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The Corporation of the
City of Burlington

**Halton Landfill Environmental Assessment
Population Projections for Halton Region**

851005

March 1988

STAMM ECONOMIC RESEARCH

**187 King Street East
Toronto, Ontario
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PART ONE

INTRODUCTION

1.1 Introduction

In undertaking to evaluate waste generation on which the waste disposal issue is determined, this firm has reviewed the population projection total and its distribution by waste generation zones as presented by C. N. Watson and Associates Ltd. (Watson) in their analysis for the Region of Halton. For reasons discussed in Part 4 of this report, the population projection used in Watson's 1986 report entitled, "EPA Review of Waste Quantities Projection" (Watson EPA Review Report, Exhibit H-15) was deemed inappropriate and independent population projections were prepared by this firm.

This memorandum summarizes the population projection for Halton Region undertaken by this firm. Population growth and the spatial distribution of that growth are critical components to the transportation cost and hence the economic evaluation of the candidate landfill sites. With this concern in mind, our projection has examined in detail both the total future population in Halton Region, and the varying growth impacts on the four municipalities.

To arrive at our projection, a detailed zone structure has been used to estimate future population growth for the Town of Oakville and the City of Burlington. In total, 25 zones have been defined for the Town of Oakville and 33 zones for the City of Burlington as the basis of our projection. Maps of these zones are provided in Appendix A. For comparative purposes, projections for these smaller zones have been aggregated into the 10 waste generating zones used in the Region's assessment of the two candidate landfill sites, Site D and Site F. The ten zones are shown in Figure 1.1.

Projecting future population for the Toronto Region is an ongoing and continuing process performed within this firm. We have undertaken projections for this area for many shopping centre studies and other purposes. Hence, the population projection presented in this report is not an isolated exercise but part of a process that is monitored regularly.

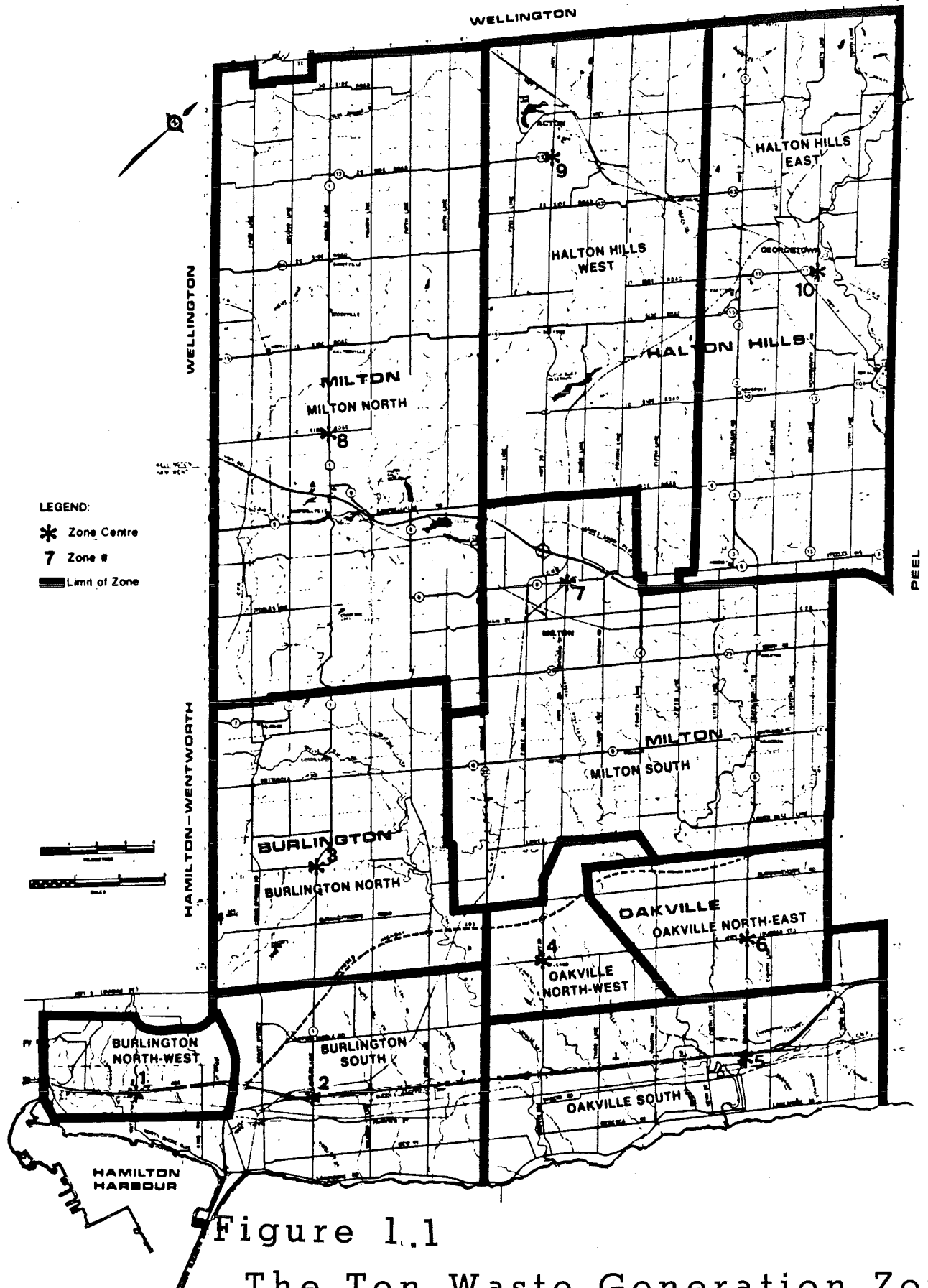


Figure 1.1

The Ten Waste Generation Zones

PART TWO

POPULATION ANALYSIS

2.1 Introduction

In this part of the report, the origin of population growth pressure for Halton Region is discussed. Both the recent growth pattern in Halton as well as growth in the greater Toronto and Hamilton area will be examined.

2.2 Origin of Population Growth Pressure

The estimation of the future population of the Region of Halton and its constituent area municipalities is of itself a difficult task. There are a number of contributing factors.

1. The Region is comprised of settlement areas which are integral parts of two larger urban areas, (i) the Toronto Region (Figure 2.1), and (ii) the greater Hamilton urban area (Figure 2.2). The growth pressure on the area municipalities comes not from economic growth located in and predominantly brought about by virtue of the Region, but rather from economic growth which has its origins in the growth of the entire Toronto and Hamilton urban areas.
2. The absolute pressure of growth of the Toronto Region manifests itself largely in a "growth frontier" on the outskirts or periphery of the greater Toronto area. The changes in the magnitude of such growth will be felt in this "growth frontier". Specifically, the four area municipalities of Burlington, Oakville, Milton and Halton Hills are part of the growth frontier of the Toronto Region. Furthermore, Burlington is also part of the growth frontier of the Hamilton urban area. As a result, all parts of Halton Region are effected by this growth.
3. The extent to which such growth pressure manifests itself is very different by area municipality, being mainly a function, of **first**, the location of "structuring employment" such as industrial parks and office complexes; **second**, the commuting pattern to areas of growing employment in the Region; and

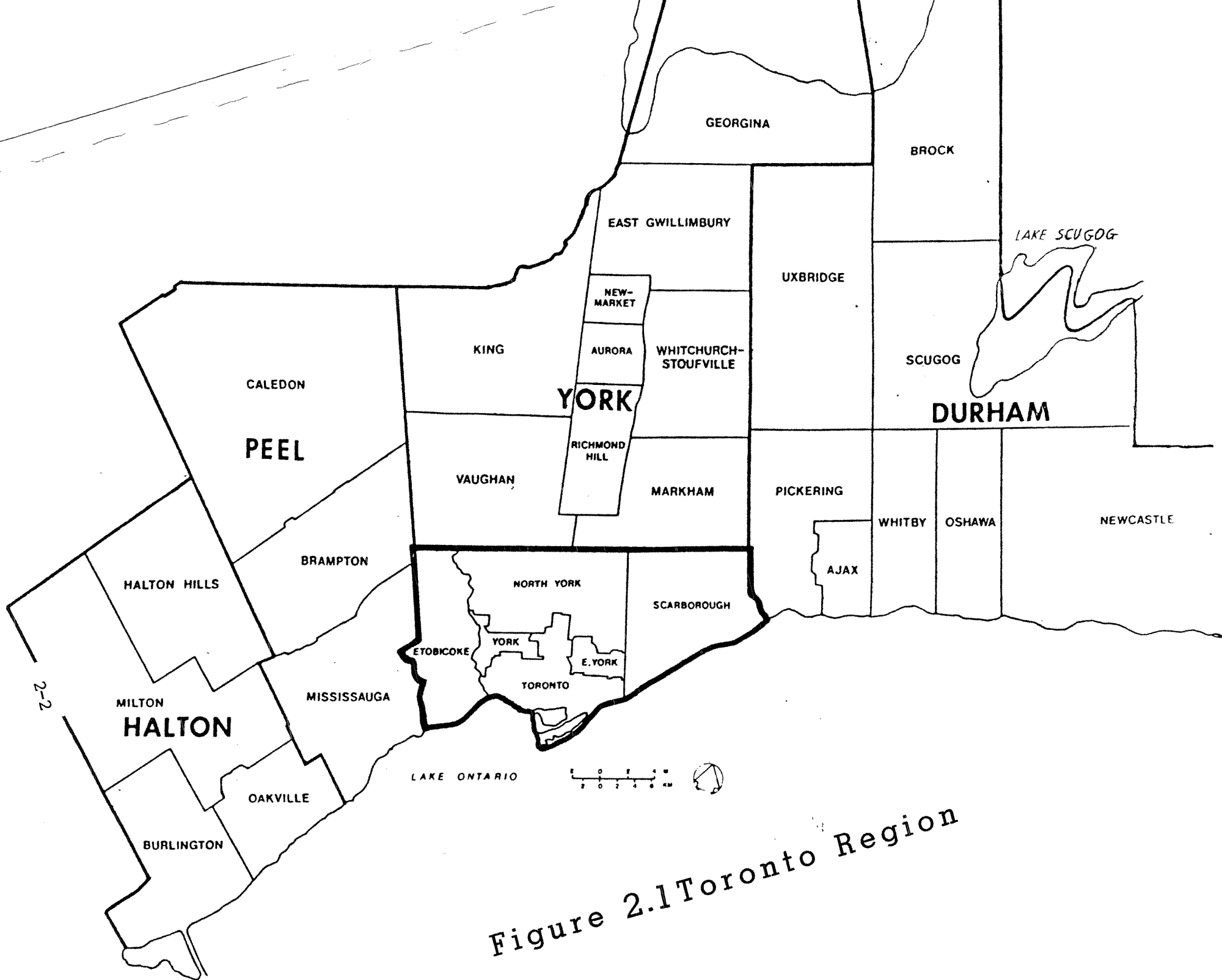


Figure 2.1 Toronto Region

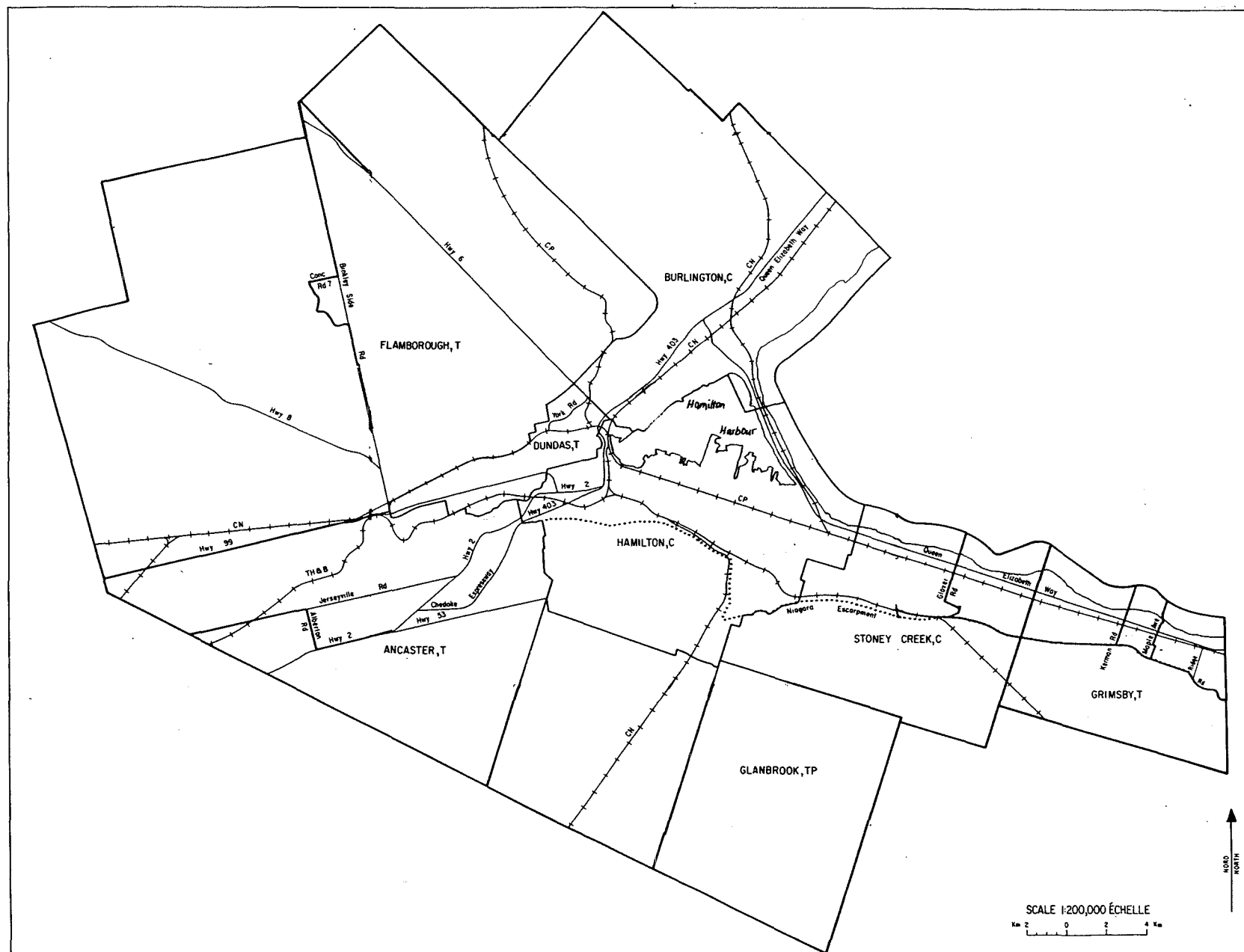


Figure 2.2 The Hamilton Urban Area

third, the availability of land space resources for residential and associated commercial and institutional land-uses.

4. It is the regional infrastructure pattern of express-ways, Lake Ontario oriented sewer networks and regional transit systems which has set the stage for the growth of the Toronto and Hamilton urban regions, and thus ultimately determine the growth of the area municipalities that constitute Halton Region.

2.3 Recent Population Development: Region of Halton

A shift in the growth pattern in Halton Region over the past five years has occurred. Previously, the City of Burlington had been the major growth area, but now the Town of Oakville is the front runner of rapid expansion for the Region of Halton.

For the Region as a whole, the population grew from 228,497 to 253,883 between 1976 to 1981. By 1986, a total of 271,387 was reached. In terms of percentages, the population grew by 11.11% from 1976 to 1981, and 6.9% from 1981 to 1986. With respect to the distribution of growth within the four municipalities, the following observations have been made.

1. Growth in the eastern part of the Region, i.e., the Oakville area municipality, has been the result of the changes in the Toronto Region. These changes are namely:

(i) the rapid growth of the Toronto Region;

(ii) the depletion of the land supply of southern Mississauga; and

(iii) the increased decentralization of the employment to nearby locations such as the Mississauga City Centre.

These developments have caused a rapid upsurge in growth in the Town of Oakville. **From 1981 to 1986, almost 65% of the growth of Halton, or 11,334 accrued to Oakville, compared to 27%, or 6,823 for the period 1976 to 1981.**

2. Growth in the Burlington area is impacted by developments in both the Toronto Region and the Hamilton area. Being at a somewhat greater distance from the most rapidly growing employment locations of the Toronto Region, it has grown more slowly. The Hamilton urban area has not been growing at

the same rate as the Toronto urban area, hence, putting less pressure on the Burlington sector. **From 1976 to 1981, the City of Burlington contributed over 40% of the growth in Halton Region, or 10,539. This was not the case from 1981 to 1986, when its contribution to the growth of the Region of Halton declined to 10%, or 1,822.**

3. As the remaining urban residential areas in the City of Burlington are in the north-central part of the municipality, they are generally further away from the expanding growth frontier of the Toronto Region than those in Oakville. This is another contributing factor to the slower growth in Burlington during this period.

4. Both the Milton urban area and the urban communities in Halton Hills are faced with servicing constraints, and are therefore unable to accommodate even that growth which would otherwise accrue to them.

The next section continues by discussing briefly the development of the Halton Region within the context of the Toronto Region and the Hamilton area. By examining the growth of Halton Region in its broader geographic context, the Region's future growth can be better assessed.

2.4 Population Growth of the Toronto Region

The Toronto Region is defined as the area comprising Metropolitan Toronto, and the Regions of Halton, Peel, York and Durham (as shown in Figure 2.1).

In 1971, the population of the Toronto Region was 2.923 million and represented 37.9% of the Ontario population of 7.703 million. By 1981 the Toronto Region population had grown to 3.418 million, encompassing 39.6% of Ontario's 8.624 million population. This growth is higher than the 8.9% experienced by the rest of Ontario (i.e., the province of Ontario excluding the Toronto Region) and the 12% growth experienced in Ontario as a whole.

The Toronto Region's absolute growth from 1951 to 1961 was 739,000, while for the 1961 to 1971 period it was 801,000. By contrast, between 1971 and 1981, a much lower population growth of 497,000 was achieved. For the rest of Ontario population growth was also considerable, with 1.207 million during the 1950's and 665,000 through the 1960's and 425,000 during the 1970's. For the first half of the present census decade of 1981 to 1986, the Toronto Region grew by 315,000 while the rest of Ontario grew by 161,000.

- Projections for the coming decades in the Toronto Region show that the population will continue to grow, although at a reduced rate. By the year 2011, a conservative growth estimate puts the population in the neighbourhood of 4.7 million people.
- Of great significance is the spatial shift of the Toronto Region.

a) All of the growth must be accommodated in the growth frontier of the Region of Peel, York, Durham, and Halton.

b) Metropolitan Toronto will either stabilize in population or experience an absolute decline.

For the western part of the Toronto Region, the historical development of the Region of Peel has been based solely on the growth influence of the Region as a whole. From regionalization in 1974, total population in the Region of Peel increased from 330,600 to 548,500 in 1984, an increase of 227,900 persons or 69%, and an average of 22,790 annually. Both the City of Mississauga and the City of Brampton experienced, and continue to experience tremendous population growth.

- During much of this time the Town of Oakville implemented municipal policies designed to discourage growth.

At the current rate the City of Mississauga will become completely urbanized in a few years. Already almost all of the lands to the south of Expressway 403 have been developed. Growth in Mississauga will concentrate mainly in the area just south of Highway 401.

- Oakville is currently experiencing a rapid growth phase because of the land depletion of preferred locations in the City of Mississauga. This rapid growth phase can be expected to increase dramatically in the very near future. Burlington is also affected, but to a much lesser extent.

Peel Region will continue to be a major component of the "growth frontier" of the Toronto Region in the near future, as the "Hole in the Doughnut" in Mississauga develops rapidly. The City of Brampton is expected to continue to grow rapidly also.

2.5 Population Growth of the Hamilton Area

The Hamilton urban area is defined the same as Census Metropolitan Area of Hamilton, which is comprised of the City of Hamilton, City of Burlington, Town of Flamborough, Town of Ancaster, City of Stoney Creek, Town of Grimsby and Glanbrook Township (as shown in Figure 2.2).

Between 1971 and 1986, this area registered 11.7% growth in population, from 498,523 to 557,029. While a growth of 6.2% is assumed in the first five years of this period, population increase was only 2.4% from 1976 to 1981 and 2.8% from 1981 to 1986. In terms of absolute growth, the increase in this region was 30,484, 12,724 and 14,134 with respect to the three census periods between 1971 and 1986. In contrast to the Toronto Region, growth has been slower in the Hamilton Region.

2.6 Conclusions

In conclusion, due to different growth pressure from the Toronto Region and the Hamilton area, a different growth pattern is emerging in Halton.

- The key finding is that the population of Halton Region will not only grow more rapidly in response to growth in the Toronto Region, but the distribution amongst area municipalities will change sharply in favour of the Oakville urban area.

PART THREE

STAMM POPULATION PROJECTIONS

3.1 Introduction

Of the population projections provided by the Region of Halton, none has given a distribution of the totals by the ten waste generating zones used in the Environmental Assessment of landfill sites. The projected population totals used by Watson in determining future waste quantities for Halton Region are provided in the Watson EPA Review Report, (Exhibit H-15). The distribution of the population by the ten zones is provided in Table 6 of "Transportation Assessment" by Giffels Associates Limited, in the Final Technical Report No.1 Phase 2, Stage 2C (Giffels Transportation Assessment Stage 2C, Exhibit H-31). This distribution is indicated by the proportion of waste generated in each zone; a change in distribution occurred only once during the entire planning period of twenty years. This simplification does not reflect reality and is deemed inadequate.

Three sets of population projections have been prepared by this firm independent of estimates provided by the Region. These population projection sets use existing population as a base and, adjust the future population to reflect the emerging growth pattern. They are based on an in-depth evaluation of the growth of the Toronto Region and its distribution, with focus on the area municipalities of Halton Region.

3.2 Discussion of Stamm Projections: Region of Halton Totals

There are three population projection sets: high, medium, and low, as presented in Table 3.1, 3.2, and 3.3.

While these three population projections have been prepared in 1987, they are still valid in our opinion. These estimates are current with respect to recent development in the demography in the Toronto Region. Moreover, these projections are not derived from a "top-down" approach but are aggregations from growth estimates determined on a small scale.

Table 3.1**Stamm Population Projection Low**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6000.	6950.	8500.	8500.	8500.
2 Burlington S	107838.	118420.	128950.	136440.	143300.	146200.
3 Burlington N	3688.	4240.	4880.	5500.	6300.	7500.
Burlington	116673.	128660.	140780.	150440.	158100.	162200.
4 Oakville NW	321.	350.	400.	500.	600.	1000.
5 Oakville S	83006.	90150.	96100.	98200.	99500.	101000.
6 Oakville NE	3780.	11000.	21000.	30500.	39400.	52300.
Oakville	87107.	101500.	117500.	129200.	139500.	154300.
7 Milton S	26937.	27400.	27962.	29744.	31525.	33257.
8 Milton N	5100.	5600.	5900.	6300.	6700.	7150.
Milton	32037.	33000.	33862.	36044.	38225.	40407.
9 Halton Hills W	12000.	13400.	14800.	15600.	16200.	16400.
10 Halton Hills E	23570.	25600.	28400.	29900.	31000.	31500.
Halton Hills	35570.	39000.	43200.	45500.	47200.	47900.
Total Halton Region	271387.	302160.	335342.	361184.	383025.	404807.

Source: Statistics Canada 1986

Projections by Stamm Economic Research Associates.

Table 3.2**Stamm Population Projection Medium**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6250.	7120.	8500.	8500.	8500.
2 Burlington S	107838.	127286.	134111.	141274.	145500.	150328.
3 Burlington N	3688.	4640.	5580.	6528.	7500.	8600.
Burlington	116673.	138176.	146811.	156302.	161500.	167428.
4 Oakville NW	321.	1137.	6008.	9641.	14867.	20093.
5 Oakville S	83006.	93007.	98169.	100054.	101000.	103434.
6 Oakville NE	3780.	14663.	25335.	42379.	51892.	61405
Oakville	87107.	108807.	129512.	152074.	167759.	184932.
7 Milton S	26937.	27400.	28316.	30613.	32885.	35257.
8 Milton N	5100.	5600.	6200.	6950.	7725.	8400.
Milton	32037.	33000.	34516.	37563.	40610.	43657.
9 Halton Hills W	12000.	13400.	14800.	15700.	16400.	16600.
10 Halton Hills E	23570.	25600.	28400.	30200.	31300.	31700.
Halton Hills	35570.	39000.	43200.	45900.	47700.	48300.
Total HaltonRegion	271387.	318983.	354039.	391839.	417569.	444317.

Source: Statistics Canada 1986

Projections by Stamm Economic Research Associates.

TABLE 3.3**Stamm Population Projection High**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6400.	7320.	8500.	8500.	8500.
2 Burlington S	107838.	128960.	136400.	142950.	151600.	160000.
3 Burlington N	3688.	4840.	5980.	6800.	8100.	9500.
Burlington	116673.	140200.	149700.	158250.	168200.	178000.
4 Oakville NW	321.	2137.	8008.	13500.	21050.	30566.
5 Oakville S	83006.	93007.	98169.	100054.	101000.	103434.
6 Oakville NE	3780.	18663.	28995.	43330.	57665.	70000.
Oakville	87107.	113807.	135172.	156884.	179715.	204000.
7 Milton S	26937.	30050.	32600.	36000.	39800.	43257.
8 Milton N	5100.	6000.	7654.	8569.	10000.	11743.
Milton	32037.	36050.	40254.	44569.	49800.	55000.
9 Halton Hills W	12000.	13600.	15100.	15900.	17100.	18300.
10 Halton Hills E	23570.	26600.	29700.	31150.	34000.	36700.
Halton Hills	35570.	40200.	44800.	47050.	51100.	55000.
Total HaltonRegion	271387.	330257.	369926.	406753.	448815.	492000.

Source: Statistics Canada 1986

Projections by Stamm Economic Research Associates.

In forecasting the future population of the municipalities, the detailed zone structure presented in the Appendix for Oakville and Burlington is applied. Future growth is allocated to each of these zones in accordance with the overall growth pattern in the Toronto Region and the demand and availability of land. In the process, aerial photographs and secondary plans were consulted. By examining growth patterns at such a small scale, areas where growth would likely occur could be identified. To facilitate comparisons between our estimates and those of the Region's, population totals for these smaller zones are subsequently aggregated into the larger waste generating zones shown in Figure 1.1.

For Halton Hills and Milton, projections have been based on the waste generating zones.

The three Stamm projection sets are outlined below:

- The first projection set would see the population of the Region of Halton at about 404,800 by the year 2011, with strong growth from 1986 to 1996.
- The second projection set would see a somewhat higher outcome at just over 444,300 by the year 2011. Again, the first decade would experience rapid growth.
- The last projection set would see growth in Halton Region reaching 492,000 by 2011.

Figure 3.1 graphically illustrates the three population forecasts to the year 2011 for the Region. The difference between these three sets of projection is based on the assumptions made with respect to growth expected in the Toronto Region and its distribution along the growth frontier. As such, the spatial distribution of growth along the corridors that radiate from Toronto would affect the extent of growth in Halton.

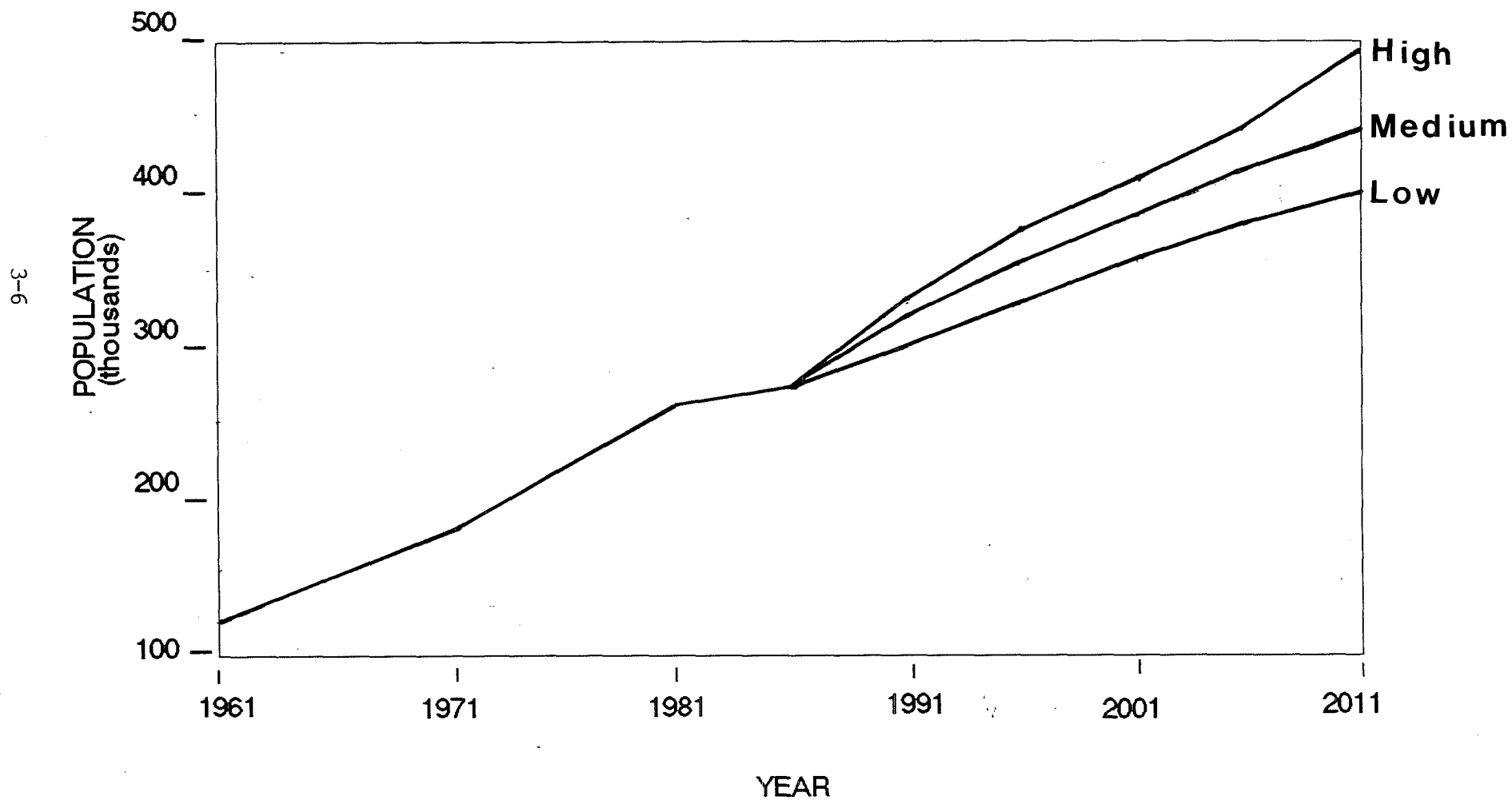
3.3 Population Estimates by Zone

Within Halton Region, future growth is allocated unequally among the four area municipalities.

- **Oakville**

Oakville will assume the highest growth in the Region during the 1986 to 2011 period. Population for 2011 is expected to double from the 1986 level. The projected level for 2011 ranges from

FIGURE 3.1
STAMM POPULATION PROJECTIONS
REGION OF HALTON



154,300 to 204,000, a significant increase from 87,107 in 1986. By proximity, as Mississauga runs out of land in the foreseeable future, accelerated growth in Oakville is anticipated.

- **Burlington**

With respect to Burlington, growth in this municipality varies from a low of 162,200 to a high of 178,000 in 2011. This represents an increase of between 39% and 52% from the 1986 totals. Overall, the pace of growth in Burlington will be slower than that of the 1970s. Growth in Burlington will be of a smaller magnitude than that of Oakville since it is further away from the growth frontier of Toronto. As most of its remaining urban residential lands are in the north-central part of the municipality, they are less likely to benefit from the spill-over growth from Oakville and Mississauga to a great extent in the immediate future. In addition, the eastern parts of Burlington north of the QEW are designated as industrial areas. Furthermore, the servicing system in Burlington is such that growth will start from the central part of the municipality and move easterly.

- **Milton**

While population for Milton is projected to reach a range from 40,407 to 55,000 or 26% to 72% in 2011 from its 1986 population of 32,037, growth in this municipality is curtailed by the availability of water and services. However, more substantial growth in this area can be expected if a lake-based sewage treatment and water systems are provided.

- **Halton Hills**

Similarly, growth in Halton Hills is constrained by its current service capacity. Population in 2011 will reach a level between 47,900 and 55,000, an increase in the range of 35% to 55% from 35,570 in 1986.

3.4 Population Estimates by Zone

The emergent population growth pattern for the Region of Halton can be reviewed in terms of sub-areas and the level of expected growth.

- For the City of Burlington, the Burlington South Zone would assume most of the growth in this area.
- For the Town of Oakville, Oakville South Zone would continue to grow to some extent, but its capacity to expand is limited. Oakville North-East Zone will receive most of the spillover from Mississauga and will be the area of highest growth in this municipality. As the growth pressure is exerted on Oakville North-East Zone, Oakville North-West Zone would start to develop as well.
- Milton South Zone, the urban portion of Milton would take on more population growth than the Town's rural portion.
- In Halton Hills, Halton Hills East would assume more population increase than the Town's western zone.

PART FOUR

POPULATION PROJECTIONS: A REVIEW

4.1 Introduction

In this part of the report, comparison is made between population projections prepared by this firm and those of the Region's. Stamm's projections are compared to a) figures used by Watson's EPA Review report, (Exhibit H-15), and b) other forecasts prepared by the Regional staff or on their behalf.

Although updates to the regional projection were made available to Watson since the publication of the Watson report (Exhibit H-15), none of those were incorporated into the material presented by Watson. In order to facilitate comparisons with the more recent March 1987 projections, this firm disaggregated the area municipal projections into the 10 zones.

4.2 Projection Used by Watson

In Watson's waste quantities analysis (Exhibit H-15, p.25), a population of 364,600 was used as the estimate for Halton Region for the year 2006. This growth scenario is comparable to the December 1985 medium population forecast by Halton Planning Department (Exhibit H-15, p.105). The year 2011 population from that medium projection is 389,000.

In the Stamm Medium Projection, a total population of 417,569 is the estimate for 2006 and 444,317 for 2011.

- In our view, the population projection used in Watson's analysis is too low. The more recent projections by the Region indicate a higher growth in population is anticipated for the next 25 years.
- Furthermore, as the growth pattern in Halton is changing fundamentally, with growth more likely to accelerate in the eastern part of the region versus the western part, the distribution among the ten waste generating zones is likely to change quite dramatically. By having the proportion of this distribution vary

only once, in 1996, this changing population pattern is not reflected in the Watson analysis.

4.3 Review of Region's March 1987 Projection

A recent population projection prepared by the Region of Halton's Planning Department in March 1987 established 361,600 as the "low", 376,000 as the "medium" and 419,300 as the "high" projection for 2006 (Population Projection Report, March 1987, Exhibit B-90). The medium projection in this scenario is already 11,400 or 3.1% higher than the 364,600 figure employed in Watson's analysis. Compared with Stamm's projections, these March 1987 figures are generally lower (see Table 4.1).

Figure 4.1 illustrates the three March 1987 population forecasts made by the Region graphically. In all instances, higher growth is expected in the more recent forecasts than those projected in December 1985.

4.4 IBI Group's Review of Projection for Halton

In examining a number of population projections for the region of Halton prepared by various agencies, the IBI Group, in its November 1987 report entitled "Halton Urban Structure Review: Phase One Study - Investigation of Development Opportunities" (Exhibit B-542), came to the following conclusion. Quoting from the report directly:

- "We propose to base our planning for Halton Urban Structure Review on a range of 386,000 to 474,000 people by 2011, with a "most likely" estimate of 430,000 representing the mid point of the range".

The upper end of the range described here has been obtained from the GO-ALRT Land Use Scenario A projection which was prepared in March, 1983.

It should be noted that these numbers are significantly higher than the scenario used by Watson. The 430,000 "mid-point" is comparable to the Stamm 444,317 "mid-point".

FIGURE 4.1

REGION'S POPULATION PROJECTIONS
REGION OF HALTON

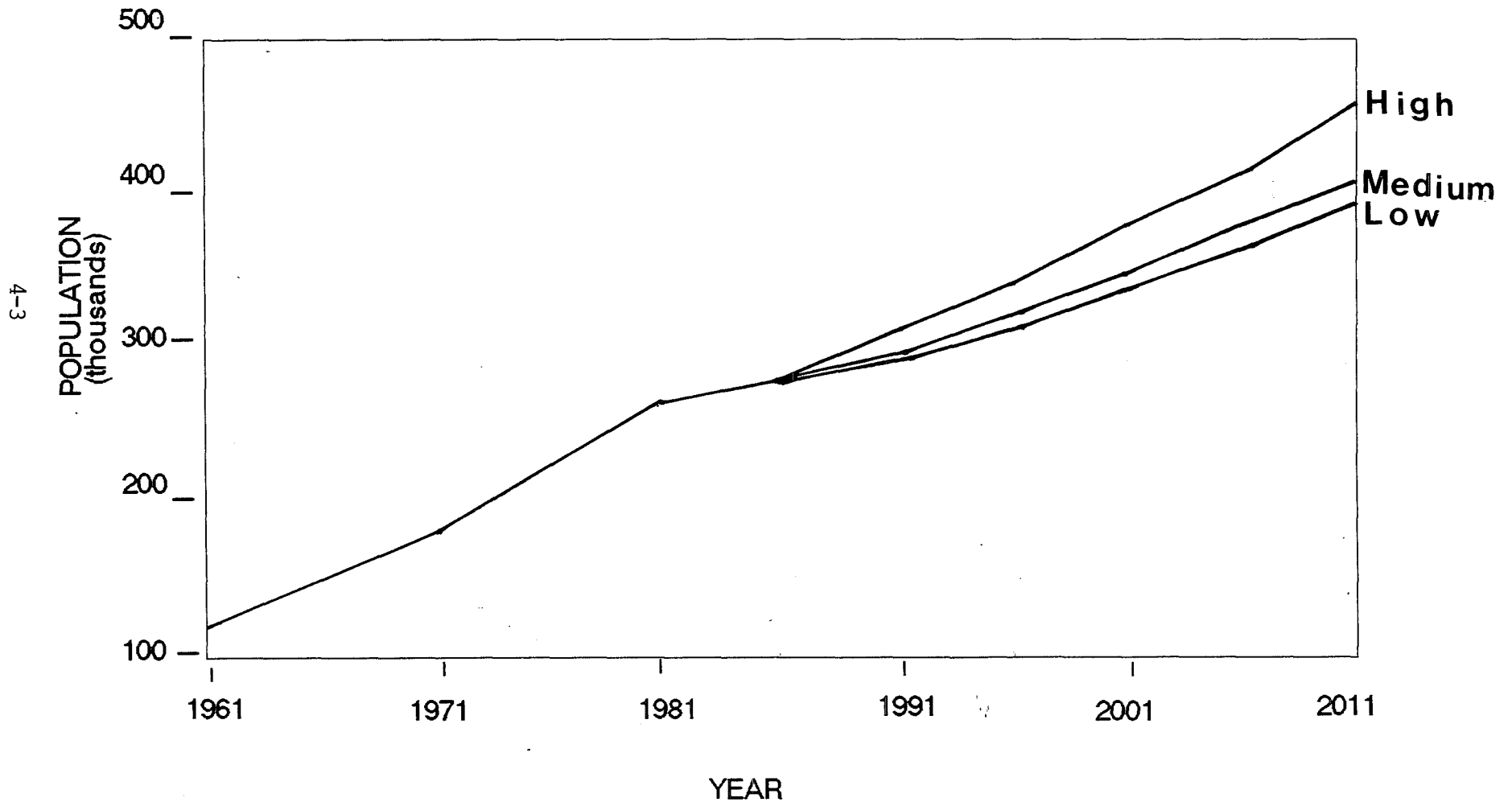


Table 4.1**Comparison of Population Projections**

	1986	1991	1996	2001	2006	2011
Region's December 1985						
Low	266200.	282700.	303800.	327300.	350600.	373700.
Medium	267300.	286600.	311800.	338800.	364600.	389000.
High	269900.	295800.	328000.	362600.	400200.	438400.
Region's March 1987						
Low	270291.	287000.	311000.	336600.	361600.	386200.
Medium	270291.	290500.	316500.	346800.	376000.	403900.
High	270291.	309800.	342800.	380100.	419300.	459000.
Stamm's						
Low	271387.	302160.	335342.	361184.	383025.	404807.
Medium	271387.	318983.	354039.	391839.	417569.	444317.
High	271387.	330257.	369926.	406753.	448815.	492000.

*Source: Stamm Economic Research Associates
Watson EPA Review of Waste Quantities (Exhibit H-15)
Population Projection Report March 1987 (Exhibit B-90)*

4.5 Distribution of Region's March 1987 Projections by Zones

In order to facilitate comparison on an equivalent basis, this firm has utilized the Region's March 1987 projections and allocated the sub totals by area municipalities into the ten waste generating zones. The distribution of these three population by the Region, low, medium and high are presented in Table 4.2, 4.3 and 4.4.

Comparing these projections with those of Stamm, the main differences are outlined in the following:

- While in the Stamm projections, Burlington is expected to reach a grand total between 162,200 to 178,000 in 2011, those by the Region ranges from 161,100 to 175,600 in 2011. Hence, the two estimates by these independent sources are generally similar.
- With respect to projections for Oakville, the Stamm totals are from 154,300 to 204,000, these are significantly higher than the 134,500 to 170,000 range suggested by the Region's for the year 2011. Recent projections by Oakville Planning Department estimated that the Town of Oakville will reach a total of 140,000 by the year 2001.
- Growth anticipated in Milton by the year 2011 from the two sources show minor discrepancies; Stamm's low is 40,407 as compared with Region's 42,900 and Stamm's high is 55,000 as compared with 53,500.
- For Halton Hills, the variation between the two projections is also relatively small, from Stamm's range of 47,900 to 55,000 in 2011 to Region's estimates of 47,700 to 59,900 of the same year.

4.6 Conclusions

As shown in Table 4.1, regional totals by Stamm are generally higher than those projected by the Region. However, the main difference between Stamm's projection and the Region's lies in the distribution among the four municipalities.

- Whereas the Stamm Projections call for the Town of Oakville to absorb a disproportionate share of the growth, by virtue of its location adjacent to Mississauga, the development of the 403, and the rapid growth of employment to the east of Halton, the

Table 4.2**Region's Population Projection Low**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6000.	6950.	8500.	8500.	8500.
2 Burlington S	107838.	111750.	121570.	128300.	136900.	145100.
3 Burlington N	3688.	4240.	4880.	5500.	6300.	7500.
Burlington	116673.	123600.	133400.	142300.	151700.	161100.
4 Oakville NW	321.	350.	400.	500.	600.	1000.
5 Oakville S	83006.	90150.	94100.	97200.	99500.	101000.
6 Oakville NE	3780.	4300.	11000.	17800.	24900.	32500.
Oakville	87107.	94800.	105500.	115500.	125000.	134500.
7 Milton S	26937.	26200.	26400.	29600.	32700.	35600.
8 Milton N	5100.	5300.	5500.	6200.	6700.	7300.
Milton	32037.	31500.	31900.	35800.	39400.	42900.
9 Halton Hills W	12000.	12400.	13000.	13800.	15000.	16000.
10 Halton Hills E	23570.	24700.	27200.	29200.	30500.	31700.
Halton Hills	35570.	37100.	40200.	43000.	45500.	47700.
Total Halton Region	271387.	287000.	311000.	336600.	361600.	386200.

Source: Population Projection Report March 1987 (Exhibit B-90)
 Zonal Distribution by Stamm Economic Research Associates

TABLE 4.3**Region's Population Projection Medium**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6250.	7120.	8500.	8500.	8500.
2 Burlington S	107838.	113310.	122000.	129500.	138700.	146800.
3 Burlington N	3688.	4640.	5080.	6500.	7500.	8600.
Burlington	116673.	124200.	134200.	144500.	154700.	163900.
4 Oakville NW	321.	350.	1000.	1500.	3000.	5000.
5 Oakville S	83006.	90500.	95700.	98200.	100100.	102000.
6 Oakville NE	3780.	6850.	13500.	23800.	33300.	42400.
Oakville	87107.	97700.	110200.	123500.	136400.	149400.
7 Milton S	26937.	26200.	26400.	29600.	32700.	35600.
8 Milton N	5100.	5300.	5500.	6200.	6700.	7300.
Milton	32037.	31500.	31900.	35800.	39400.	42900.
9 Halton Hills W	12000.	12400.	13000.	13800.	15000.	16000.
10 Halton Hills E	23570.	24700.	27200.	29200.	30500.	31700.
Halton Hills	35570.	37100.	40200.	43000.	45500.	47700.
Total Halton Region	271387.	290500.	316500.	346800.	376000.	403900.

Source: Population Projection Report March 1987 (Exhibit B-90)
 Zonal Distribution by Stamm Economic Research Associates

TABLE 4.4**Region's Population Projection High**

	1986	1991	1996	2001	2006	2011
1 Burlington NW	5147.	6400.	7320.	8500.	8500.	8500.
2 Burlington S	107838.	116360.	126600.	137000.	147600.	158500.
3 Burlington N	3688.	4840.	5980.	6800.	8100.	8660.
Burlington	116673.	127600.	139900.	152300.	164200.	175600.
4 Oakville NW	321.	1140.	2900.	8600.	12900.	17600.
5 Oakville S	83006.	93010.	96200.	98200.	100100.	102000.
6 Oakville NE	3780.	15850.	25900.	34200.	42500.	50400.
Oakville	87107.	110000.	125000.	141000.	155500.	170000.
7 Milton S	26937.	27300.	28500.	32700.	37700.	44000.
8 Milton N	5100.	5600.	6000.	6500.	8000.	9500.
Milton	32037.	32900.	34500.	39200.	45700.	53500.
9 Halton Hills W	12000.	13400.	14800.	15900.	17100.	18900.
10 Halton Hills E	23570.	25900.	28600.	31700.	36800.	41000.
Halton Hills	35570.	39300.	43400.	47600.	53900.	59900.
Total Halton Region	271387.	309800.	342800.	380100.	419300.	459000.

Source: Population Projection Report March 1987 (Exhibit B-90)
Zonal Distribution by Stamm Economic Research Associates

Region's projection shows Burlington taking a larger share of the growth. **In summary, the projections are similar with respect to the absolute growth of Burlington, but differ with respect to growth in Oakville.**

In our view the population projections used by Watson on behalf of the Region as a basis for its waste generation estimates are not only low, but the distribution does not sufficiently take into account of the likely shifts. Given the current development trends, the Town of Oakville will likely reach a higher total population than the City of Burlington in the future.

Appendix

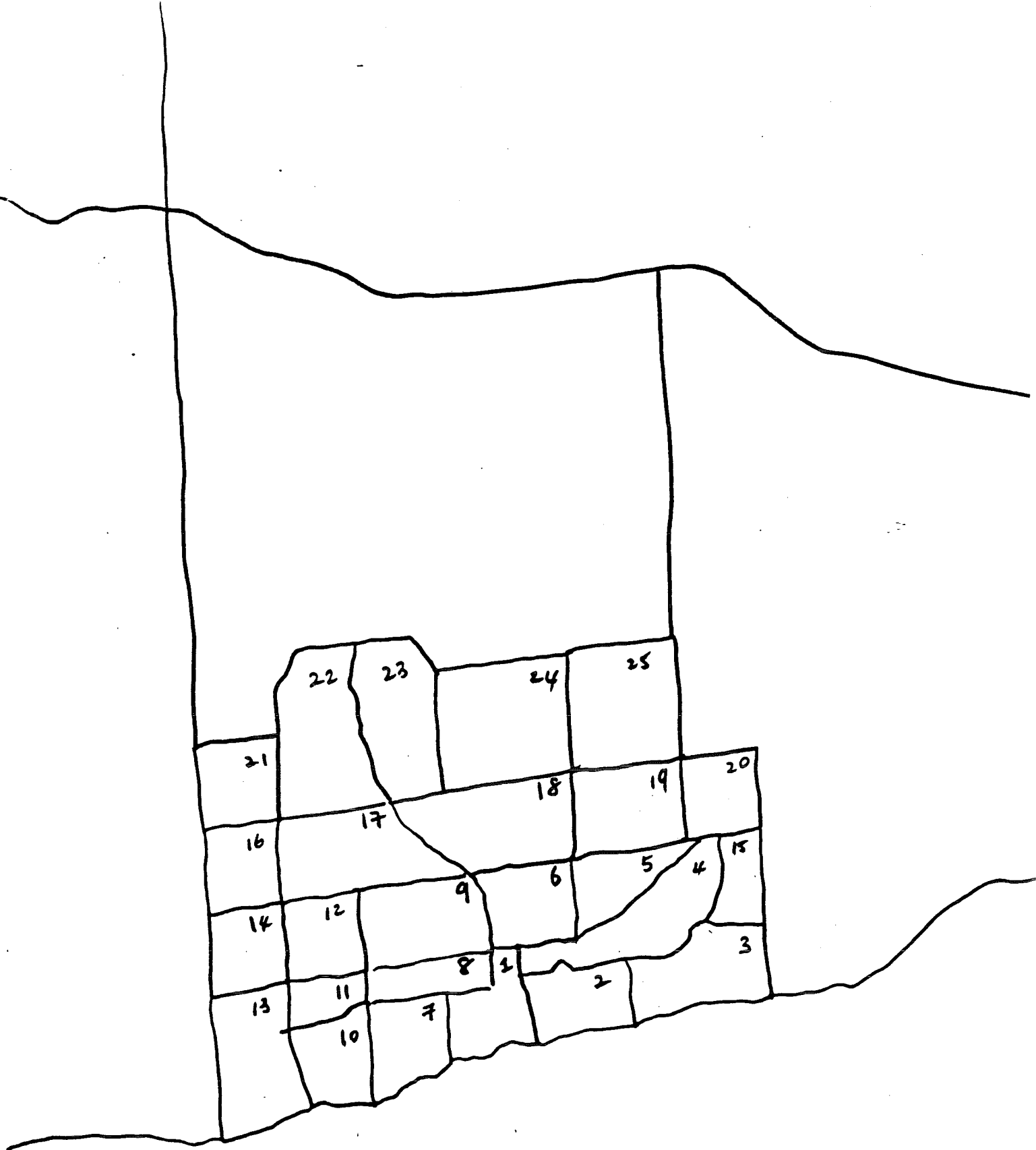
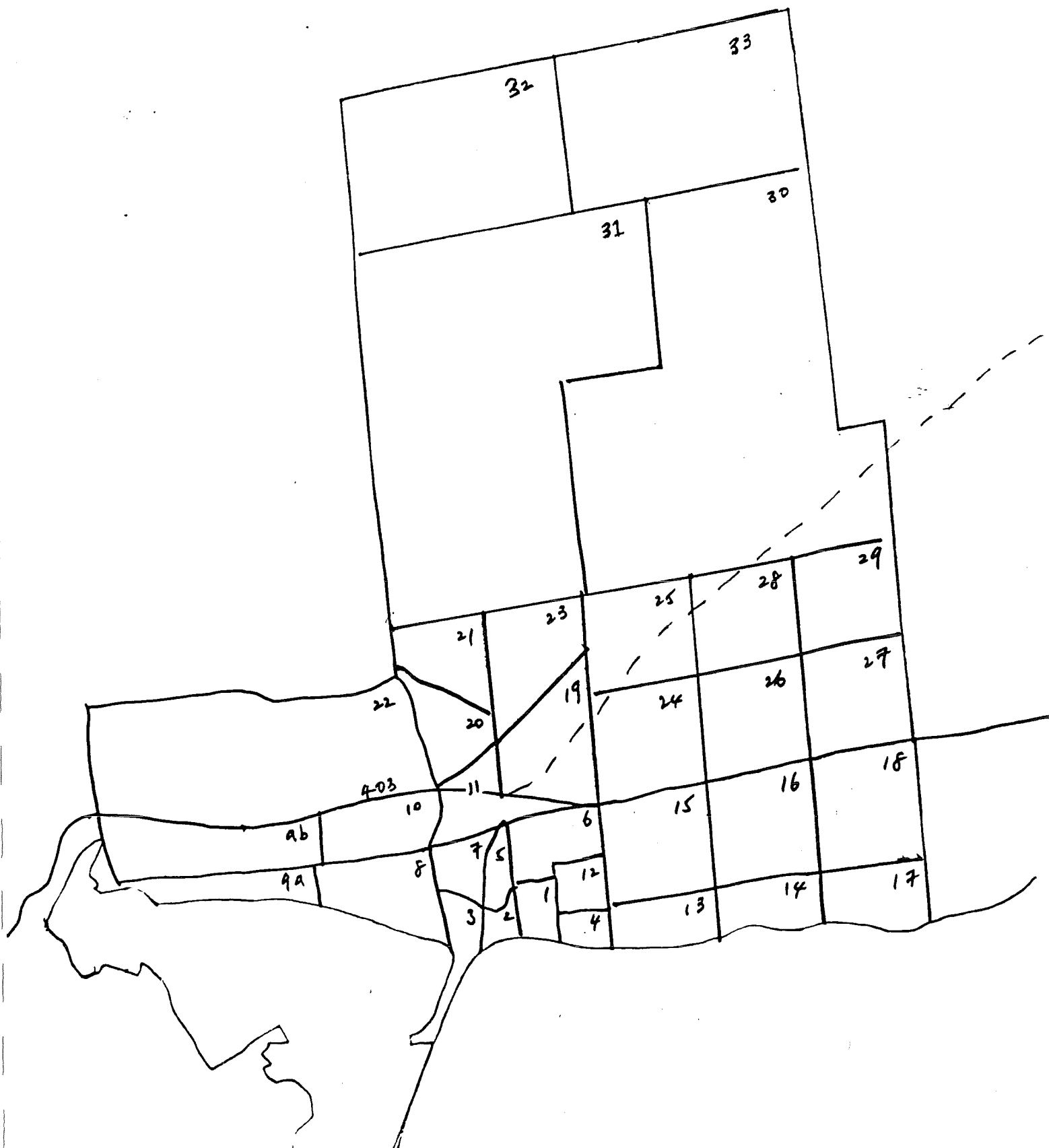


Figure A.1 Stamm Zone Structure:

Town of Oakville

Figure A.2 Stamm Zone Structure:

City of Burlington



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