COMMUNITY ATTITUDES

TOWARDS

LANDFILL SITES

BY

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Abstract

This research paper allows for an analysis of community attitudes towards a solid waste site. The site under investigation is located in the Region of Halton, between highway 25 and First Line, approximately one-half km south of Britannia Road. The main objective of the study is to identify common themes expressed by the respondents who participated in the in-depth interviews. The second objective is to identify variations between the respondents interviewed. The information for the study was obtained from various sources: in-depth interviews, provided the individual responses to pre-set questions, in order to find out their attitudes regarding the site. Epidemiologic survey data provided information for a variety of indicators, which demonstrated awareness and concern levels. While the community profile provided information on the general characteristics which shape the functioning of the area surrounding the site. The results show that the three aforementioned sources of information provided similar information and responses. The in-depth interviews provided the most "personalized" results, the survey data provided a good representation of the populations's feelings and concerns and the community profile substantiated the findings from the above two sources and placed them in context.

ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

In recent years, there has been a growing concern and awareness about environmental issues. Society has been made increasingly aware of the possible negative effects of the environment by such highly publicized events as the contamination in Love Canal. Therefore many people have become conscious of how they treat the environment; and measures such as recycling and decomposing of garbage is being actively implemented. However, the issue of the allocation of landfill sites is one that is still very controversial and of increasing urgency as the need for more sites grows. Quite often, towns and cities are very reluctant to house these facilities in their communities, and as a result, communities are beginning to bind together in opposition to these sites.

The first objective of this study is to analyze common themes which underlie community attitudes towards landfill sites. These themes are examined using data from in-depth interviews conducted with residents living 4 km of a recently approved site in Halton Region. The second objective is to examine the variations in perceptions and attitudes among respondents interviewed.

The data used in this study has been derived from the on-going research being conducted by Dr. S.M. Taylor, et al. The study which is being carried out by Dr. Taylor et al is titled; "Psychosocial Impacts in Populations Exposed

to Solid Waste Facilities". The research is being conducted at three different sites (Glanbrook, SWARU and Milton) and is using a combination of epidemiologic and qualitative methodologies. For the purpose of this particular study, only the data from the Milton site and the qualitative approach of in-depth interviews will be used to address the question of community attitudes toward landfill sites.

The analysis involves using three types of data. An in-depth interview is a methodological approach which is qualitative in scope and allows for a conversation to flow between a respondent and a researcher. The merit of the in-depth interview is that it provides respondents with the ability to express their concerns without any limitations. However, a checklist of topics serves as the agenda for the interviews. Epidemiologic survey data and a community profile will also serve as secondary sources of data in order to substantiate the claims made by the in-depth interviews or to negate them.

The remainder of the thesis is organized into the following chapters. Chapter two is the literature review. It is the literature review which provides background information dealing with issues that have been addressed in previous studies regarding the allocation of landfill sites. Chapter three describes the research methods. These methods consist of a combination of community analysis, epidemiologic survey and in-depth interviews. Chapter four

presents the results of the research and includes findings from the epidemiologic survey, the community profile data and the analysis of the depth interviews. In the concluding chapter the key findings from the data are summarized and compared with the results of other related studies to determine the level of consistency.

Research of this nature can contribute to the study of health care and health care planning. This type of research is needed because there is a need for a fuller understanding of the psychosocial effects of environmental contamination. Also, this type of research addresses the impacts which are felt by communities, as well as individuals.

CHAPTER 2: LITERATURE REVIEW

2.1 <u>Introduction</u>

Considerable controversy surrounds the locations of solid waste sites, which are currently operating or are proposed.

Today, more then ever, the maintenance and preservation of a safe, clean and healthy environment is of top priority. Therefore, the presence of such a site can generate consequences which may be harmful and unwelcome to community members. It is with this in mind, that the purpose of this chapter is to review literature on community attitudes towards solid waste sites.

2.2 <u>Solid Waste and Public Health Effects</u>

In order to understand how solid waste sites affect public health and the environment, it is important to fully comprehend the difficulty of scientifically determining the public effects of solid waste disposal according to Anderson, 1987. Therefore, before one can proceed any further into this discussion, a clear definition of solid wastes and hazardous wastes are needed.

> Solid waste is any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community

activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act.(P.L. 94-580, Sec 1004[27]:42 USC 6902)

While the definition of a hazardous solid waste is as follows:

A solid waste, or combination of solid wastes, which of its quantity, concentration, or physical, chemical, or infectious characteristics may-(A) cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness; or (B)pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.(P.L 94-580, Sec. 1004[5]:42 USC 6902).

An actual application of the above definitions, can be seen in estimations made on different levels of solid waste accumulation. In 1977, it was found that the highest quantity of solid wastes was generated by the agricultural and the mining sectors. While the more toxic categories(sewage, sludge, hazardous, industrial wastes, radioactive substances) accounted for less than 2% of the estimated volume. The low percentage in the toxic categories should not lead one to believe that it is not of great importance.

Some of the problems of solid waste sites and incinerator sites which contribute negatively to public health and the environment are as follows: the organic

materials in the sites are fertile breeding grounds for bacteria and viruses that cause disease in humans. As well flies, mosquitoes and rodents contribute significantly in transmitting germs to individuals. Keswick and Gerba(1980) also suggest that contamination of the underground, by such disease causing organisms from the water seeping through dumps, is likely to include such viruses as hepatitis A, poliomyelitis and gastroenteritis. These viruses will in all likelihood lead to long term illnesses. Poor choice of sites, poor design, and careless maintenance of operations are further problems which contribute negatively to public health and the environment.

The presence of seagulls around solid waste sites, is another factor which affects public health and the environment. Seagulls threaten public safety by interfering with air traffic, which in turn can cause accidents or delays. As well, bird droppings from the gulls at the municipal landfills can contaminate reservoirs.

Fire and explosions are other possible hazards which can occur. The accumulation of methane, the main gas produced in the decomposition of the organic wastes is very toxic and concentrations as low as 5% can produce explosions. Methane is also very toxic to vegetation, as evidenced in many instances by dead vegetation around sites with high concentrations. Incinerators, although not as common, are used where solid waste sites are not feasible.

If the cost of land in crowded urban and industrial centers is greater than the cost of equipment, labour, operation and the maintenance of incinerators, then a incinerator site may be preferred. However, incinerators are not problem free, they have been blamed for causing air pollution, odors and the incomplete combustion of some hazardous substances. The above problems are occurring because the temperature control of incinerators is difficult due to: air turbulence, the creation of carbon dioxide and the dwelling time of the waste mass being burned.

Compounding the public health and environment problems, is the further EPA(Environmental Protection Agency) estimates that 90% of all hazardous wastes are improperly disposed of. These wastes are disposed in open pits, surface impoundments, vacant lots, farmland and in bodies of water. Furthermore, decisions about where dumping should occur is sometimes made with total ignorance of whether or not the land is suitable for dumping.

2.3 Psychosocial Impacts

In order to accurately assess the psychosocial impacts of solid waste sites on communities, it is necessary to define psychosocial impacts.

> Psychosocial impacts are the complex of dysfunction distress and disability manifested in a wide range of psychological and social impacts in individuals, groups and communities as the consequences of (actual or perceived) environmental contamination (Taylor et al,1990)

Along with psychosocial impacts, invisible contaminants must be carefully examined in this section. Invisible contaminants being substances that are environmentally invisible or medically invisible to assess (Vyner,1988). Although individuals encounter or experience many different kinds of psychological forces which affect their psychosocial status, two of the most relevant are uncertainty and stress.

There are many types of uncertainty which serve to affect psychosocial status. They include: previous exposure uncertainty, present exposure, evacuation, boundary, prognosis, treatment, coping, financial, significance of dose, latency, etiological and diagnostic uncertainty. These aforementioned uncertainties when compounded with invisible contaminants can lead to a painful and fear producing experience for an exposed person. In many instances, Vyner found that uncertainty regarding a particular hazardous situation was the most disturbing factor which affected the future functioning of the individual. Although not all of the twelve sources of uncertainty apply to every individual, it is safe to assume that combinations of them will be applicable in some way. Lang and Lang(1964) summarize the dilemma of uncertainty which face individuals: "The worst kind of threat...is the dread of the unknown".

Along with uncertainty, stress is another factor

which affects the psychosocial status of individuals. Stress as defined by Baum and Singer(1985) is:

> A process by which the environmental events threat harm or challenge an organisms existence or well being and which the organism responds to the threat.

Vyner has also proposed a predominant model in the field of stress called "The Stress and Coping Paradigm". This paradigm basically argues that psychological stress occurs when people encounter events that are threatening. A threat being understood to mean:

> A psychological state in which a person has decided by virtue of a variety of cognitive operations that a present event indicates that something harmful will be happening in the future.

Therefore the model can be used to look at human responses, to ambiguously threatening events. Lazarus and Folkman(1984) have proposed that response to environmental stress is divided into two basic stages. During the first stage, primary appraisal, the individual may appraise an environmental stressor as a threat. If this stage is not carried out, the individual cannot move to the secondary stage of appraisal where the individual asks: "What can be done?" The individual can do one of two things; he can do something about the environmental stressor(e.g. join an activist group to undermine the threat) or they can alter the way they feel about the stressor(e.g. tell themselves that it could have been something worse).

To conclude this section, it is important to note

that the psychosocial impacts which are results of solid waste sites are very varied and can affect individuals in different ways. They are by no means uniform for different communities affected.

2.4 Community Attitudes

Much work has been done on how the presence of solid waste sites affect and shape community attitudes. One such example is a study conducted by Edelstein(1988) on the community of Legler- a suburb of Jackson Township. Edelstein discovered five landscape changes which occur as a result of community acceptance of a toxic exposure. The first is a reassessment of the assumptions of good health. The second is a shift to pessimistic expectations about the future, resulting from the victims perceived loss of control over forces which now control them. Thirdly a change in perspective of environment as now being uncertain and potentially harmful. Fourthly, there is an inversion of a sense of home. And finally, a loss of trust and goodwill occurs. Along with these life-scape changes, there is a shift of perceptions across all time frames- past, present and future. For example, a previously unexplainable illness now can be understood.

Community attitudes towards solid waste sites can take many different forms. One such form is a new found preoccupation with health. At Love Canal, the mystery and

uncertainty that surrounded the contamination contributed to changes in the health status of many individuals. Along with health problems, personality disorders, financial hardship, lost work and loss of loved ones resulted from the contamination. However, in most cases, loss of control was the most disturbing, because victims feared that their ability to secure a healthy future was compromised. Furthermore, a loss of ability to plan for the future, and loss of trust in others, especially the government was very important. The loss of trust in government usually becomes very profound because the responses, which the government officials supply to the affected community members, usually falls short of their expectations. The officials are very evasive in their responses and are unwilling to accept of responsibility.

Community attitudes are also affected by the social context or perspective. For example, the perspective coming from an individual, from a couple, children or from outsiders(those not living in the affected communities). Individuals deal with the problem by either confronting it head on, or they enter a state of denial. A positive result of facing the problem is that, some people become effective activists for the community. In contrast, negative coping can result in bad habits such as increased smoking , bad dreams, changes in temperament, defensiveness, depression and self-blame (Edelstein,1988). Couples on the other hand,

tend to blame each other for their present situation. As a result, communication can suffer as well as a decrease in their sex lives. The child's perspective is unique because it is influenced by two sources: parental worry and personal experience. In many instances parents take out their frustrations on the children, while at the same time trying to enforce a completely new guideline for safety. Furthermore, if the child's parents are part of activist groups, they may be subject to upheaval in their own home for the sake of a meeting. Finally, an extreme result of parental worry is the actual removal of a child from their home- thus breaking up the family unit. The personal experiences which the children face can also shape the rest of their lives. They learn early on to be suspicious and wary of things, which to many is simply taken for granted. For example, in the Legler case, children became afraid to drink or bathe in ordinary tap water, due to possible contamination (Edelstein,1988). Finally, outsiders can be supportive of the affected community members or they can be their greatest hindrance. Outsiders can become tired of the victims preoccupation with the situation and in some cases they become suspicious of the actual validity of the claims made. This occurs due to the notoriety which the affected community generates, due to word of mouth or through the media.

2.5 Methodology of Studies

In order to carry out such studies, as the aforementioned one in Legler, an appropriate methodological approach must be considered. The McMaster study on which this thesis draws uses a combination of two methodological approaches. The quantitative approach is used in a epidemiological survey. While in contrast, the qualitative approach, will take the form of in-depth interviews. This approach is inductive and will test the relevance and comprehensiveness of impacts. Although each opinion reflects only a subset of possible issues, taken together a comprehensive view of overall concern can be assessed.

2.6 Conclusion

This literature review has shown that there are a lot of concerns regarding solid waste site locations and their effect on community members. Past studies have placed a lot of emphasise on resident feelings and attitudes towards the existing or proposed sites. For example the Legler case in Jackson Township and the Love Canal crisis in Niagara Falls. This paper will examine these feelings and attitudes with specific reference to the newly approved site in Milton.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research hypotheses

This study addresses two main research hypotheses. The two hypotheses are as follows: firstly, by examining in-depth interviews for 15 respondents, common themes will emerge regarding their attitudes towards a landfill site. Secondly, variations will also occur between the respondents being interviewed. The first hypothesis is concerned with commonalities and the second, is concerned with differences.

3.2 Data Source

The data used in this research was derived from three different sources. The primary source of data was in-depth interviews while the epidemiologic survey data and the community profile, compiled for the area surrounding the site, served as secondary data sources. The information for the in-depth interviews, was obtained from 15 different individuals, who resided within a 4 km radius of the site. These individuals were purposely selected from the sample group who had previously participated in an epidemiologic survey. Therefore, their involvement in the interviews stemmed from their willingness to be part of the on-going study. The in-depth interviews covered a very wide range of topics, ranging from how long the individual had lived in the area to whether or not they were environmentally

conscious. The wide range of questions posed, allows for a comprehensive portrayal of the individual's concerns, awareness levels, likes and dislikes with regard to specific situations.

The epidemiologic survey data provided a representative sample of the population. The sample design will comprise a disproportionate stratified random sample of 187 households within 4 km of the site in Halton Region. The sampling frame will consist of a list of eligible phone numbers compiled from city telephone directories. The eligible respondents will be adult members of the household with random selection procedures to ensure gender representativeness being carried out. The data derived from this source demonstrated levels of awareness, concern, and knowledge with respect to the existing situation and future developments.

While the community profile provides a general overview of the population surrounding the site, it will also provide information that will indicate how the attitudes of the residents will be shaped by the introduction of the site.

3.3 Methods of analysis

The primary data source, the in-depth interviews employs a qualitative approach to explore individual attitudes towards the landfill site. This qualitative

technique seeks to learn about the world of the respondent in an unrestrictive manner. An in-depth interview is a conversation, where the respondent is urged to relate his/her own experiences and attitudes. It allows the researcher to probe deeply, uncover new clues and secure vivid, inclusive accounts based on personal experience. This type of approach allows the conversation to flow and move in directions which the respondents want it to go. However, the researcher is armed with a checklist of topics which is necessary to the discussion. This checklist serves as an agenda to the researcher, in order for certain relevant issues to be addressed and evaluated. (Eyles et al, 1990)

Analysis of the survey data used descriptive statistics (frequency, median, mean and variance) to illustrate the prevalence of awareness, concerns and actions related to the site.

The community profile describes the characteristics which shape the area around the site. By utilizing such sources as government documents and quality of life studies a large body of information was derived regarding the area.

The use of the three sources of data is an asset to this research paper. The three sources complement and serve to enhance one another. The in-depth interviews and the survey data serve as the primary data to examine community attitudes towards landfill sites. The community

profile serves as a basis for analysing the social context for the two primary sources. For example, the in-depth interviews indicated that the individual have on average, lived in the area for more than 10 years. The community profile, lends support to this claim. It was found that in the area surrounding the site, tenure rates were approximately 90% while tenancy rates with less than 10%. Therefore, one could claim that the area surrounding the site is a non-transient community, as substantiated by the community profile.

CHAPTER 4: DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter will focus on the results of the data analysis. The purpose of the analysis was to determine whether common themes emerged from in-depth interviews with regard to community attitudes towards landfill sites. Secondly, to examine the variations which emerged between the same respondents. In order to get a comprehensive portrayal of the resident concerns a wide range of topics were addressed. These topics included: general regard for the area, likes/dislikes, concerns re: water, health, traffic volume and air/odour pollution and awareness of the activist groups which are operating and their effectiveness. In addition, an epidemiologic survey and a community profile were used to determine resident concern levels and to describe the general characteristics of the area around the site.

4.2 Community Profile

This detailed community profile on the Town of Milton provides a valuable source of information for interpreting the results from the in-depth interviews. Information on the following characteristics of the community are included: the social structure of Milton, the government structure and population forecasts.

4.2.1 Location

The Region of Halton is strategically located in the centre of the "Golden Horseshoe", the most densely populated and industrialized economy in Canada. The region is located at the western end of Lake Ontario between Toronto and Hamilton.(Figure 4.1, p.50) The Halton Region consists of four area municipalities: the City of Burlington, the Towns of Milton and Oakville and Halton Hills. The proposed landfill site(Site D) for the Halton Region is located between Highway 25 and First Line, approximately one-half kilometer south of Britannia Road.(Figure 4.1) The site is approximately 185 hectares in size.

4.2.2 Administration

The Halton Region is governed by a chairman and a 24 member regional council, elected for a two year term. The regional chairman is elected by the public at large. The elected membership comprises the four mayors of each municipality and in addition: eight council members from the City of Burlington, six council members from the Town of Oakville, two members from the Town of Milton and four members from the Town of Halton Hills. The councils of all area municipalities are elected on a ward system. The Milton council has ten councilors and one mayor, elected at large. The current mayor of Milton is G. Krantz.

The fact that the Town of Milton has only two

council seats on the regional council, may have been a contributory factor in the decision being made for the landfill site to be located there. The urban areas of Burlington and Oakville held the majority of the seats, therefore, when a vote was called upon regarding the landfill site the urban centers had the capability to and did defeat Milton.

4.2.3 Population

The total population of the Town of Milton is approximately 33, 000 with a projected increase to 45, 700 by the year 2006 (Planning and Development Dept:Regional Municipality of Halton/1986) Milton experienced the fastest rate of growth in percentage terms between the years 1975-80 of any of the four area municipalities. This growth occurred as a result of a supply of designated residential land, Milton's close proximity to the Highway 401 Corridor and to Mississauga and Toronto, both centres of rapid employment growth. Additional growth in the area was fueled by the anticipation and eventual implementation of the GO Train service. However, future population growth in Milton will depend on the timing of the resolution of current servicing constraints. In the Town of Milton, the majority of the population falls between the ages of 25-44. This relatively young population implies a potentially high level of concern about the proposed landfill site. Families

with young children quite often feel that their future has become compromised because of the intrusion of the landfill site. Therefore a reduction of control, planning for the future, and trust in the community begins to emerge. In Edelstein's work with the residents of Jacksonville, he found that the younger members of the community expressed these aforementioned concerns as a direct result of a landfill site being in proximity to their home. In comparison, an area with a more elderly population would not show the same degree of concern. Elderly people quite often have succumbed to the inevitable that they are in the last phases of their lives and, as such, are more content to play a more passive role in community matters.

4.2.4 Demographics

Milton can be characterized as an upper middle class community. The majority of the population have completed high school beyond grade 11. The predominant group in the community is of English ancestry(89.2%), followed by the French(1.1%), Dutch(1.1%), German(1.7%), Italian(2.2%), and all other (4.8%) The prevalence of English speaking individuals allows for the residents of Milton to be more vocal in their concerns-because a language barrier does not exist. Most of the adults are married and have no more than two children. Furthermore, Milton can be characterized as a non-transient community. It has a high rate of

homeowners(90%) and a tenancy rate of only about (9.2%).
The high level of home ownership demonstrates some qualities
about the residents: the residents are more active in the
community organizations, have a greater stake in the
community, are more resistant to neighborhood change, have
greater residential stability, and typically demonstrate a
greater degree of concern for the maintenance of their
homes. The dominant occupations of males are in the
managerial and administrative categories while for females
the dominant occupations are clerical. The average family
income(1989) is approximately $48,150. The average family
income illustrates that Milton is an area that may have a
lot of double wage earners. This finding affects whether or
not the population becomes involved in community issues and
to what extent. If the female of a household is working all
day, she may have little time to attend meetings at night.
The town of Milton typically has voted Liberal(1981, 1985,
1987) and as such concern for the "people" is a priority in
the administration of the government.

4.2.5 Official Plan Designations

The Regional Plan was adopted by the regional
council to solidify decisions as to how regional resources
will be devoted to meet the needs of Halton's residents
during the balance of the 20th century. The plan is also
intended to reflect the region's collective aims and

aspirations, as to the character of the landscape and the quality of life to be preserved and fostered within Halton. The objectives and goals which correspond to this research paper include:

- to protect environmentally significant areas of the regional landscape
- to protect significant tree covered areas
- to provide a system of government that is effective and efficient in the management of the affairs of the region as well as responsible to the public need and interest

4.2.6 Economy

The region of Halton is a very attractive location for business. There are five basic factors which influence the location decisions of firms: Market location -within 100 mile radius of Halton is located 24% of the Canadian manufacturing sector. Distribution -Halton is at a crossroads location of a rich market and interrelated system of major highways, railways, extensive trucking support and backup of the nearby St. Lawrence Seaway and international airports. Labour -Halton provides a well educated labour force with extensive manufacturing, clerical and retail experience. Sites -the suburban area provides ample room for business facilities to be laid out in the most efficient manner. Finally, Lifestyle -Halton provides a small suburban community lifestyle within easy commuting range of larger urban areas. Most of the population of Milton is employed. The majority of males are employed in administrative and

managerial positions, while females dominate the clerical field. Unemployment rates for Milton in 1989 were males 2.1% and for females 6.6%. The high levels of managerial and administrative positions held by the residents of Milton can be a clue as to how they will react or respond to the landfill site proposal. Typically, managerial and administrative positions are held by well educated individuals. It is these more highly educated people, who are more likely to voice their opinions and substantiate their claims. They have spent a large part of their lives developing the ability to analyze and assess problems, and, as such, they will be able to articulate a viable judgement on the potential positive or negative proponents of the landfill site. They are not novices to doing research and investigating particular issues- such as the siting of the landfill site. These people are generally good organizers, therefore, they would be welcomed as members of citizen and activist groups.

4.2.7 Interest Groups

The main group concerned with the prospect of the proposed landfill site(Site D) were the Tremaine-Britannia Citizens Group(TBCG). This citizen group depended heavily on the people in the area for both monetary and political support throughout their endeavors. The group constantly sought new information about waste disposal procedures and

spent much time and money researching alternatives to landfill sites and other waste site disposal problems. Part of the strategy employed by the TGCG was using local people who were both authority figures and credible. For example, the TBCG convinced Robert Bateman to auction off one of his paintings for a fund raiser. The TBCG distributed a newsletter through the mail, which stated policies that they felt the region should follow. As well, the TBCG initiated a post card campaign to communicate their policies to the population of Milton. Other key players included: consultants, who acted as generators of information for the whole system, and lawyers, who by reason of their professional status and authority can exert a strong influence on the citizen groups and the local governments. Finally, the local governments have what can be termed an authoritative influence.

"Out" is another citizen group which united in attempt to ensure that no toxic waste treatment facility was created within the densely populated belt north of Lake Ontario. Their key concern being that no hazard was imposed on the population and that key agricultural lands were not displaced. The strategy taken by the TBCG is one which is well suited for the area that they are targeting. Their employment of the local residents in their fight allows for two important criteria to be met:i) the local residents become aware of the issues, and ii) given that they have a

stake in the outcome, they will be more committed and contribute accordingly. Therefore the TBCG recognizes that Milton is a small town, and as such, if it demonstrates a united front to the rest of the Halton Region they will be more effective.

4.2.8 Community Organization

The community has many service clubs such as Lions, Optimist and the Rotary. As well residents are active in youth groups, such as the Y.M.C.A./Y.W.C.A, Boy Scouts and Girl Guides. The community also has an active Chamber of Commerce. The extensive range of service clubs encourages different types of people to participate and become involved in the community. Therefore it may be easier to target these existing groups when it comes time to organize activist groups. Milton has approximately 223.5 acres which is designated for Parks. Milton contains the Kelso Conservation Area. An area of 578.22 acres providing opportunities for skiing, swimming, group camping, picnicking, boating, tobagganing, and snowmobiling.

4.2.9 Site History

In 1972 the Region of Halton began a search for a new regional dump site, because the only garbage dump in Halton was due to close in March of 1984. After various

assessments, council decided in favour of developing the new site at Tremaine and Britannia in March of 1977. Although this decision was made, it was met with a lot of opposition from the citizens of Milton and the local government. As a result of this opposition a citizens group called the Tremaine-Britannia Group was formed.

In June of 1979 and in March of 1980 the Ontario Municipal Board is forced to instruct and reinstruct Milton to amend the town's official plan in order to make room for the site. In order to delay the reconstruction of the official plan, the Town of Milton in June of 1981, applied for a certificate of approval to operate the landfill site under the Environmental Protection Act. However, the Minister of Environment, Harry Parrott ruled that there would be no hearing under the Environmental Protection Act but rather it would be dealt with by an assessment by the Environmental Assessment Act. Along with six other potential sites, the assessment revealed that the Milton site ranked third on the impact on people in the Site Plan Area; fourth on the number of people and households in the study area; third on the number of children 16 and under in the study area, and third on the number of households with children. It ranks third for emotional impact, ranks fourth on disruption of an established community and third on the special population group sub-factor. In May of 1982, the Region of Halton applied to the Supreme Court of

Ontario to find the current mayor of Milton, Gordon Krantz and the current councilors in contempt of court for not amending the official plan of Milton. In October of 1982 the court ruled that the by-laws to the official plan would be enforced and implemented. Moving to more recent occurrences, in July of 1989, a judicial appeal became the town's only option in fighting the dump after the provincial cabinet decided on July 11 to uphold a hearing board decision ruling that Milton must take the region's garbage. The hearing board had rejected Milton's argument that a Burlington site, is the more suitable location for the twenty year landfill. Finally, the most recent data on the status of the site shows that on September 25 1990, a final engineering plan had not yet been submitted. Rather a draft was being reviewed by the Approvals Branch; therefore, no Certificate of Approval had been issued.

4.3 Introduction

An epidemiologic survey is very useful in the assessment of community awareness and concerns regarding certain issues, in this instance, community attitudes towards the proposed landfill site in the Milton area. The survey covers a representative sample of the population (187 households) within a 4 km radius of the site. The information derived from the survey shows level of awareness, knowledge, concern and action strategies with

respect to the existing situation and proposed future developments.

4.3.1 Attitudes Towards The Environment

The survey results demonstrate very high levels of concern about the proposed landfill site. When asked what change you would make in the area, 71% of the respondents surveyed replied the site. This indicates that the people who were surveyed, are quite happy with their overall living environment, and the site is construed as something that is likely to have a negative effect on their lives. Furthermore, when asked,"if you were to move, would you stay in the area"?, 62% stated that they would. This finding confirms the high level of "attachment to place" these people hold.

4.3.2 General Community Involvements

Questions about community involvements gave somewhat unexpected results. Given the high awareness level of the site, it was expected that there would be a high degree of residential involvement in community groups or organizations. Community groups and organizations are typically places where access to and exchange of information are quite readily found. However, when asked if the respondents had signed a petition, or worked with others re:

a community problem an overwhelming percentage replied "no".
For example, when asked if the individual had attended a
city council meeting? 72% replied "no".

4.3.3 Social Networks

The social network of a community can be a good
indicator of how well the community communicates within
itself and how well it can come together, if the need
suddenly arises. The results of the survey illustrated that
the respondents had strong social networks. Of those
surveyed, 56% felt that the people in the area were
friendly, therefore approachable. They talked with their
neighbors quite often (34% replied 1-2 times per week) and
31% replied that they actively asked for help from neighbors
at least once or twice a month. These results show that
residents interact with one another quite often and are not
afraid to request and to give help.

4.3.4 Site Awareness

Site awareness questions clearly demonstrated the
awareness levels of the individuals surveyed. When asked if
the respondents were aware of the site being an
environmental problem, 82% of those interviewed relied "yes"
with only 7.5% replying "no". Most individuals,(43%)

reported moderate concern levels about the landfill site. Out of these responses, 52% were concerned with their health. This is a very interesting finding, given that the site is not yet operational. Therefore, these concerns could be psychosocial in nature. Psychosocial symptoms including: lack of sleep or increased levels of anxiety. Although awareness and concern levels are very high very few people expressed desires to move. Only 25% stated that they would consider moving. Furthermore, of this 25%, only 13% had taken steps to initiate a move.

4.3.5 Additional Information Access

Consistent with their high level of awareness, many respondents were also actively pursuing means of becoming more educated about the site. Of those surveyed 71% discussed the site with friends frequently, once more demonstrating the strength of the community social networks. 43% had attended a public meeting to discuss the site.

In summary, the epidemiologic survey data provides a wide range of indicators which are useful in the assessment of level of awareness and concern. Although the epidemiologic survey does not include every resident in the area, it does provide for a wide representative sample of the population concerned.

4.3.6 <u>Table 4.3.1</u>

SUMMARY OF EPIDEMIOLOGIC SURVEY RESULTS

VARIABLES	NUMBER REPORTING	PERCENT REPORTING
Change one thing about this area. Mentions site	133	71.6%
If move from address = stay in area Yes	117	62.6%
Satisfaction with area as a place to live Very satisfied	145	77.5%
Signed a petition about a local issue Yes	86	46.0%
Worked with others re: community problem Yes	68	36.4%
How often talk with neighbors Often Very often	65 40	34.8% 21.4%
How often ask for help from neighbors Often Very often	51 19	27.3% 10.3%
People in area Very friendly Friendly	72 106	38.5% 56.7%

Someone you can confide in about problems		
Yes	179	95.7%

Aware of environmental problem <site>		
Yes	155	82.9%

Have any concerns about <Site>		
Yes	139	74.3%

Concerns about site		
Not concerned	49	26.2%
Slightly concerned	13	7.0%
Moderately concerned	43	23.0%
Extremely concerned	81	43.3%

Health related concerns		
Yes	97	51.9%

Considered moving because of <site>		
Yes	47	25.1%

Taken any steps toward moving		
Yes	25	13.4%

Main source of information		
Newspaper	76	40.6%

Read book/reports about facilities		
Yes	81	43.3%

Discussed concerns <site> with friends		
Yes	132	70.6%

4.4 Analysis of Depth Interviews

In-depth interviews are useful qualitative devices, which explore the concerns and feelings of individuals in the context of their everyday lives. The in-depth interviews generate responses that provide the researcher with useful information about how the residents around the site perceive the impending landfill. Examination of the interviews required the researcher to carefully record the commonalities and variations which emerged between individuals. Once an overall assessment has been made of each interview a search for supportive quotations was conducted. The quotations directly reflect the exact feelings and concerns that the respondents feel.

4.4.1 Visual Description/Community Cohesiveness

The interviews provide a clear insight into the respondents feelings, opinions and likes/dislikes about their environment. The perception of Milton held by many is that it is peaceful, spacious, quiet, private and "rural like". It is these characteristics which motivated many of the respondents interviewed to move to the area. The majority of the respondents found their community to be cohesive, meaning that people "stick together, and remain united". Cohesiveness translated into being able to greet one another on a first name basis, John stated," Yes its cohesive. It can be in a small town I guess everyone knows

each other. You can even pay in the liquor store by cheque". Variations to this question were expressed by older respondents-specifically the farmers. They felt that the cohesiveness had decreased in the last few years. These respondents felt that intensive farming had decreased in the area and as a result people had become more fragmented or had sold their land to speculators. Matthew, one of the respondents expressed his view on the cohesiveness of the area by stating:

> Not like it used to be.No, when it was all farm families well there was more community more community activities but once the farm families moved out why most of the families that live in the farm houses now just rent them and of course they're not interested, usually not interested in community activities or anything they just live there and commute back and forth to the cities. So there isn't a close knit community like it used to be.

Commuting to work is common and can be directly related to low levels of community involvement. Those away from the home for the greater part of the day may be reluctant to leave again when they reach home.

4.4.2 Dislikes of Area

Dislikes about the area were reported. Answers ranged from the water supply-or lack of it, because it had to be hauled from the town, to traffic volumes, lack of services and the proposed landfill site. The high frequency

with which the landfill site was mentioned indicates that these individuals are very aware of the negative implications of its implementation. Moreover, all of the above dislikes are likely to be accentuated by the landfill site. It will serve to increase traffic volume, disrupt the implementation of city services further, and will increase the uncertainty of the water supply.

4.4.3 Environmental Awareness/Consciousness

The main environmental concerns expressed by the respondents were the water supply and the landfill site. The individuals who demonstrated a degree of environmental concern were also those who were environmentally conscious. However, for the most part, they were quick to point out that they had not always been concerned. It was through their children and television that they had become more aware, Ted stated, "Educated like I'm being educated and I'm trying to practice some things but I'm not a hundred percent perfect yet..." Different responses were reported by individuals who had only recently moved to the area(within the last 2 years) and had moved from the city. They had no previous environmental concerns, because they were either far removed from the problem or it was taken care of for them, Susan pointed out,"I think most people that live in the city they think "Oh well get rid of this garbage". They don't know where it's going and they don't really care

either".

4.4.4 <u>Landfill Concerns</u>

The next set of questions dealt specifically with the landfill site, which although proposed for the Spring of 1991 is not yet operational. When the respondents addressed the question "Do you have any concerns about the landfill site"? clearly all agreed that some concerns did exist, the only difference being the level or degree of concern expressed. The most common concern about the site was the effect that it would have on the water supply. The respondents demonstrated great concern for what could seep into the water table and in turn what could be harmful to their health or livelihood. It became apparent that the people view the landfill site as a community stressor, a problem that affects a large number of people in a given area (Bachrach et al, 1985). Typically, these problems cannot be readily resolved by the individual alone and thus require collective action. Some other concerns regarding the landfill site included: noxious odours, air/noise pollution, and degradation of the serenity of the area presently and in the future. Mary summed it up when she stated, "If were ever going to leave a headache for the next generation that's going to be it". When the respondents were probed for more specific concerns such as air pollution, odours, water pollution, seagulls/rodents,

traffic volumes and health some common themes and variations emerged.

4.4.5 Water Concerns

Water pollution rated as the highest immediate concern for all respondents. Uneasiness about contamination and the effect that contaminated water could have on the livelihood of the farmers who raised cattle was very much a concern. Although not all the respondents were farmers, quite often they expressed concerns for friends or family who would be directly affected, Steve stated ..."I don't think it will directly affect like us, my family and that right here. I could say indirectly it will affect us because I have a cousin's boy, like son-in-law and his daughter who live right next door to it..." This finding serves to emphasize the cohesiveness of the community further. The only individuals who did not express concern for the water supply were those who stated that they were upstream from the site and hence, not affected.

4.4.6 Seagull/Rodent Concerns

An increase in seagulls and rodents was also a concern, but not as high as expected, given what is found in the literature. The literature suggests that landfill sites are dangerous because they are a fertile breeding ground for bacteria and viruses that cause disease in humans

as well as for flies, gulls and rodents which transmit germs to people (Anderson, 1987). Furthermore, even though the probability is small there is some concern about the over-population of seagulls leading to air traffic accidents, given that a small commercial airport is located close to the site. Although respondents expressed concerns about seagulls and rodents, for the most part they accepted their presence as part of the rural country environment, Joe stated "rodents come naturally don't they with garbage. Every farm's got rodents. Doesn't matter..." The main concern was with what type of control measure might be utilized. If poisons were to be used, the respondents were concerned about the likelihood of these poisons being transported from the infected animals to the people.

4.4.7 Air and Odour Pollution

There were varied concerns about air and odour pollution. Although odours were a concern, once more the individuals accepted them as inevitable part of the rural environment. Opinions were evenly divided with people being either very concerned or not concerned at all. Those who were not concerned felt that they were upwind of the site, that the pollution would be dispersed, that there would be no air pollution because it was not going to be an incinerator site, and, finally, that there could not be any air pollution because they were not going to be burning the

garbage. In contrast, the fear of those concerned centered on what they could not see in the air, the invisible contaminants.

4.4.8 Traffic Volume Concerns

Most of the respondents interviewed agreed that traffic volumes would definitely increase as a result of the site, and as such it would be a detract from the serenity of the community, Joe, his feelings, when he stated:

> Well its bad now its bound to get worse.
> They know. They've got the counters out on
> these roads. I see the counters checking
> traffic. There's hundreds of cars going up
> and down this First Line and across from
> Lower B. It's just nothing but a speedway
> now, it's gonna get worse. With the
> landfill can't help. I don't know how many
> trucks a day they say is going into the
> landfill but it's going to be tremendous.

The only variation to this question was from individuals who were away from their home during the day and as a result felt that they would not be as affected by the increased traffic flow throughout the day.

4.4.9 Health Concerns

Finally, health concerns were specifically explored. Surprisingly, most individuals did not express much concern, except to simply state that "...It won't be a healthy environment and I certainly won't be recommending it to any young couple who wants to rear a family" as pointed out by

Mary. However, the low levels of concern could be explained by the fact that the site is not yet operational. If one were to look deeply at all the aforementioned concerns, it would in all likelihood be found that negative health effects may become a consequence of the site.

4.4.10 Operation Concerns

The next set of questions dealt with the operation of the landfill site. An overwhelming majority of the respondents were convinced that the site would be an "eyesore" in the community, once it became operational, Mary stated, "Be ghastly. It'll be ghastly. Because the question which referred to the look of the site was open ended, it must be carefully scrutinized. Are the negative responses due to the fact that the respondents see it as a bad thing, and therefore assume that it must look ugly. Or are they expecting an "ugly" site because they have seen other "ugly" sites. Some respondents suggested ways in which the appearance of the site might be improved. The provision of a 100m berm was the most common method recorded. A berm would serve as a shield to hide what was actually going on at the site. Safety concerns and possible accident scenarios for the future centered upon the uncertainty of what was going into the site. This uncertainty led to more specific fears about fires and explosions. Experience elsewhere supports the occurrence of fires and explosions at

dump sites by methane emissions, the main gas produced by the decomposing of organic waste.

4.4.11 Accident and Safety Concerns

Half of the respondents named the Region of Halton as the responsible party if an accident was to occur at the site. While the other half named the Town of Milton, supervisors at the site and the provincial or municipal governments? Surprisingly nobody blamed the individuals who would be depositing the garbage. Is it because they view the residents who live in the area as "victims" and as such ignorant of procedures. By laying the blame on the Region it suggests that there is a certain loss of trust in the role that the Region serves. Previous studies show that this is a common occurrence. Edelstein(1988) states that individuals will generally lose trust in others specifically the government in times of high uncertainty. This occurs because the responses of the government frequently falls short of the expectations held by the people.

4.4.12 Knowledge About Site

When asked about their knowledge of the site half of the respondents felt that they did not have enough information. The reasons were because: they had not sought it out actively, it was all hearsay information, and because they had never received anything in the mail. Those who

stated that they did have enough information were those who frequently talked to others about the site, supported the activist groups and attended some community meetings. Newspapers and talking to other people were ranked as the best sources of information. Most felt that the different papers covered the issue quite adequately, each approaching the issue from a different perspective. The high degree of reliance on others for information stresses the cohesiveness of the community once more, as well as demonstrating the social networks which are operating in the community. Social networks range from single(individual) to multiple(community) networks. These networks can be both positive and negative- positive in that they can create a social cohesion which can empower a community and negative because they can also cause social conflict which can divide a community. One other question which clearly demonstrated the lack of knowledge displayed by some was what type of waste is going to be dumped at the site? The respondents did not know, but hoped that the site would be containing just household garbage. This uncertainty clearly demonstrates the lack of knowledge which is common among many people in the area.

4.4.13 Community Groups Effectiveness

When asked whether concern for the site had increased, decreased or stayed the same, over the last year

the majority replied that it had stayed the same. Their initial concerns about the site had not changed and would probably remain that way until the site became operational. In contrast, a small minority stated that there concern had decreased, because they were removed from the problem, they felt that it was inevitable, and they felt that they were not in control of the situation. Loss of control is quite often the most disturbing fear felt by individuals in this type of situation. They feel that their ability to secure a healthy future and to plan has been compromised. All were aware of the existence of a citizens group, but not all were active members. Some did attend meetings, but the majority were merely supporters. They expressed their support through donating money or attending social functions sponsored by the group. Therefore there were varied opinions about the effectiveness of the group. Although many felt that these groups could be effective, they doubted whether government opposition could be overcome. Mary clearly expressed her opinion when she said, "You can't fight City Hall" These responses were somewhat surprising because the very essence of these types of groups is in the number of people involved. As such, it was expected that all the respondents would state that the groups could be effective, given their feelings on the cohesiveness of the community. Community groups can serve a variety of functions, if they are utilized properly by a community.

They can be a source of support, a source of information and
a source of power in an uneasy situation.

4.4.14 Actions to Take

The final section of the interviews inquired about
the actions that the individuals would take because of the
impending landfill site. Although all agreed that property
values would decrease approximately 80% of the respondents
stated that they would not move. They would not move
because they rated their quality of life as good because the
area provides them with privacy, quiet, spaciousness and a
rural feeling. The fact that most people have moved to the
area from urban centers is one reason why they would be
reluctant to move, Charlie stated that, "Had I known it was
officially going to be there I probably still would have
bought it". These people have chosen to move to this area
and would only choose to move out if forced to by very
stressful circumstances.

4.4.15 Conclusion

From this analysis of the interviews it is clear
that the landfill site will create some fundamental changes
in the lifescape of individuals in the local area. These
lifescape changes, as defined by Edelstein(1988) include:

    1.   a reassessment of the assumption of good health
    2.   a shift to pessimistic expectation about the
         future. Resulting from the individuals
         perceived loss of control

3. A change in perspective of the environment
4. an inversion of the sense of home involving sa betrayal of place
5. loss of trust and goodwill

The results of the analysis show the common themes and variations that were expressed by the respondents in the interviews. In general, all expressed concerns regarding the site, but the degree of concern reported varied considerably.

4.5 Summary of Results

In order to get a clear illustration of the different degrees of concern, it is beneficial to divide the common themes into three groups: high concerns, medium concerns and minimal concerns. The high concerns included: water contamination, increased traffic volumes, future accidents and safety measures at the site and a reduction in property values. Medium concerns included: air/odour pollution, operation of the site, whether enough information was available about the site and the effectiveness of activist groups. While the minimal concerns included: health effects, and the possible rise of seagulls and rodents in the area.

Although all respondents reported concerns, some variations did exist between the individuals. These variations are best understood if one examines the individual and their every day life, rather then the individual in the community.

One common reason for lack of concern was being upwind of the site. For example, one respondent stated that because his home was upwind from the site, he would not get any bad odours drifting in his direction. Lack of concern about traffic volumes was expressed by those who were away from the home for the greater part of the day, and so felt they would not be affected by normal operation at the site. One other variation consistently found among the older residents interviewed was their perception of the cohesiveness of the area. Although they state that the area was once cohesive, they perceive that it has now lost a lot of its close knit characteristics. One final source of variation is in the willingness to move because of the site. People were only willing to move if the landfill site contained toxic waste. Others stated that they would not move, because their quality of life was very good. This finding is consistent with the epidemiologic survey data which showed that only 25% of the people would move. Furthermore, the community profile shows that 90% of the residents are owner-occupiers, which implies that the area is quite stable and that people who move there are likely to stay. The perception of community cohesiveness by the older people is also consistent with the community profile, which shows that the area has a very high percentage of people between the ages of 25-40, who strengthen the cohesiveness of the area by getting involved in the community activities.

CHAPTER 5:   CONCLUSIONS

5.1 <u>Summary</u>

In, summary, the analysis and results lead to the following conclusions.   The first hypotheses was confirmed. Many common themes emerged among the individuals interviewed.   The frequency of times that particular concerns were identified clearly illustrates this.   Some of these commonalities included: water concerns, increased traffic volumes and property value concerns.

The second research hypotheses was also confirmed, variations among the individuals did exist.   These variations can be attributed to age of resident, whether they work at home or away from the home and where in the life stage cycle they are in. (i.e elderly vs young adult)

5.2 <u>Consistency of Results</u>

The results of the analysis was consistent with the findings of past studies.   The analysis conducted by Edelstein(1988) in Legler, a suburb of Jackson Township found that the residents there experienced the same level of awareness and concern as the residents of Milton.   However, the study conducted by Edelstein, has documented results which describe the effects of the landfill site once it is operational.   At this time it is feasible to predict or speculate on what will occur at the Milton site, given what

is known about Legler. Examples which support this claim being made include: the residents of Legler felt that they had lost a trust in the government, because the responses that the government officials supplied them with regarding the site were very evasive. In Milton, it is apparent that the residents there are becoming less trusting of the government officials. This was demonstrated when the respondents interviewed stated that "if the government was against them, they did not stand a chance". Furthermore, in the Legler case, the residents were afraid to drink or bathe in the water. This is also currently occurring at the Milton site, and will worsen as time passes. There is much uneasiness about the safeness of the water, because many of the residents have to rely on well water for all their needs.

Studies conducted at Love Canal, also support the findings of this thesis. It was found that because of the contamination which existed in Love Canal, many people suffered health disorders, financial hardship, loss of work and loss of loved ones. While at the Milton site, there is already evidence which supports the claim that some of the residents will incur financial hardship. Many of those interviewed depended on farming for their livelihood, and as such, their dependence on clean water is essential. However, if the water is contaminated, then they may be endangering their livestock or their crop.
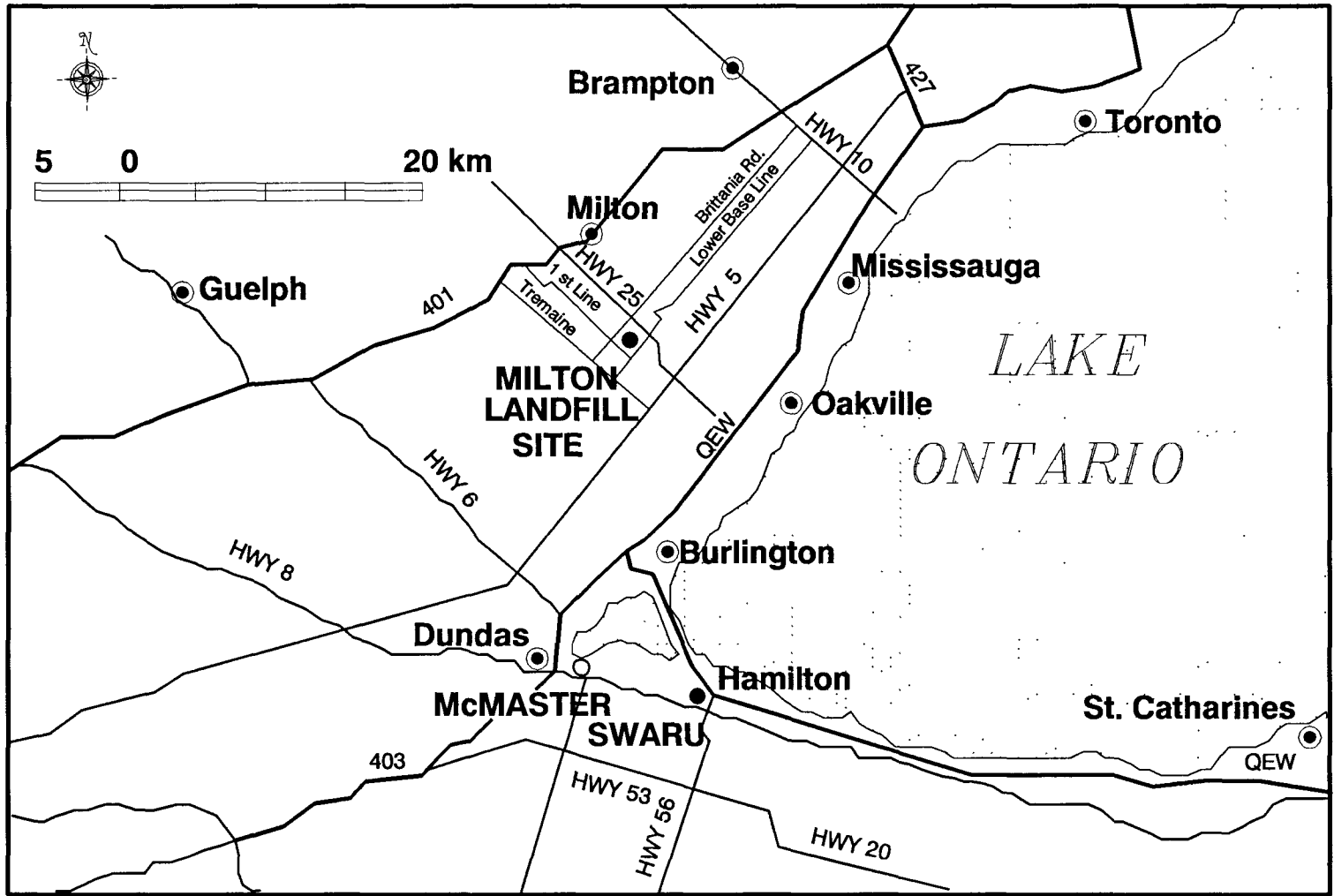
Figure 4.1

REFERENCES

Anderson R.F. "Solid Waste and Public Health" in Greenberg
        M.R.(ed) <u>Public Health and the Environment</u>, New
        York:Guilford Press, 1987.

Bachrach K.M. and Zautra A.J. "Coping With A Hazardous Waste
        Facility" <u>Journal of Health and Social Behaviour</u>
        1985.

Baum A, et al. "Understanding Environmental Stress:
        Strategies for Conceptual and Methodological
        Integration" <u>Advances in Environmental Psychology</u>
        Vol 5, New Jersey:Erlbaund Association, 1983.

Edelstein M.R. <u>Contaminated Communities: The Social and
        Psycholgical Impacts of Residential Toxic Exposure</u>,
        Boulder:Westview Press, 1988.

Eyles et al. "The Impacts and effects of the Hagersville
        tire fire:preliminary analysis and findings", in
        <u>Proceedings, Technology Transfer Conference,</u> vol
        II, Toronto:Environmental Ontario, 1990.

Sorenson et al. <u>Impacts of Hazardous Technology: The
        Psycho-social Effects of Restarting TM1-1,</u> New
        York:State University of New York Press, 1987.

Taylor et al. "The Psychosocial Impacts of Exposure to
        Environmental Contaminants in Ontario", McMaster
        University, 1989.

Vyner H.M. <u>Invisible Contaminants:Psychological Effects of
        the Invisible Environmental Contaminants</u>,
        Toronto:D.C. Health, 1988.

REFERENCES USED IN COMMUNITY PROFILE

Straight Talk about Contaminants, A Report Concerning OWMC'S Proposed Toxic Waste Site P113N:Preliminary Report, June 1984.

Canadian Markets 1990, The Financial Post Information Service, Complete Demographics for Canadian Urban Markets, 1990.

Demographic Reports of Canada, Brief Demographic Report of Milton:Prepared Using 1986 Stats Canada Census Information, 1989.

A Tourism Strategy for Halton, by Peter Barnard Associates, 1985.

Culture and Recreation Master Plan, Town of Milton, Ontario, Gillels Consultant Engineers Project Managers, 1983.

The Joint Board, the Consolidated Hearings Act, Reasons for Decisions and Decisions, 1989.

Review Under the Environmental Assessment Act, Prepared by Ministries and Agencies of the Province of Ontario.

Jason Van Bergeron, thesis. "Political and Monetary Influences and the Siting of Noxious Facilities", 1989.

Halton Department of Business Development, Invitation of the Business Development in Burlington, H.H. Milton and Oakville.

Population Projections to Year 2006, Planning and Development Department: Regional Municipality of Halton, 1986.

Demographic Analysis and Population Trend Forecast for the Regional Municipality of Halton, vol II.