Proponents for development in the Pefferlaw Secondary Plan would need to conduct site specific studies to demonstrate appropriate infiltration rates and septic designs. However, the above examples illustrate the necessity to restrict commercial development to primarily dry use only.

It should be noted the use of beds with flows greater than 4500 lpd will result in the application of the stricter Reasonable Use Guidelines which effectively reduces the maximum sewage flow to about 1/4 of that permissable with the smaller systems.

We trust that this letter will be of assistance. If you have any questions, please do not hesitate to contact this office.

Sincerely,
**TERRAPROBE LIMITED**

Kirk R. Johnson, P.Eng.

**Terraprobe Limited**

Consulting Geotechnical Engineers & Hydrogeologists

80 Ellis Drive, Unit 5
Barrie, Ontario
L4M 6E7
(705) 739-8355
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June 2, 1992

Our File No. 91129

Town of Georgina
c/o F.J. Reinders and Associates (Barrie) Ltd.
80 Bradford Street
Barrie, Ontario
L4N 6S7

ATTENTION: Mr. Ray Kelso

---

RE: COMMERCIAL DEVELOPMENT
COMMUNITY OF PEFFERLAW
TOWN OF GEORGINA

---

Dear Sir:

Further to your request, we are providing our additional comments pertaining to the future development possibilities for commercial uses within the Secondary Plan Study Area of Pefferlaw.

The primary constraint to commercial development or septic disposal systems is dilution of nitrate.

For sewage discharge rates less than 4500 lpd a similar dilution ratio is used as for individual residential beds. Sewage effluent mixes with 4 parts fresh water infiltration to obtain a resultant nitrate concentration of 10 mg/l or less.

However, for sewage flows greater than 4500 lpd (ie: a large home is often designed for 3000 lpd), the stricter MOE Reasonable use Guidelines is applied. Assuming a zero background nitrate concentration on site before development, new loadings are restricted to

ensure that the sewage and infiltrating precipitation mix to obtain a resultant nitrate concentration less than 2.5 mg/l (ie: 25 percent of the difference between the background concentration and the Ontario Drinking Water Objective of 10 mg/l for nitrate). This effectively increases the land area required for dilution four fold. Thus, new commercial development on septic bed disposal systems is minimal due to the large land areas required.

Below are some typical flow rates which are suggested by MOE for different facility uses. These are used to design septic bed systems and to assess nitrate loading.

| | |
|---|---|
| Medical Offices | |
| -doctors, nurses and medical staff | 275 lpd/person |
| -office staff | 75 lpd/person |
| -patients | 25 lpd/person |
| Commercial Office | 50 - 75 lpd/person |
| Retail Store Area | 40 lpd/person |
| Retail Stores - Washrooms only | 5 lpd/sq.m of store area |
| Restaurant - 24 hour | 200 lpd/seat |
| Beauty Salon | 650 lpd/station<br>130 lpd/person |

The above rates can normally be used to size a septic disposal system. For nitrate dilution it may be possible to consider average values associated with particular use. As an example, a seasonal commercial use facility (ie: marina) may only discharge for 6 months of the year. Therefore, the total volume used for annual nitrate dilution could be reduced significantly from that used to size the bed.

In conclusion, with commercial development, each use has to be assessed individually. Given the soil and groundwater conditions in the Pefferlaw Study Area (ie: silt and clay soils and/or high water table) most future commercial development should realistically be a "dry use" (ie: low sewage discharge and water use).

The Provincial government is currently pursuing or encouraging development of alternative septic disposal technology. These include Class VI type systems with denitrification capabilities. However, at present, approval of new systems is not assured.

We trust that this letter is adequate for your present requirements. If you should have any questions, or if we can be of further assistance, please do not hesitate to contact the undersigned.

Sincerely,

**TERRAPROBE LIMITED**

Kirk R. Johnson, P.Eng.
/jj