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Development of a Consultation Process for Air Quality Issues in the London Borough of Merton

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Abstract

The goal of this project was to develop an air quality consultation process between the governing council and the community in the London Borough of Merton. We conducted research, interviews with authorities, and surveys of and focus groups with Merton's stakeholders. From the collected data, we constructed schemes for Merton Council to disseminate air quality information to and obtain feedback from the community. This consultation process is necessary for effective implementation of action plans designed to improve air quality in the borough.

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Executive Summary

The United Kingdom Department of Environment, Transport, and Regions (DETR) developed guidelines setting maximum concentration levels for seven key pollutants that must be met throughout the United Kingdom by 2005. These levels are based upon each pollutant's effect on human health. Merton Council, the London Borough of Merton's local authority, has determined that unless action is taken now, the borough is not likely to meet DETR standards for three of these pollutants in various areas of the borough. These areas are defined as potential Air Quality Management Areas, or AQMAs. Merton Council, therefore, must develop action plans that will allow the borough to adhere to DETR standards. In an effort to commence the process, the DETR has developed Local Air Quality Management (LAQM), a set of guidelines that describe how local authorities can develop and implement plans to meet air quality objectives.

Local Air Quality Management guidelines state that before action plans to improve air quality are implemented, local authorities must consult with all stakeholders affected by the changes brought about by these plans. The goal of consultation is to give stakeholders a sense of ownership in action plan development and thus allow local governments to gain support for their implementation. According to the DETR, a consultation process that actively involves all stakeholders in action plan development, including residents and businesses located within air quality problem areas, could result in effective methods to improve air quality.

Consultation is an integral part of developing action plans that enable areas of high pollution to comply with DETR standards by the year 2005. The first goal of this project was to provide recommendations to Merton Council for developing effective methods of air quality consultation with the Merton community. The second

goal of this project was to gather preliminary data on stakeholders' opinions regarding possible methods for improving air quality; this second goal represents the beginning of Merton Council's consultation with stakeholders on air quality issues.

To formulate recommendations, we utilised a variety of research tools in our methodology. For our first step, we reviewed literature relevant to this project, including both air quality issues and consultation processes. We next conducted interviews with environmental authorities in both the United States and the United Kingdom to ascertain possible methods for disseminating information to, and gathering feedback from stakeholders affected by action plans.

After completing our literature review and interviews, we conducted surveys with stakeholders in the London Borough of Merton in order to gain a perspective of their knowledge and opinions regarding air quality issues. Our first target population was residents and employees of local businesses located within possible AQMAs. This population is most affected by air pollution and possible action plans. We used two methods in an attempt to survey 396 stakeholders in these areas. First, we administered in-person surveys by going door-to-door among residencies and businesses in the targeted areas; we completed 57 surveys using this method. If we were unable to make contact with the stakeholder, we left a survey for the respondent to complete at his or her convenience and return to us in a pre-paid envelope; this method increased the number of respondents to 109, corresponding to an overall response rate of 28%. We attempted to survey as many residents and business employees as possible in several target locations in order to determine prevailing attitudes and opinions of these targeted stakeholders.

Our second target population was employees of Merton Council, which is the largest employer in the borough. This population represents a large number of

commuters and we identified them as important stakeholders for the consultation process. We surveyed this population via an electronic mail message distributed to all employees of the Council, and received 240 completed surveys using this method. This represents a 20% response rate. As with the AQMA respondent surveys, we attempted to survey as many Merton Council employees as possible in order to determine prevailing attitudes and opinions of these targeted stakeholders.

For our final method of data collection, we used a series of three focus groups. Participants for these focus groups were recruited via surveys and through personal contact. Using these methods, we attained a cross-section of Merton's residents, employees of local businesses, representatives from various interest groups, and Merton Council employees. Participants in these focus groups discussed their ideas for future consultation and their opinions regarding past consultation.

After finalising data collection, we first analysed separately the results from interviews, surveys, and focus groups. The results from our interviews included general ideas for dissemination of information to, and consultation with the community. Data collected from our survey illustrated stakeholders' awareness and concern about air quality, as well as their willingness to change behaviours associated with contributing to poor air quality. The survey also gathered data regarding methods by which stakeholders would prefer to make their views on air quality issues known to Merton Council. By analysing focus groups, we found strengths and weaknesses of past consultations, as well as improvements and barriers to future consultations.

We used an integrative analysis to investigate, in depth, results from each of our three separate data gathering methods. Based on common themes in our data, we developed conclusions regarding the dissemination of air quality information and

consultation regarding air quality issues. We presented to Merton Council a set of recommendations for the implementation of an effective consultation process.

Development of a Scheme for Dissemination of Air Quality Information

Based on our integrative analysis of data:

- We recommended that Merton Council present air quality information in a simple, concise, and attractive format in order to provide important information without overwhelming readers. Therefore, air quality information released to the public should appear as simple documents that omit technical data;
- We recommended that Merton Council present air quality information in a context relevant to stakeholders' interests. Therefore, information should not merely state pollution levels, but rather present the effects of air pollution on the quality of life in the borough;
- We recommended that Merton Council distribute air quality information at the borough-wide level by publishing both general air quality information and action plans in the *Merton Messenger*; and
- We recommended that Merton Council distribute air quality information at the community-based level by posting information in libraries, community centres, and on bulletin boards.

Developing a Community Consultation Plan for Air Quality Issues

Results from our data analysis indicated:

- There is a need for improvement of the community's perception of Merton Council. To facilitate this, we recommended that Merton Council consult before developing action plans so the community understands that their input

is vital to the process. The Council should also inform the community that public participation was used in forming action plans. Furthermore, Merton Council should lead by example and initiate action in air quality improvement, thereby setting an example for the borough's community;

- There is a need to establish localised, resident-based consultation. Thus, we recommended that Merton Council hold discussion groups in various areas of the borough, primarily in those that are potential AQMAs. Individuals independent of Merton Council should moderate these meetings in order to facilitate a free-flowing discussion by participants. These discussions should focus on local issues rather than more general borough-wide problems; and
- There is a need to improve existing organisation-based consultation. Therefore, we recommended that Merton Council request businesses and community organisations to discuss air quality issues at their regular meetings. The businesses and organisations could subsequently present results to Merton Council. This method should increase feedback from both groups regarding air quality improvement.

These recommendations for dissemination of air quality information and obtaining public feedback on air quality issues should lead to an effective consultation process, thereby allowing implementation of action plans with a wide base of community support. As a result of strongly supported action plans, air quality in the borough should improve and provide a greater chance that national standards for air pollutants are met by the year 2005.

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1.0 Introduction

Air pollution is an increasing problem in the world today due to its negative impact on the environment and quality of life. Pollution levels are at the highest in 30 years as a result of industrial and vehicular emissions created by economic and technological expansion (Marston, 2000). In the United Kingdom alone, there are over 24,000 premature deaths each year due to poor air quality (Marston, 2000). As the volume of traffic and number of pollution-emitting industries continue to rise, so do the levels of pollution. This increase directly corresponds to the number of premature deaths and lung problems occurring each year (*Non-Biological Particles and Health*, 1997). Damage to the environment's ecosystem and the deterioration of public buildings and other properties are also a result of air pollution. Without corrective action, the problem of air pollution will only grow with time; although action taken now may not yield any immediately noticeable results, ignoring the situation will only cause greater problems for future generations.

Air pollution is an important aspect of sustainability, which is the concept of changing actions in the present to improve the quality of life in the future. Awareness of sustainability came to the forefront in 1992, when devising a plan for global sustainability became the main focus of the Earth Summit in Rio de Janeiro. Participants in the Earth Summit drafted a set of sustainability guidelines, entitled *Agenda 21*, that encourage local authorities to develop sustainability action plans. These plans should detail a collaborative effort between businesses, residents, and the government. Local sustainability plans, or Local Agenda 21s, aim for continued economic and residential development without compromising the environment's capacity to support the needs of future generations. In accordance with sustainability ideas, in 1997 the United Kingdom Department of Environment, Transport, and the

Regions issued the National Air Quality Strategy (NAQS), a set of air quality standards and guidelines that represent the health related objectives for particular pollutants. Local governments, as stated in the NAQS, must declare locations that will not meet air quality objectives by the year 2005 as Air Quality Management Areas (AQMAs).

In Merton, an outer borough of London, the specific air quality problem is attributed to levels of nitrogen dioxide, sulphur dioxide, and particulate matter that have been projected to exceed the NAQS standards for 2005. The high levels of air pollutants are a direct result of the elevated levels of traffic on main roadways. Merton Council, the borough's local authority, is considering action plans to address its air quality problem. Since community involvement is a central aspect of both sustainability and the United Kingdom's plan for modernising local government, the NAQS requires Merton Council to interact with residents, businesses, and other statutory consultees in order to obtain responses and opinions regarding proposed action plans. The National Society for Clean Air and Environmental Protection has suggested that the development of a consultation process between the community and local councils at an early stage may generate support for feasible action plans, create a more knowledgeable community, and encourage local stakeholders to more willingly accept change (National Society for Clean Air and Environmental Protection, 1999). Merton Council has expressed the desire to solicit the public's opinion at an early stage in an attempt to increase awareness of air quality issues and increase willingness to change. Currently, no continuous medium for consultation exists between Merton Council and the community concerning air quality issues.

The lack of a consultation process led to the development of two primary goals for this project. The first goal was to gather opinions from stakeholders concerning

air quality issues and report these findings to Merton Council. The second goal was to recommend methods for future consultation between Merton Council and the Merton community regarding air quality issues. We sought to develop recommendations for continuous, sustainable communication between the local government and the local stakeholders that will allow exploration of the various proposed plans for air pollution reduction and that may lead to the acceptance of feasible action plans for Merton's air quality problem. The development of a sustainable consultation process can provide the borough with a greater probability of achieving the National Air Quality Strategy objectives by 2005.

Constructing a long-lasting method of communication requires thorough knowledge of the current air quality problem and work already in progress. A literature review was conducted to identify relevant background information, research, and suggested guidelines to aid in the development of a proper approach to a consultation process. The methodology included developing and administering surveys to obtain business and residential attitudes about air quality and subsequently conducting focus groups to further aid in determining recommendations for Merton Council. An integrative analysis of all collected data provided insight into the concerns and opinions of the stakeholders regarding air quality issues and possible methods for further communication with Merton Council.

All stakeholders in Merton, including Merton Council, will benefit from a continuous and sustainable consultation process because all members of the community will have the opportunity to share the responsibility of improving air quality in the borough. The consultation process can only help Merton in its quest to develop viable action plans that result in a less polluted borough with healthier air to breathe.

2.0 Literature Review

The information presented in this section reveals the widespread problem of air pollution and the various methods that may be undertaken to clean up the pollutants contaminating the air. Different causes, effects, and measures taken in the world, the United Kingdom and finally the London Borough of Merton are discussed. Also, research on sustainability, consultation, and consultation case studies is presented.

2.1 Air Pollution

The air pollution problem in the world today is a result of many different substances in the air that can have harmful effects. Each pollutant affects the environment and humans in different ways. For example, in the United Kingdom alone, there are over 24,000 premature deaths each year due to poor air quality (Marston, 2000). Each pollutant has different methods by which it can be controlled or reduced. In order to improve any air quality problem it is first important to understand each individual pollutant and its origin.

2.1.1 Causes of Air Pollution

Air pollution arises from a number of different sources. Various combustion processes, erosion, and chemical reactions in the atmosphere all contribute to the problem of air pollution. The London Borough of Merton's specific problem is attributed to the presence of particulate matter, nitrogen dioxide, and sulphur dioxide (Beevers, Doyle, Carslaw, & Hedley, 2000).

2.1.1.1 Particulate Matter Ten

Particulate Matter Ten (PM_{10}) is a mixture of a number of different substances, including automobile emissions, soil dusts, and sea salt. These particles, which are ten microns in diameter or smaller, can be seen as soot or smoke if they are large or dark enough. A subset of PM_{10}, designated as $PM_{2.5}$, includes particles that are 2.5 microns in diameter or smaller. While the whole set, which encompasses PM_{10}, is dangerous to human health, $PM_{2.5}$ poses a larger threat to humans because those particles can reach the deepest parts of the lung and cause serious respiratory problems (United States Environmental Protection Agency [U.S. EPA], 1998).

All pollutants, not just PM_{10}, are categorised by the way in which they enter the atmosphere. Primary pollutants are emitted directly into the air from the sources that create them; concentrations of primary particles are particularly high in urban and industrial areas. The largest contributors to the presence of primary PM_{10} pollutants are combustion processes. As a combustion process takes place, residual particles of unburned fuel and sulphur accumulate in the combustion chamber and enter the atmosphere through the emission of exhaust. In particular, coal combustion leads to the emission of fine mineral material called fly-ash, which is another form of particulate matter (U.S. EPA, 1998; *UK Air Pollution Brochure 1999*, 1999).

Particulate matter in the air includes many substances that may not be expected, such as sea salt, particles from automobile wear, and substances created through reactions in the atmosphere. The Quality of Urban Air Review, as stated in their 1996 report *Airborne Particulate Matter in the United Kingdom*, identifies soil dust as a major contributor to the PM_{10} problem. Dry, loose soil readily enters the atmosphere when strong winds blow the particles into the air. This problem is a worldwide issue; in the Northern Hemisphere alone 150 million tons of dust are

introduced into the air each year (*Airborne Particulate Matter in the United Kingdom*, 1999).

Other contributors to particulate matter levels in towns and cities include particles that accumulate on road surfaces due to the degradation of road and vehicle parts. These substances are ejected into the atmosphere at a rate that depends on the speed of moving traffic (*Airborne Particulate Matter in the United Kingdom*, 1999).

Another PM_{10} contributor, sea salt, enters the atmosphere as droplets of water when breaking waves crash against the shoreline. Eventually, these droplets evaporate and leave salt suspended in the air. Coastal areas are most affected by this type of PM_{10}, but concentrations can still be measured in most inland locations in the United Kingdom. The use of salt for de-icing in winter months complicates the pollution issue; this type of salt has an almost identical chemical composition to that of sea salt. Automobiles driving at high speeds eject the salt into the air, contributing to the particulate matter problem (*Airborne Particulate Matter in the United Kingdom*, 1999).

The primary PM_{10} pollutants previously described are not the only contributors to the air quality problem in the United Kingdom; secondary pollutants are also problematic. Secondary pollutants consist of primary compounds, such as nitrogen dioxide and sulphur dioxide, that have undergone chemical reactions in the atmosphere. While primary substances depend on sources of emission, secondary pollutants depend more on weather patterns. The chemical reactions that create secondary pollutants can occur throughout the world depending on the chemicals and conditions in the atmosphere. Wind patterns play a role in determining where concentrations of these substances will accumulate in different parts of the world. The most abundant secondary pollutants in the United Kingdom's air include

ammonium sulphate, ammonium chloride, and hydrocarbons, all of which can lead to involatile or semi-volatile products such as acids (*Airborne Particulate Matter in the United Kingdom*, 1999; *UK Air Pollution Brochure 1999*, 1999).

2.1.1.2 Nitrogen Oxides

Other major pollutants of concern are nitrogen oxides (NO_x), which are emitted by many of the same sources as PM_{10}. Nitrogen dioxide (NO_2), the most abundant of these substances, is a highly reactive reddish-brown gas. The primary source of this pollutant is high-temperature combustion processes such as automobiles and power plants. Home heaters and gas stoves also contribute to the NO_2 problem. Concentrations of the pollutant tend to be highest in urban areas. Nitrogen dioxide is of particular concern since by chemical reactions it forms nitric acid, which can combine with water vapour in the air and precipitate as acid rain *(Airborne Particulate Matter in the United Kingdom*, 1999; U.S. EPA, 1998; *UK Air Pollution Brochure 1999*, 1999).

2.1.1.3 Sulphur Dioxide

Sulphur dioxide (SO_2), a gas formed when fossil fuels such as coal and oil are burned to produce electric power, is another pollutant of concern. This gas is a major problem in cities that use coal for domestic heating and other industrial processes. Although the highest levels of SO_2 are found in urban areas, air in rural locations containing industrial facilities also shows high concentrations of the pollutant (*Chemistry of Atmospheric Pollutants*, 1998; *Latest Findings on National Air Quality: 1997 Status and Trends*, 1998;). In most European countries, SO_2 emissions have

declined due to the introduction of cleaner burning fuels (*Chemistry of Atmospheric Pollutants*, 1998).

2.1.2 Effects of Air Pollution on Human Health

Air pollution is responsible for a number of physical ailments; these illnesses range in severity from mild to fatal. The most common health effect is injury to the respiratory tract. Pollutants including PM_{10}, NO_x, and SO_2 have been implicated as causal agents in respiratory infections (McGrath, 2000; *Weymouth and Portland Council*, 1999). Most studies concur that air pollution is of little concern to healthy individuals; however, the health of children and the elderly is at risk from air pollution. Pollution may also increase the severity of pre-existing respiratory conditions (McGrath, 2000; *Asthma and Outdoor Air Pollution*, 1995; New Jersey Department of Environmental Protection [NJDEP], 2000). Exposure to any one of these pollutants can affect health, and the effects are amplified when individuals are exposed to two or more of the pollutants simultaneously (Linn County Health, 1997). Health effects specific to each pollutant are discussed in the following sections.

2.1.2.1 Health Effects of PM_{10}

Most studies agree that elevated PM_{10} concentration is a risk factor in human health (Ostro, 1993; Pope, 1996; Schwartz, 1994). According to Dr. Jefferson H. Dickey, "Particulate pollution represents a substantial public health concern" (Dickey, 2000, p. 10). The World Health Organisation estimates worldwide deaths from particulate matter at about 460,000 per year (Dickey, 2000). Because PM_{10} is small enough to penetrate into the lower respiratory system, exposure to this pollutant can heighten the severity of existing heart and lung diseases. Individuals exposed to

high concentrations of PM_{10} can exhibit symptoms of lung impairment for 2-3 weeks after exposure (NJDEP, 2000). Specific diseases associated with PM_{10} include bronchitis, chronic cough, and even lung cancer that can develop after prolonged exposure to particulate matter containing carcinogenic material (Dickey, 2000).

2.1.2.2 Health Effects of NO_x

Like PM_{10}, NO_x can impair the respiratory tract, especially in children (NJDEP, 2000). Nitrogen dioxide, in particular, has been linked to a wide range of diseases, including fatal pulmonary edema and bronchopneumonia at very high concentrations and impaired immunity at lower concentrations (Dickey, 2000; Linn County Health, 1997). While there is limited evidence that NO_x can induce asthma, it can exacerbate the condition (Linn County Health, 1997). It should be noted that the area of NO_x health related research is controversial; some current studies dispute the harmful effects of NO_x to human health (Glaister, Graham, & Hoskins, 1999).

2.1.2.3 Health Effects of SO_2

Studies on the health effects of SO_2 are more conclusive than those on NO_2. Sulphur dioxide can affect human health in numerous ways. Unlike PM_{10} and NO_x, SO_2 affects healthy individuals as well as the young, the elderly, and those with pre-existing respiratory conditions. The latter group, however, are more susceptible to the pollutant's detrimental effects; individuals with cardiovascular disease are also at greater risk than normal individuals. High levels of exposure to SO_2 cause bronchial inflammation, eye and throat irritation, and coughing; lower level exposure results in the aggravation of chronic respiratory disease in both children and adults. This pollutant has been linked to fatal respiratory failure as well. Sulphur dioxide can be

converted into sulphuric acid, aerosols, and particulate sulphate compounds, which are derivatives of SO_2 that may be carcinogenic after long-term exposure (Sulphur Dioxide, 1996).

2.1.3 Air Pollution Management in the United Kingdom

In order to curb the negative effects of pollution, such as degradation of health, pollution control has become increasingly important. Legislation in the United Kingdom has been developed to limit the amount of emissions produced from vehicles and industries; however, regulations alone may not solve the air pollution problem (*Developing Local Air Quality Strategies and Action Plans: The Principal Considerations* [LAQM.G2], 1997).

In the United Kingdom, local authorities are currently employing different strategies to reduce the amount of pollution produced by vehicles and industries. Suggestions for the regulation of pollution sources have been proposed. One proposal allows local authorities to reduce vehicular emission in an area through effective management of traffic. Local authorities have the power to create Traffic Regulation Orders that "prohibit, restrict, or regulate vehicular traffic or particular types of vehicular traffic" (LAQM.G2, 1997, Appendix). These orders would limit the amount of traffic in a certain area and as a result decrease the amount of air pollution being produced by automobiles in a particular locality. Other methods of car traffic reduction involve encouraging the use of public transport and other methods of travel (e.g. cycling), increasing taxation on cars, imposing road user charges, increasing parking charges, or reducing car dependency for shopping (London Planning Advisory Committee, 2000).

Another way to reduce vehicular emissions is to test vehicles for acceptable

limits of emissions. One key approach of the National Air Quality Strategy (NAQS) is to improve vehicle emission and fuel standards, which could decrease the amount of pollution produced from vehicles. Various local authorities in the London cluster group are testing co-operative strategies between the police and environmental authorities whereby vehicles can be stopped on the side of the road and tested for acceptable emissions. Failure to pass this test results in monetary penalties (LAQM.G2, 1997).

Industrial emissions are another source of pollution that can be regulated. Local Air Pollution Control (LAPC) enables local authorities to monitor and control industrial processes that are creating pollution. The United Kingdom Clean Air Act of 1975 allows authorities to prohibit the emission of dark smoke from any industry. In addition, authorities also require notification when new combustion processes, such as furnaces, are being installed to ensure that these processes will not cause pollution problems (LAQM.G2, 1997).

2.2 Air Quality Planning and Policies in the United Kingdom

Although the most noticeable indications of a pollution problem such as heavy smog seem to have decreased substantially as of 1997, the Department of Environment, Transport, and the Regions (DETR) reported that overall pollution was at the highest level since information has been recorded (*The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Working Together for Clean Air [The Air Quality Strategy]*, 1997). The lack of a concerted effort by those causing pollution and those affected by it has prompted the need for an organised pollution reduction strategy. The DETR realised this was needed to begin eliminating the existing health and environmental problems stemming from air pollution, and

consequently drafted the National Air Quality Strategy for England, Scotland, Wales and Northern Ireland in 1997 (*The Air Quality Strategy*, 1997).

The current air quality policies and regulations implemented by the DETR are a direct result of an attempt to curb the effects of the growing air pollution problem. Complying with the government's guidelines for sustainability, the NAQS involves all relevant local authorities in the air quality prevention and reduction process. Included in the NAQS and related documents are guidelines for Local Air Quality Management (LAQM), assessments of air quality, and communication between local government and the surrounding community. Completion of LAQM guidelines will result in the declaration of an Air Quality Management Area (AQMA), the initial step towards solving a particular region's air quality problem. The intent of the procedures is to initiate the process of air quality improvement and ensure that national standards are met (*The Air Quality Strategy*, 1997). These four related topics -- sustainability, the NAQS, LAQM and AQMA -- are discussed in the following sections.

2.2.1 Sustainability

A widely accepted definition of sustainability is that it encompasses "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Merton Council Urban Development Plan Review, 1996). To achieve sustainability, the environment should be safeguarded so that it will provide the basic needs of living, now and in the future. According to the DETR, accomplishing the goal of creating a better environment requires large-scale efforts by entire communities. Participation and feedback is needed from residents, local organisations, and the local government to ensure that changes are made and adhered to (Merton Council Urban Development Plan Review, 1996; *Sustainable*

Development Fact Sheets, 1999; *Sustainable Local Communities for the 21st Century: Why and How to Prepare an Effective Local Agenda 21 Strategy*, 1998).

2.2.1.1 Sustainability Objectives

Sustainable development consists of four main objectives (*A Better Quality of Life: A Strategy for Sustainable Development for the United Kingdom*, 1999, Chapter 1.2):

- Social progress that recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources; and
- Maintenance of high and stable levels of economic growth and employment.

An important point of sustainable social progress is the necessary compromise between increased prosperity and a clean, safe environment. This objective recognises that improvements are needed in reducing health problems caused by poverty, unemployment, and pollution. Effective protection of the environment encompasses limiting environmental threats that are detrimental to humans, such as poor air and water quality. Prudent use of natural resources means efficiently using existing fuels so as to limit pollution, and eventually to develop new safer, cleaner fuels in the future. Maintenance of high and stable levels of economic growth and employment would allow everyone to share in high living standards and would open doors for greater job opportunities (*A Better Quality of Life: A Strategy For Sustainable Development For the United Kingdom*, 1999).

The ideas of sustainability were introduced during the Rio De Janeiro Earth Summit in 1992. The result of this summit was a document titled *Agenda 21*, which

outlined methods for economic and social development without destroying the earth's resources. As part of sustainability, *Agenda 21* discussed the aspect of community-government interaction. The document stated that it may be difficult to achieve sustainable development without involving all members of society. *Agenda 21* discussed further that by involving everyone in the community, it is possible to reach a consensus in determining problems specific to a locality. It also mentions that a community should set realistic goals as to who can solve the problems and when steps to alleviate the situations should be complete. Although *Agenda 21* has led to an increase in citizen participation, awareness of issues by stakeholders, and understanding of issues by decision-makers, no concrete changes in government policies have been implemented (Wigan Metropolitan Borough, 1997; *Sustainable Development: The UK Strategy*, 1994; Earth Summit Watch, 2000).

2.2.1.2 The United Kingdom Sustainability Plan

The United Kingdom is one of more than 100 nations that has adapted *Agenda 21* ideas into its policy framework. As part of the United Kingdom Sustainability Plan, the Department of Environment, Transport, and the Regions instructed each borough to produce a Local Agenda 21 Plan by the year 2000. This strategy enables local authorities to prepare action plans for changes in the lifestyle of everyone in the community. With targets for improvement set, the United Kingdom Sustainability Plan suggests that community action is needed to effectively achieve the proposed changes (Merton Council Urban Development Plan Review, 1996).

Local Agenda 21 Plans consist of three core elements. First, a vision statement identifies the major sustainability goals for the area. Second, an action plan outlines which organisations or areas must take action and when the stated objectives

need to be completed. Finally, an implementation mechanism addresses how the desired actions will be put into place, how performance will be assessed, and how the plan itself will be updated as time progresses. Currently, there is no system for evaluating the process of sustainable development at the nation-wide level (*Sustainable Local Communities for the 21st Century: Why and How to Prepare an Effective Local Agenda 21 Strategy*, 1998; UK Roundtable on Sustainable Development, 1999).

2.2.1.3 The London Borough of Merton Sustainability Plan

The Merton Environment and Safety Forum, established in 1991, took the first step on behalf of the community in contributing to the development of Merton's Local Agenda 21 Plan. The forum consists of residents, environmental groups, businesses, police authorities, transport operators, and elected councillors. These members have undertaken many projects, including plans designed to encourage recycling and improve the local environment (Merton Council Urban Development Plan Review, 1996).

Merton's sustainable development plan calls for a great deal of interaction between all members of the community. Merton Council urges residents and local organisations to take an active role in improving the local environment. Specifically, the Council has requested all people to report smoky vehicles, limit their use of aerosol cans with chlorofluorocarbons (CFCs), reduce their use of automobiles, and keep their automobiles well maintained and serviced. Local organisations have been asked to reduce emissions from industrial premises, improve the insulation of those premises, ensure that vehicles are well maintained, and encourage employees to use their own automobiles less. In return, Merton Council has promised (Merton Council

Urban Development Plan Review, 1996):

- Continuous monitoring of air quality;
- Enforcement of pollution control legislation;
- Promotion of measures to improve the air quality; and
- Lobbying of the central government to ensure that environmental awareness and improvement continues to remain high on the political agenda.

Merton Council realises that the London Borough of Merton is part of London as a whole and cannot operate in isolation, since issues such as air pollution transcend administrative boundaries. Actions taken by one borough may have a substantial impact on the environment in neighbouring communities. As a result, Merton recognises that it must not function only as a community; it must also work together with the surrounding boroughs (Merton Council Urban Development Plan Review, 1996).

2.2.2 National Air Quality Strategy (NAQS)

Adhering to the core elements of sustainable progress, the National Air Quality Strategy aims to continue the improvement of air quality by setting challenging yet achievable goals. To reach these goals, the government constructed a series of guidelines for local government assessment of the air quality problem. With local authorities addressing the specific air quality problems in their region, the role of the national government is to mobilise the local government's action plans. The intent of the NAQS is to meet five distinct goals (*The Air Quality Strategy*, 1997, p. 8):

- Realistic but challenging objectives;

- Regulation and financial incentives to help achieve the objectives;
- Analysis of costs and benefits;
- Monitoring and research to increase understanding; and
- Information to increase public awareness.

National Air Quality Strategy literature stresses that eight particular pollutants pose health and environmental risks in the United Kingdom. These pollutants are benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, particle matter, and sulphur dioxide. By the year 2005, local governments are to reduce the pollution level of each particular pollutant to the national standard. Appendix B contains a summary of the pollution level standards for PM_{10}, NO_2, and SO_2. The national standard is intended to ensure that local governments are proactive in achieving these objectives within the allotted time (*The Air Quality Strategy*, 1997).

To fully comprehend the effects of air pollutants, the NAQS requires authorities to conduct research in local areas to understand specific problems. The DETR has set up numerous monitoring stations across the United Kingdom in order to accurately measure levels of pollutants on a daily basis (*UK Air Pollution Brochure 1999*, 1999). To accommodate the necessity for research, the DETR supplements the cost borne by the local governments with money set aside for NAQS aid (*The Air Quality Strategy*, 1997). This encourages each locality to investigate further the levels of each pollutant in its area. Furthermore, areas that are discovered to be particularly problematic can petition to be declared as Air Quality Management Areas. The local authority for AQMAs will then receive special funding from the government in order to help alleviate the abnormal exceedence of air pollution standards in these areas (*Framework for Review and Assessment of Air Quality* [LAQM.G1], 1997).

Designating and assessing the air quality problems in an area is only the first step towards completion of the national objectives. Although determining levels of pollution is an important step in solving the air pollution problem, there also exists a non-quantitative aspect of the problem solving process. The NAQS requires consultation with local stakeholders to determine what the surrounding community considers to be viable options for air quality improvement. The guidelines for the communication process are stated in a series of documents on Local Air Quality Management. A cost-benefit analysis can only be performed on the most plausible options for that particular area after obtaining responses from the community (*The Air Quality Strategy*, 1997)

The Department of Environment, Transport, and the Regions makes clear in its documents that suggesting guidelines will not solve the air quality problem because many communities will not change voluntarily. The United Kingdom Sustainable Development Strategy is designed to encourage local authorities to co-operate with each other and with the local community in determining the best solution to the air quality problem in a particular region (*The Air Quality Strategy*, 1997). The objectives outlined by the National Air Quality Strategy aim to improve air quality in the future by providing a framework for pollution reduction for the entire United Kingdom.

2.2.3 Local Air Quality Management (LAQM)

While the National Air Quality Strategy provides the framework for United Kingdom air quality standards, LAQM concentrates on delivering the results by applying these guidelines to the conditions in a particular locality. Local Air Quality Management is the set of guidelines and procedures that encourage the co-operation

of local government and stakeholders in the implementation of National Air Quality Strategy and sustainability objectives (LAQM Circular, 1997).

The local portion of air quality assessment does not concern itself with feasibility, cost, or benefits of proposed solutions to the air quality problem. This is addressed on the national level after assessments are complete (LAQM.G1, 1997). To avoid considering these factors in the initial evaluation of air quality, LAQM publications recommend a three-tier approach to assessment. The first stage involves determining all sources of pollution that contribute to the air quality problem. The second stage is monitoring and measuring pollutants designated as significant sources from stage one. Finally, stage three is a two-step process leading to the primary goal of Local Air Quality Management. The first step of stage three is producing detailed assessments of areas where pollutants are likely to break exceedence levels for the NAQS standards and declaring them as Air Quality Management Areas. The second step is consulting with the community to inform them of the specific problem and to obtain appropriate feedback on action plans for reducing air pollution (LAQM.G1, 1997).

The DETR mandates that local councils communicate with all local authorities, industries, and residents. This constant communication should provide the opportunity to develop new ideas that would not be feasible with only government-related initiatives. The requirement of communication, as stated in LAQM, is based on three main notions. First, building partnerships with business may allow access to more resources and funding. Second, educating and involving the community could generate a feeling of importance in the matter, leading to higher participation in actively solving the problem. Third, a knowledgeable, well-informed community is

more likely to accept a change of lifestyle in order to improve the air quality problem and is essential to the success of Local Air Quality Management (LAQM.G2, 1997).

2.2.4 Air Quality Management Areas (AQMAs)

The goal of Local Air Quality Management is to determine areas that have considerably high levels of pollution and mark them as regions of special concern. These regions, or Air Quality Management Areas, are geographic locations where any of the specified pollutants are expected to surpass the exceedence levels set in the NAQS. After the completion of the third stage of LAQM assessment, the declaration of an AQMA will occur if the projected levels of pollution are likely to exceed NAQS objectives by the year 2005 (LAQM.G2, 1997).

The boundaries of an AQMA are not meant to be exact, since these regions may cross local authority boundaries. The purpose of an AQMA is to designate an area in need of further air quality assistance; it does not concern itself with a process of drafting geographic borders. In fact, there is no way to prevent pollution from outside the border of a designated area from affecting the air quality inside (LAQM.G1, 1997).

Once an area is designated as an AQMA, Local Air Quality Management guidelines require that all stakeholders affected by this decision should be notified. Subsequently, drafted action plans must include contributions from the stakeholders and cost-effective solutions. According to LAQM, interaction between the local council and appropriate businesses and community members is imperative in the process of moving towards an acceptable solution to a local air quality problem (LAQM.G1, 1997). As was seen earlier, this interaction, also called consultation, is a key element of sustainable development.

2.3 Consultation Methods for Air Quality Improvement

Improvements in local air quality would not be possible without some form of communication between the government and the community. According to the DETR, it is the local council's responsibility to create an "effective and free flow of information" (*Guidance on Enhancing Public Participation in Local Government*, 2000) to educate and motivate those stakeholders who are involved. Communication between stakeholders and the local government is considered necessary to obtain an appropriate range of opinions on the implementation of potential solutions to the local air quality problem (LAQM.G1, 1997).

The national government along with local authorities has developed guidelines that address the need for consultation between the government and the community. The DETR, in an attempt to modernise local government, has produced a broad strategy for increasing community involvement applicable to all local issues. Local Air Quality Management guidelines focus specifically on air quality issues and define a set of requirements that aim to create a continuous release of information that provokes debate and raises awareness (*The Air Quality Strategy*, 1997). As a result of the statutory consultation process required by stage three of the LAQM, the National Society for Clean Air and Environmental Protection (NSCA) recommends a four-tiered approach to community involvement with regard to consultation specific to air quality issues. Each of these approaches is discussed in the following sections.

2.3.1 DETR Guidelines for Consultation

The DETR recognises the need to develop consultation processes between the government and the community and has developed a guide on methods to improve public participation. Increasing the role of the community in decision-making is

thought to be the next step towards improving the effectiveness of government policies. The NSCA approach encourages local councils to directly engage local communities and promote the public to actively participate in strategies, so that unpopular decisions are possibly avoided and better-informed proposals may prevail. A survey conducted by the DETR in the early 1990s "found only 3% of the population claimed to be very interested in local politics" (*Guidance on Enhancing Public Participation in Local Government*, 2000). The results from this survey prompted the DETR to find ways in which the public can actively participate. The DETR concluded that citizens would be interested if they were made aware of the issue, "particularly if the issue truly mattered to them, if they felt their interests were threatened, or if there was something they could gain" (*Guidance on Enhancing Public Participation in Local Government*, 2000). Also, public involvement could increase if people were invited to participate or were actively recruited to take part in a consultation exercise (*Guidance on Enhancing Public Participation in Local Government*, 2000).

There are several DETR requirements on how the consultation process should operate. First, the DETR suggests that the public should have a clear understanding of the current situation being addressed and what can be done to improve it. A complete understanding of an issue will raise the awareness of community members, making it more likely that they will desire to participate. Then, the consultation process should keep the public informed about participation opportunities that are available so that citizens can express their views. Such activities may involve citizen education sessions, community development sessions, and initiatives aimed at young people or other groups who do not regularly take part in community activities (*Guidance on Enhancing Public Participation in Local Government*, 2000).

The DETR stresses many reasons why a consultation process should take place. The main reasons are (*Guidance on Enhancing Public Participation in Local Government*, 2000):

- Public involvement encourages greater understanding of what the local council is trying to do;
- It can improve the quality of decision-making because more people, and most importantly the people affected by the council's decisions, are involved in the process;
- It ensures that the process of implementing a policy or a decision is easier because people understand what is being done and why;
- Good public involvement procedures can be linked to the council's desire to be responsive to the needs of local people, to quality services, and to ensure that all people have equal access to what is available;
- Effective public involvement satisfies the need to involve all members of the local community by including particular groups who have experienced discrimination and others who have not had the opportunity to participate; and
- Public involvement can also be cost effective because it opens channels of communication and ensures that services are delivered in a relevant way to those who need them. Thus, limited resources are used well and the council will get value for money.

The DETR guidelines go on to suggest effective methods for consultation processes, such as media coverage, opinion polls, public meetings, and focus groups. One effective media entity is local newspapers, due to their circulation and coverage of particular issues or forums being held. Opinion polls are often used to obtain immediate public reaction to a proposed plan. Public meetings are useful for

providing information to the public and receiving feedback from them; such meetings may consist of a panel of councillors, officers, and openly invited members of the community. Focus groups bring together citizens to discuss a particular topic of concern; they do not need to be representative of the general population and, in fact, may only involve one citizen's group. Discussions generated may focus on specific needs of the community, needs of a particular group, or on a broader range of issues (*Guidance on Enhancing Public Participation in Local Government*, 2000).

2.3.2 LAQM Requirements for Consultation

The DETR has incorporated the idea of consultation into Local Air Quality Management by mandating that local authorities consult with various organisations in developing a coherent, consistent, and sustainable communication process between the council and the community. Local Air Quality Management guidelines state that prior to involving the community in discussions, the local community must have access to certain information in order to make knowledgeable decisions about air quality policies (LAQM.G1, 1997).

Local Air Quality Management literature suggests that only basic information should be made available to the public. This includes the details of the area being studied, the times and dates of assessment, and the proposed plan of action. Stakeholders should be able to clearly follow all proposal documents as well as have access to a simple, concise source of all recorded data during the assessment process. Proposal documents include propositions to declare an AQMA, action plans, and proposals for action by a county council (LAQM.G1, 1997). All reports or proposals should be made publicly available before submittal to the DETR; however, the extent of information released is still at the discretion of the local council. This enables the

incorporation of public opinion and suggestions into the report (LAQM.G1, 1997).

After information has been made available to the community, Local Air Quality Management requires local councils to consult with the public before drafting plans to improve air quality. The local council is required to consult with a number of community representatives and authorities, including (*Consultation for Local Air Quality Management: The How To Guide, 1999)*:

- The Secretary of State;
- The highway authority;
- Every local authority whose area is contiguous to the authority's area;
- Any county council;
- Any National Park;
- Such public authorities exercising functions in, or in the vicinity of, the authority's area as the authority may consider appropriate;
- Such bodies appearing to be representative of persons with business interests in the areas the authority may consider appropriate; and
- Such other bodies or persons as the authority considers appropriate.

This is different from traditional consultations, which usually consist of professional teams drafting strategies and subsequently soliciting public opinion. The consultation process recommended by the DETR is designed to obtain the community's opinion so that it can be incorporated into proposed strategies. This method of consultation could save time and resources by letting the local authority and the public decide together a viable solution for improving air quality (*Air Quality Management Areas: Turning Reviews Into Action,* 2000).

The National Society for Clean Air and Environmental Protection has proposed another model, a four-tier approach, for developing a continuous

consultation process. The first tier involves identifying statutory and discretionary consultees that are essential to include in the air quality consultation process. From this group of consultees, the NSCA recommends that local authorities construct focus groups to discuss air quality issues. Also, the NSCA suggests that documents containing air quality data be publicised through the use of committees to allow the public an opportunity to review the information (*Air Quality Management Areas: Turning Reviews Into Action,* 2000).

In the second tier of the process, the NSCA recommends that local authorities educate all stakeholders about air quality through the use of workshops. The local authority may use these workshops along with focus groups to obtain ideas toward developing a strategy for improving air quality. Also, local councils may begin drafting these strategies, drawing from ideas raised in the workshops and focus groups (*Air Quality Management Areas: Turning Reviews Into Action,* 2000).

The NSCA suggests that in tier three, local authorities use focus groups as part of approximately eight weeks of consultation to discuss the assessment report on air quality. Also, when AQMAs are determined, the declaration should be widely advertised to all consultees through the use of newspapers and other public notices. The documents prepared for the AQMA declaration should be freely available to the public at Civic Centres, libraries, and community centres (*Air Quality Management Areas: Turning Reviews Into Action,* 2000).

Finally, in the fourth tier of the consultation process, the NCSA recommends the use of workshops at which key stakeholders are invited to help draft action plans designed to improve air quality in the determined AQMAs. After the action plans are created, the local authority should again widely publicise the documents and place copies in conspicuous places to encourage further public input (*Air Quality*

Management Areas: Turning Reviews Into Action, 2000).

The DETR recommends at least a two-year time period for the entire consultation process; therefore, no report should ever be finalised without taking into consideration the views of those being affected by the changes (LAQM.G1, 1997). Each council must determine an appropriate solution or combination of solutions to apply in each particular case. The DETR suggests that the local council adhere to a six-week minimum for consultation on any action plans to allow time for feedback (LAQM.G1, 1997).

2.4 Work in Progress in the United Kingdom

In accordance with the policies and guidelines discussed in Section 2.2, extensive monitoring and modelling of pollution levels in the United Kingdom are required as an initial step towards reducing air pollution. A number of different actions have been taken in the United Kingdom, including forecasting of pollution levels and a Nitrogen Dioxide Survey. Monitoring and forecasting of pollution levels is a large step taken by the United Kingdom in its fight against air pollution. Forecasting acts to notify the public of air pollution levels, which is relevant to those with or without health problems. The London Borough of Merton, in compliance with DETR guidelines, has initiated some of these methods to actively monitor pollution levels (*UK Air Pollution Brochure 1999*, 1999).

2.4.1 Monitoring and Forecasting of Pollution Levels

Monitoring pollutant levels helps scientists as well as politicians understand air quality problems such that cost-effective policies and solutions can be developed. Knowing the concentration of pollutants in the air enables authorities to assess how

well their standards and objectives are being met. One hundred eight DETR-maintained automatic monitoring sites in the United Kingdom monitor pollution levels. This number represents a five-fold increase in the past decade (*Automatic Monitoring Networks*, 1998). A central station collects the data from every site on the hour and stores the figures for further analysis. These sites determine the concentration in the air of ozone (O_3), NO_x, carbon monoxide (CO), SO_2, and PM_{10}, as well as a wide range of hydrocarbons (*Automatic Monitoring Networks*, 1998). The placement of each site within the network has been strategically chosen in order to assess the air quality in high population areas as well the impact of those pollutants that travel long distances (Stedman, Espenhahn, & Willis, 1997; *UK Air Pollution Brochure 1999*, 1999).

In addition to the automatic monitoring sites, 1500 manual sampling sites have been established to provide supplemental data. At these sites both passive and active sampling methods are employed. Passive sampling involves absorbing particles from the air for a period of time, usually several weeks or months, and then analysing them in a laboratory. This low cost method of sampling is employed in the DETR's Nitrogen Dioxide Diffusion Tube Survey. Active sampling gathers a known volume of air, with samples collected and analysed daily. This method is used in the Smoke and Sulphur Dioxide Network (*How Is Air Pollution Measured?*, 1998). Manual sampling sites also reveal geographical patterns of different pollutants. Besides NO_2 and SO_2, other substances measured include lead, heavy metals, ammonia, and other toxic compounds (*UK Air Pollution Brochure 1999*, 1999).

The data and information collected by both automatic and manual monitoring sites allows the DETR to provide an update on air pollution levels every hour and one major forecast every twenty-four hours. Bulletins are made available to the public

through various media entities including the newspaper, television and radio broadcasts, a free telephone service, and a World Wide Web site (Stedman, Espenhahn, & Willis, 1997).

2.4.2 Current Work in Merton

After extensive monitoring and development of prediction models, Merton has determined that objectives for three different pollutants (PM_{10}, NO_2, and SO_2) may not be met by the year 2005 in certain areas unless action is taken. For PM_{10}, the NAQS objectives will be difficult to meet along major roads; however, the objectives should be achievable in areas fifty meters from those major roads, otherwise known as background areas. For NO_2 and SO_2 the objectives will be difficult to meet both along major roads and in some background locations. The most prominent problem areas include Kingston Road, Morden Road, Morden Hall Road, London Road, Durnsford Road, and Carshalton Road. In the conclusion of the report by the South East Institute of Public Health Environmental Research Group (SEIPH), the following recommendations were made to Merton Council (Beevers, Doyle, Carslaw, & Hedley, 2000):

- Assess the potential for personal exposure at each of the sites identified as exceeding the NAQS objectives;
- Undertake consultation on the findings with the authorised officials and other consultees as required [by the NAQS]; and
- Initiate procedures within the Council to designate Air Quality Management Areas based on the areas with identified exceedences.

2.5 Case Studies of Consultation Processes

A key recommendation to Merton Council cited above is to initiate consultation with the public concerning air quality findings. One way in which an effective communication strategy can be developed in Merton or any other borough is to understand the effectiveness of similar strategies in other locations. Many locations throughout the world are experiencing air pollution problems, which depend on various factors such as climate, population, and economy. Many government agencies are working on developing plans to remedy their specific air quality problem. For example, Denver, Colorado is experiencing an air quality problem similar to that of Merton. This location is a large city that experiences high levels of automotive traffic. As a result, Denver has particulate matter and nitrogen oxide problems that have led to the development of plans to resolve the air pollution problem. The final step in the solution process has been to obtain stakeholders' responses to the proposals. This will help in choosing a proposal that will be most effective, since only proposals that are supported by the people they affect are likely to be successful (Regional Air Quality Council [RAQC], 1999).

Another example of interest is the London Borough of Camden. This borough is faced with the same legal requirements as Merton and has developed *We're Listening*, a report on consultation in Camden. This report describes the steps their local authority has taken to develop an effective consultation process between the government and the community. Included in the report are data that present the preferred methods of consultation as chosen by the community (Officer's Working Group on Consultation [OWGC], 2000). Both Denver's *The Blueprint for Clean Air* and Camden's *We're Listening* are described in the following sections.

2.5.1 Denver, CO

Denver, Colorado has been under scrutiny from the Environmental Protection Agency (EPA) since the United States federal government passed the Clean Air Act in 1970. This legislation set the basic laws for air pollution in the United States after Congress realised that pollution was a growing concern and control was needed to prevent irreversible damage (De Nevers, 1995). After this act passed, Denver was listed as an area of concern due to its poor air quality. Since Denver has had constant population growth, the city has experienced exceedences of pollutant standards for substances such as carbon monoxide, ozone and particulate matter. The Denver area's largest problem comes from particulate matter that forms what the local residents call a "brown cloud." The brown cloud, once an issue only in the winter, has now become a year round problem due to constant growth and increasing traffic (RAQC, 1999).

It wasn't until the early 1990s that Denver came into compliance with federal air quality standards for carbon monoxide and ozone. This was a result of a combination of federal, state and local action that led to the creation of the Regional Air Quality Council (RAQC). Established in 1989, the RAQC deals specifically with air quality planning for the Denver area. This council is composed of a variety of different stakeholders such as elected officials, business representatives, environmental groups, transportation agencies and interested citizens. The council was created in order to obtain opinions that would help form an effective proposal to the air quality problem (RAQC, 1999).

Their proposal, called *The Blueprint for Clean Air*, focused on achieving air quality standards through the year 2020. The council proposed the following objectives to reach this ultimate goal:

- Maintain compliance with federal health standards, including the new standards for ozone and fine particulate matter ($PM_{2.5}$) issued by EPA in 1997;
- Reduce the number of days when the state's visibility standard for the metro area is exceeded by 50%, 80%, and 100%; and
- Achieve no net increase from 1995 levels of particulate (PM_{10}) emissions from motor vehicles (exhaust and road dust).

After developing these objectives, the RAQC established a plan to educate and obtain feedback from the people and groups affected by the blueprint. This would enable the organisation to assess the costs, benefits, and feasibility of their objectives (RAQC, 1999).

The council felt that "one of the most important elements of *The Blueprint for Clean Air* was an extensive effort to seek public input and assess public opinion on strategies to improve air quality in the region" (RAQC, 1999). The first step in obtaining feedback from the public was to distribute a brochure through government offices, libraries and vehicle inspection sites. This brochure provided background about *The Blueprint for Clean Air* and listed ways to contact the council with any opinions. Then the council went on to obtain the opinions of businesses that might be affected. This was done through focus groups. A total of 300 representatives from different businesses were shown a slide show about the plan and then asked for their opinions in a free flowing discussion. The final surveying effort began in July of 1998. In this stage, the public and businesses were informed of the plan through newspaper articles, newsletters, web pages and television programs. A telephone survey was conducted with the public, asking them consistent questions that emphasised the following topics:

- Whether people were concerned about the "brown cloud" and health impacts of air pollution;
- Whether they thought the RAQC should be taking additional steps to improve air quality;
- Whether they believed that the Blueprint struck the right balance between costs and air quality benefits; and
- If they were willing to pay the costs associated with the clean air strategies proposed in *The Blueprint for Clean Air*.

The telephone survey was followed up by focus groups with willing citizens in order to gain a deeper understanding of their opinions. The process was completed after round table discussions were conducted with interested groups such as businesses, the public, and environmental groups. In the end, surveying provided two functions: a way to educate the public about the plan and a guide to the finished *Blueprint for Clean* Air proposal (RAQC, 1999).

2.5.2 The London Borough of Camden

Like Denver, the London Borough of Camden has an air quality problem and must initiate a consultation process with the local stakeholders. The local authority for Camden, in accordance with DETR policies, has undertaken a study on how to improve consultation with the community. The council has determined that they need to make information available on all issues needing consultation as early as possible so that people remain informed. Furthermore, *We're Listening,* the council's report on consultation, states that a summary of comments and responses should be made available to all who take part in consultation exercises as well as to other interested parties. The council concluded that it is necessary to monitor the effectiveness of its

consultation process by hiring independent agencies to study the consultation's progression (OWGC, 2000).

Camden has determined that council officers need to be trained in order for any consultation process to be successful. The report suggests that in the future, officers will be instructed to give information to consultees and actively seek their views. When they receive responses, officers should acknowledge them, clarify them, and record them for an accurate and fair report or presentation to decision-makers. Officers should also make recommendations to the decision-makers if appropriate and include advice on the consultation exercise. Camden's research notes that decision-makers should be careful not to express a firm view about any proposal while it is still in the formative stage. Doing so may make the consultation process appear unlawful and may result in a legal challenge (OWGC, 2000).

In order to involve as many stakeholders as possible in the early stages of developing a consultation process, Camden Council established the Joint Working Group. This committee consists of both Council members and interested community groups. The group drafted *Guidelines for Effective Consultation with Groups*, a consultation review report. The report was widely publicised through features in the *Camden Citizen* (the local newspaper), press releases to the local press and radio, and features in newsletters of local volunteer organisations and forums. Surveys were also distributed to community groups in order to obtain the public's opinions about past consultation exercises with Camden Council. These various methods were used to alert as many interested people as possible (OWGC, 2000).

The report *We're Listening* states that the responses obtained from the survey did not represent a statistically valid sample; however, since consultation is a qualitative process, the Joint Working Group concluded that opinions and ideas from

any one group must be considered since their beliefs may influence final decisions as much as the views of any other representatives from the entire population. Among the prevailing attitudes obtained from this study was the desire for serious and sincere consultation. People also wanted to see clear, concise, and easily understood information on what the council does, how its decision-making process works, and how they might influence decision-making through consultation. Many suggested that a short summary of proposals would suffice. Above all, people wanted to see a clear purpose to the consultation process by receiving information on why the consultation process was relevant to them and guidance on how to participate. Most people also wanted to see the results of consulting with the council; at the very least, they wanted to receive an acknowledgement that their opinions had been received. Several people pointed out that they could accept decisions, even if they did not agree with them, provided that they understood how they had been reached. Some groups and individuals expressed the desire to talk to an independent party, rather than express their views directly to the council. This would enhance the impartiality of the process and allow them to feel confident that their views were being considered (OWGC, 2000).

The survey respondents suggested many ways for Camden Council to disseminate information. Most felt that the *Camden Citizen* was an effective way to receive pertinent news because the paper is regarded as an important source for publications. It could be used to inform people on how to consult with the council, invite the community to public meetings, ask for written submissions regarding controversial issues, and publish a survey. Others expressed interest in seeing information available at local libraries, community centres, and community buildings. Other popular methods for consulting included (OWGC, 2000):

- Meetings of people involved in the issue: for example, users of particular services or residents in a particular area;
- User panels or citizen juries;
- Notices in Council tax mailings;
- Posters on refuse bins, bus shelters, and lamp posts;
- Community notice boards in Camden's natural village centres;
- More frequent contact with councillors; and
- A telephone line specifically for people to respond to consultations, which is especially useful for people who have difficulty responding to surveys.

The business sector in Camden also mentioned other suggestions for improving council-business interaction. These suggestions included creating a reliable and comprehensive database containing businesses contact information in order to improve relations, to include information relevant to businesses in the *Camden Citizen*, and to mail the paper to them. Camden Council believes that incorporating these suggestions into a consultation process may lead to increased community involvement and a community more willing to accept a proposed action plan (OWGC, 2000).

3.0 Methodology

This section of the report explains techniques that we employed to gather and analyse data for our project in both the United States and the United Kingdom. We began by developing goals for the project derived from the initial problem statement received from Merton Council. With specific goals in mind, we researched relevant background literature in order to become more knowledgeable about air quality policies and consultation guidelines. We then interviewed authorities in the United States and the United Kingdom, and familiarised ourselves with the London Borough of Merton. To obtain stakeholders' opinions on air quality and consultation, we developed and distributed three types of surveys. After analysing survey results, we conducted several focus groups with stakeholders to further investigate responses. Finally, we performed an integrative analysis to formulate informed recommendations for Merton Council on how to conduct a successful consultation process. These methods are described in the following sections.

3.1 Project Goals and Objectives

We developed the problem statement from a project description, provided by Merton Council, that addressed the need for a consultation process regarding air quality problems in the London Borough of Merton. Through background research and discussions with our project supervisor, the problem statement was refined. Merton Council intended that our project would form part of the statutory consultation process required by the United Kingdom's Central Government. The purpose of the project as proposed to us by Merton Council was:

- To obtain responses and reactions from stakeholders (residents, businesses, transport providers, transport users, the health authority, and Councillors) with regard to proposals for designating Air Quality Management Areas;
- To identify the actions stakeholders would like to see implemented to improve air quality and by whom;
- To investigate the willingness of stakeholders to (voluntarily) change behaviour to improve air quality and to identify barriers to change;
- To advise appropriate methods by which to disseminate information and consult with stakeholders in the future; and
- To investigate examples of partnerships between stakeholders regarding air quality issues and how Merton can learn from the experience of others.

Based on an understanding of Merton Council's objectives for our project and our knowledge of relevant research, we determined goals for the project and a methodology to achieve them. The first goal of this project was to **gather opinions from stakeholders about air quality issues and report the findings to Merton Council**. This incorporates Merton Council's objectives for soliciting public attitudes and opinions regarding current air quality issues. The second goal was to **recommend methods for future communication between Merton Council and the Merton community regarding air quality issues**. This addresses Merton Council's need for dissemination of air quality information and consultation in the future. We investigated case studies relevant to air quality consultation issues during literature research; case studies are presented in Section 2.5 of this report. We determined that obtaining the public's response to AQMA proposals was inappropriate, since no proposals have been developed; however, we considered consultation on proposals and action plans when we developed final recommendations.

3.2 Review of Air Pollution and United Kingdom Policies

It was important to understand the current air quality situation in the United Kingdom, especially in Merton, so that we were knowledgeable in discussions with stakeholders. We gained our knowledge of air quality through extensive research of air pollution literature and government and environmental agency guidelines. This background knowledge helped us to forecast which stakeholders would be most affected, and how they are likely to be affected, by the policies and actions of the United Kingdom. Using this information, we designed a methodology to obtain information from stakeholders regarding their opinions concerning air quality issues. Also, a review of the literature allowed us to formulate informed recommendations about feasible ways in which Merton Council and its stakeholders can communicate.

3.3 Interviews with Authorities in the United States

We interviewed government officials and authorities in the United States to learn more about general strategies for disseminating information and obtaining community feedback. We selected officials from various backgrounds including, but not limited to, air quality and environmental services. Choosing to conduct interviews allowed us to employ an "exploratory approach" for gathering information (Doyle, 1998). These interviews were unstructured to allow for extended discussion in specific areas of interest as the conversation progressed. Open-ended questions explored topics such as the development of air quality regulations, release of information, and the soliciting of stakeholders' responses; these varied slightly according to the interviewee's particular expertise. The interview questions, accompanied by bulleted lists of responses, can be found in Appendix C.

We used purposive sampling to choose interviewees who would represent

different viewpoints and experiences on the subjects of air quality issues and consultation. Two types of experts were interviewed: academic experts and local government officials. We conducted interviews with the following individuals from these groups:

- Brian Glascock: Director - Boston Air Pollution Control Commission;
- Laura Nelson: Public Involvement and Communications Specialist - Denver Regional Air Quality Council;
- Prof. Hank Nowick: Professor of Chemical Engineering - WPI; and
- Bob Peterson: Manager - Air, Water, and Hazardous Materials Division, Worcester Department of Health and Code.

Professor Nowick provided insight into our project objectives due to his academic background in air quality and previous involvement with government, industry and the community. Local government officials, such as Bob Peterson, provided possible and proven methods of communication with the public. We conducted these interviews in the United States between 14 February 2000 and 2 March 2000.

Data gathered from these interviews, combined with information obtained from our background research, provided a broad range of methods for information dissemination and community consultation. In addition, these methods presented a background for our interviews with United Kingdom authorities. This background knowledge also aided in the development of survey questions and provided material for discussion in focus groups with stakeholders.

3.4 Familiarisation with Merton

We spent a portion of our first week in the United Kingdom acquainting ourselves with the London Borough of Merton. This allowed us to gain a first-hand

perspective of the air quality situation that is not available through published sources. For example, discussions with Merton officials helped us to understand attitudes toward air quality and proposed regulations. It was also necessary to understand the location of high pollution areas so we could target stakeholders in these areas and obtain their opinions on air quality issues.

3.4.1 Geographic Awareness of Merton

To better understand the specific pollution problems in the London Borough of Merton, we found it important to gain knowledge of the area, especially in locations containing high pollution levels. We received a map from our project supervisor that highlighted these areas of elevated pollution levels.

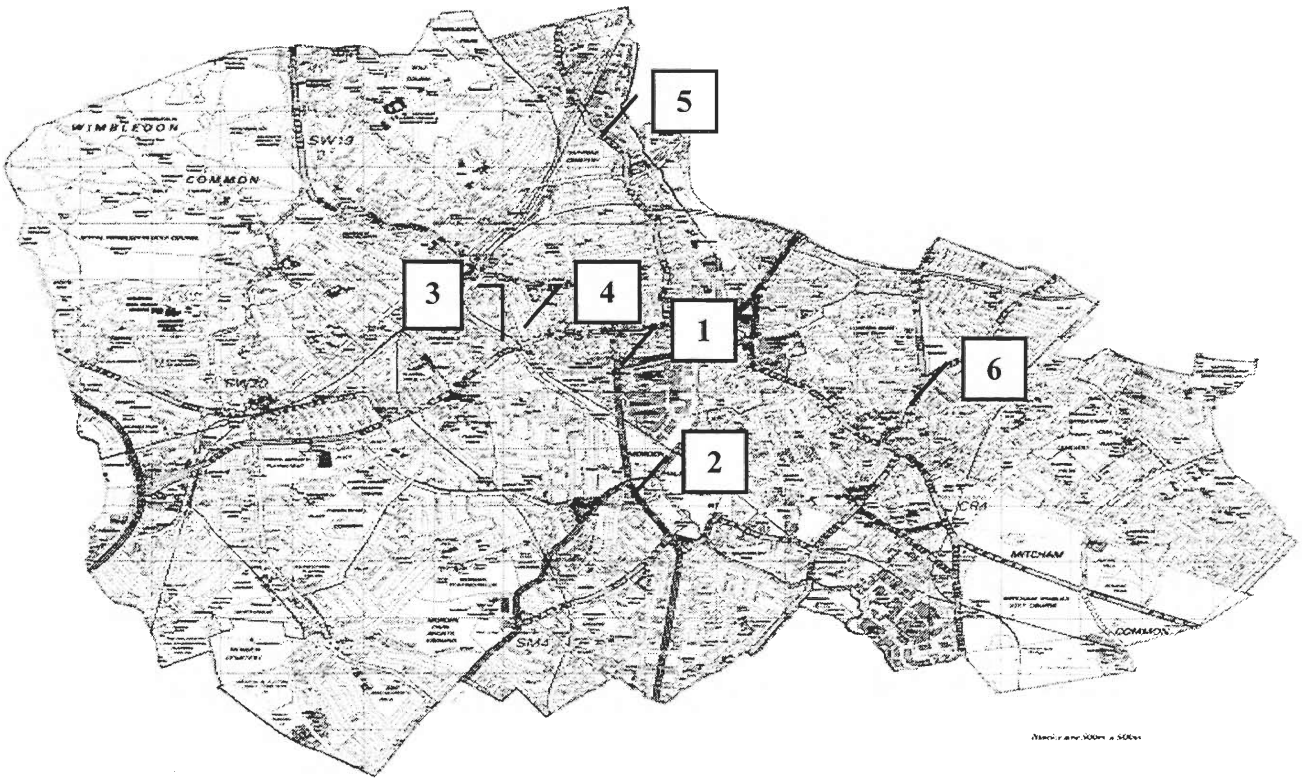

Figure 3.1 - Areas of High Pollution in the London Borough of Merton

Figure 3.1 displays numerous areas with pollution levels that are predicted to exceed the United Kingdom's national standards. We used purposive sampling to choose these roads as target areas because they contained a large number of businesses and residencies suitable for surveying. Our target roads, as shown in Figure 3.1, included:

- 1. Morden Road;
- 2. Morden Hall Road;
- 3. Kingston Road;
- 4. Hartfield Road;
- 5. Durnsford Road; and
- 6. London Road.

Although other locations contained high pollution levels, such as Kingston By-Pass, Charshalton Road, Plough Road, and Bushey Road, these roads are mainly used as throughways and contain little residential or business development. These throughways have a lower priority of being declared an AQMA because few individuals are being directly affected by the pollution. Therefore, we chose not to survey these areas due to the time constraints of this project and because they do not contain people who are most affected by action plans.

3.4.2 Interviews with Merton Council Officials

We interviewed Merton Council officials to provide insight about air quality consultation and possible solutions to the air quality problem specific to the London Borough of Merton. Through these interviews, we learned about the current situation of Merton's air quality problem, what Merton Council hoped to gain from our survey, and ideas for conducting successful focus groups. We also discussed which consultation techniques suggested in United States interviews might be applicable to

Merton in order to discover cultural differences between the United Kingdom and the United States; these differences merited consideration in our development of a consultation process. We conducted interviews with:

- Mike Barrett: Environmental Health Officer Manager - Environmental Services;
- Steve Cardis: Principal Planner - Environmental Services; and
- Susan Tanton: Principal Environmental Officer - Environmental Services.

These interviews took place during our first week in Merton to provide adequate background in our communication with the stakeholders. Questions and results from these unstructured interviews can be found in Appendix C.

3.5 Air Quality Issues and Consultation Survey

Community involvement is intrinsic to the process of Local Air Quality Management. By involving the community in the communication process, Merton Council may increase their chances of developing well-received action plans. Due to this beneficial outcome, Merton Council was interested in determining citizens' awareness and perceptions of air quality in the borough and their willingness to change behaviours detrimental to air quality. Suggestions for air pollution reduction strategies may provide the Council with ideas for consideration while developing action plans, and the public's openness to current reduction strategies may provide an indication of the community's level of acceptance for each plan. These concerns led to the development of a survey administered to several target groups of citizens in Merton.

3.5.1 Survey Design and Development

Conducting a survey of Merton's stakeholders allowed us to obtain community feedback on air quality issues for presentation to Merton Council. The sample of stakeholders that we surveyed from the determined problem areas discussed in Section 3.4.1 included:

- Residents in designated air pollution problem areas;
- Employees from local businesses in air pollution problem areas; and
- Employees from Merton Council.

Citizens who live and work in the designated areas of poor air quality will be most affected by the implementation of action plans to achieve the national objectives; therefore, representation from these two groups is crucial to the consultation process. We also targeted Merton Council employees for our survey because the Merton Civic Centre is located in close proximity to a potential AQMA location, and these employees constitute a large portion of the commuter population that travel into or within the borough on a daily basis. Survey results provided insight into Merton Council's habits and opinions, as the transport methods of the borough's largest employer can greatly affect air quality in the local area.

Our first survey targeted residents and businesses in potential AQMA locations. To accomplish surveying this population, we developed a survey for each target group; although the nature of the questions was the same, we modified the wording according to the different context of each audience. We created two versions of each survey: one for our primary method of distribution, which was through personal contact, and one for residents or employees to mail back if they were not available at the time of our visit. The in-person survey was designed for us to read aloud to a respondent while we recorded answers. In contrast, the mail-back survey

was designed to provide ease of completion, including instructions and tick boxes for the individual to use. In-person surveys for residents and businesses are located in Appendices D and E; mail-in surveys for residents and businesses are located in Appendices G and H.

We chose to utilise global electronic mail as a method of survey distribution within Merton Council. This survey differed from the residential and the business survey in that it contained subtle changes of wording appropriate for the setting of the Council. We also changed the format of the survey to make answering via electronic mail quicker than a reply using internal mailing within the building. This survey is located in Appendix I.

We obtained feedback about each survey's content and design from Siobhan Murphy, Mike Barrett, and Theresa Payne to assure that each survey had a strong chance to obtain the desired data. We then pre-tested the residential and business surveys in the United Kingdom using a small sample of the Merton population in order to troubleshoot for confusing or biased questions. Pre-testing also detected wording or content problems that required attention prior to administration of the survey to Merton's stakeholders.

The data collected through administration of our three surveys aided in assessing the range of opinions regarding air quality issues in the borough. The surveys gathered data concerning Merton stakeholders':

- Methods of transport;
- Concerns and perception of air quality;
- Opinions regarding tentative plans to improve air quality;
- Preferred methods for contacting Merton Council; and
- Demographics, such as age, gender, and ethnic background.

We asked stakeholders about their primary methods of transport in order to determine the percentages of people who do and do not use less polluting, more sustainable methods of travel, such as public transport. By asking questions regarding perceptions of the air quality in the borough, we intended to determine whether stakeholders are aware of the air quality problem in their area and how concerned they are about the problem. Also, we questioned stakeholders for any further suggestions on how Merton Council can improve air quality; this allowed respondents the opportunity to express any other opinions they might have. We asked stakeholders how open they would be to see the implementation of air quality improvement plans, such as improving public transport and more frequent emissions testing for vehicles. This may be helpful to the Council at a later time when action plans to improve air quality are drafted. A question asking which contact method a stakeholder would use to express views regarding air quality allowed us to solicit information on the most popular means for feedback to the Council. Finally, we asked questions pertaining to the respondents' demographics in order to determine if our survey sample paralleled the demographic characteristics of Merton's population.

3.5.2 Survey Distribution

After development and testing was completed, we administered the survey to Merton's stakeholders during the period 27 March 2000 to 14 April 2000. In order to collect credible data, we targeted stakeholders in several of the possible AQMA locations in Merton as defined in Section 3.4.1. In previous surveys distributed by Merton Council and by other WPI project teams, residents may have been under-represented since they have exhibited a low response rate (Merton UDP: Best Value Consultation Project, 2000; Survey of Merton Residents, 1999). In an attempt to

alleviate under-representation of residents, we chose to survey all residencies and businesses in the areas mentioned in Section 3.4.1. In addition, we developed multiple strategies for distributing surveys in order to increase the response rate.

3.5.2.1 Survey Method 1: In-person Distribution in AQMAs

Our first method of survey distribution was through in-person surveys, which generally provide a higher return rate in comparison to mail and phone surveys (Schutt, 1999). Non-response bias may result if only people interested in the subject take part in the survey. This could provide us with inaccurate data because these people may be more knowledgeable about the subject due to their interest. Our strategy of surveying aimed to eliminate this potential bias by attempting to obtain responses from all residents and representatives of businesses within selected AQMAs and thus avoid targeting only those people with prior interest in the subject of air quality. To implement the in-person approach for survey distribution, we administered surveys by going door-to-door at every residence and business in our target areas. Common barriers encountered in the in-person approach include initiating contact with stakeholders and motivating them to participate in a survey (Schutt, 1999). In order to initiate contact with the stakeholders, we surveyed at different times of the day and various days of the week. To motivate the stakeholders to complete the survey, we informed them of its importance to Merton Council, potential positive effects on the environment, and the potential to improve their quality of life. This method led to the distribution of seventy-nine surveys.

3.5.2.2 Survey Method 2: Mail-in Distribution in AQMAs

In order to contact as many residents and business employees in the designated

problem areas as possible, we developed a strategy to reach individuals who were not available. This prompted us to develop a second method of survey distribution. Where we could not initiate face-to-face contact with residents and businesses, we either mailed a survey to the location or left one on the premises ourselves. In an effort to improve the response rate, we provided each individual with a reply-paid envelope in order to make returning the survey easier. Standard response rates for mail in surveys are approximately 60%, though this is normally achieved using random sampling over the course of several months (Schutt, 1999). Due to the time limitations of our project, we determined that instead of attempting to reach a particular response rate, we would continue to accept surveys until a particular date. This method allowed us enough time to proceed with analysis. If this procedure yielded a lower than an accepted response rate, these results could not be generalised to reflect the opinions of the entire target areas. Also, the same non-response biases that exist for in-person surveys exist for mail-in surveys distributed to the same target population. In total, we distributed 321 surveys using the mail-in method.

3.5.2.3 Survey Method 3: Electronic Mail Distribution in the Merton Civic Centre

To obtain the opinions of Merton Council employees, we developed a survey and sent it via electronic mail (e-mail). We attempted to survey all Merton Council employees who work in the Merton Civic Centre and are able to access internal e-mail. Response bias may occur due to the possibility that employees of some departments may possess more knowledge of air quality policies, regulations, and conditions than employees of other departments or residents and businesses in our target areas. After the initial due date for responding had passed, we contacted all non-respondents through another e-mail message in order to encourage participation

in the survey and allow them another week to respond. We did this in an attempt to further validate the results by increasing the response rate. Due to the relatively new field of internet-based surveying, there are no concrete figures available for a standard acceptable response rate. Consequently, due to similarities between an e-mail message and a postal mail message, we set a response rate of 60% as acceptable. Therefore, a response rate lower than 60% would indicate that the results of this survey would not necessarily reflect the opinions of the entire Merton Council. In total, we distributed 1200 surveys using this method.

3.5.3 Analysis of Survey Results

After the due dates for our surveys had passed, we analysed the results using descriptive statistics and determined patterns in qualitative answers. We calculated percentages for answers to quantitative questions about methods of transport, concerns and perception of air quality in the borough, opinions regarding ideas to improve air quality, and methods of feedback to Merton Council. We then simplified this data into a series of charts for Merton Council's records and future use. We noted the most common responses about the public's preference for contact with the Council, along with awareness and concerns about air quality; this data allowed us to determine the current level of air quality education in the borough.

We analysed responses from four open-ended questions by using the qualitative technique *open coding*. Using this method of simplification, each response is labelled with a specific code word to allow for identification of recurrent themes. Similar responses received the same code word, generating groups of prevailing responses that were then subjected to the same quantitative analysis as the remainder of the survey questions. We used qualitative questions in our survey to allow

participants the chance to respond with a broad range of opinions that were not limited by our initial multiple-choice questions.

When analysing the survey results, we separated the data into two categories: data from Merton residents and businesses in AQMA areas, and data from Merton Council employees. First, we looked for correlations within each group, such as concern with air quality versus willingness to change daily habits to improve air quality. These correlations helped us to further determine the attitudes of the stakeholders. Correlations also enabled us to see patterns in responses which may support the necessity for education or increased awareness within a group of stakeholders. Finally, we used our separate quantitative and qualitative data to draw comparisons about attitudes, practices, and opinions of AQMA respondents versus Merton Council employees.

3.6 Focus Groups with Stakeholders

We used focus groups as our third information gathering method in our project. Focus groups are collections of participants who are interested in and willing to discuss a topic in a free-flowing conversation. Although the common size of a focus group is between six and twelve participants, groups containing as few as three participants to as many as twenty are acceptable. Focus groups can be an effective means of obtaining interaction between groups and allowing all participants to freely express their opinions (Vernon-Gerstenfeld, 2000). Although agreements in opinion may lead to plausible solutions, results from focus groups cannot be extrapolated to represent the opinions of an entire population (Krueger, 1994). Focus groups are also useful in gaining further understanding of results from a quantitative study (Krueger, 1994; Shutt, 1999). We chose to use focus groups in order to obtain spontaneous

reactions and ideas to issues generated from the surveys, interviews, and previously conducted background research.

We conducted a total of three focus groups: one was held each evening between 10 and 12 April at 7:30 P.M. in the Merton Civic Centre Ante Room. In each of our focus groups, we aimed to include a cross-section of Merton government officials, members of interest groups, residents, and business employees so that all groups received equal representation and had the opportunity to comment on others' ideas. Participants involved in these focus groups included those recruited through the survey process, interviews, and the Merton Environment and Safety Forum (held 29 March 2000 in the Merton Civic Centre Council Chambers). In total, we contacted 51 individuals and invited them to attend the discussions. Those invited included:

- 28 residents from possible AQMA areas;
- 8 representatives from businesses located in possible AQMA areas;
- 9 representatives from interest groups in Merton; and
- 6 employees from Merton Council.

We provided each individual with an open invitation to attend any one of the three sessions in order to minimise scheduling conflicts.

We developed a questioning route to guide the topics of discussion during the focus groups. We tested this questioning route during a mini focus group held on 7 April 2000. The purpose of this mini focus group was twofold: first, to test the questioning route for clarity, and second, to give the moderator more experience in dealing with conversation during a focus group setting. We chose the Merton Civic Centre Ante Room as the location for the discussion groups because of the small size of the room, intending to reduce any intimidation participants may experience. Also, we provided an assortment of light snacks and beverages prior to the discussion

groups to create a warm, friendly environment that encouraged discussion (Krueger, 1994).

We began each focus group session by showing *Managing Local Air Quality*, a brief video produced by the DETR, in order to provide a background and context for the discussion. Following the video, we began a guided discussion using a questioning route technique to obtain and record the opinions of the participants. The questioning route included three primer questions to start the conversation and were not intended for long discussion. These questions focused on determining the participants' awareness of the LAQM process, as well as evaluating the effectiveness of past consultation with Merton Council. The primer questions lead into three *key* questions that we designed to yield the most important findings of the focus group. After providing a brief oral summary of the main points of the discussion, the focus group concluded with two *final* questions that prompted the participants for any further suggestions that might not have been discussed (Krueger, 1994). The specific questions used during the focus groups can be found in Appendix N.

Upon completion of the focus groups, we determined if the needs and opinions of the three stakeholder groups varied greatly or were similar in nature, since possible methods for consultation could be recommended based on similar ideas that were discussed. The opinions of participants from the focus groups, coupled with patterns from survey data, knowledge from interviews, and background research should lead to the development of an effective consultation process.

3.7 Integrative Analysis and Formulation of Recommendations

After completing data collection through interviews, surveys, and focus groups, we reviewed the most common and feasible ideas of stakeholder-Council

interaction. Based on our findings, we recommended strategies to Merton Council regarding future dissemination of information in order to raise the community's awareness of and concerns about air quality. Furthermore, we designed and recommended a method of consultation that aimed to consider the viewpoints of the entire community. To produce knowledgeable recommendations based on specific areas of improvement, we used results from our literature review, expert interviews, survey of stakeholders, and focus groups. Each recommendation is supported with data from one or more of the methodological steps. This allowed us to determine common patterns between data sets, and then compare these suggestions with established guidelines.

4.0: Results and Data Analysis

This section of the report details the results of interviews, surveys, and focus groups, using the analysis techniques as described in Chapter 3. After the results for each data collection method were analysed separately, we performed an integrative analysis to find patterns between the different data in order to take the most common ideas into consideration in our recommendations for effective consultation.

4.1 Interviews with Authorities in the United States and United Kingdom

As described in Section 3.2, we conducted interviews with various environmental officials in the United States and the United Kingdom in order to obtain ideas on information dissemination and consultation that have been used in the past. Notes from these interviews can be found in Appendix C.

United States officials discussed using methods of information dissemination such as newspapers, pamphlets, mailings, web sites, television programs and radio broadcasts. In particular, Professor Nowick, a Professor of Chemical Engineering at WPI, mentioned that government organisations, such as the United States Environmental Protection Agency, are required to distribute drafted proposals through postal or electronic mail to relevant industries and organisations. This is followed by a feedback period that allows interested groups to express their views on the proposals over the phone or at public meetings. Bob Peterson, a manager in the Worcester Department of Health and Code, suggested the method of mass mailing to reach a large number of people. He mentioned that although this method is effective, the process is slow and labour intensive. He also suggested an alternative approach of using web sites, which are more effective when trying to post information rapidly. During our interview, Bryan Glascock, Director for the Boston Air Pollution Control

Commission, suggested broadcasting air pollution maps and other relevant air quality information as part of the daily weather. He feels that stories contained in the news are effective in reaching a large population. Finally, Laura Nelson, a Public Involvement and Communications Specialist for the Denver RAQC, suggested the use of surveys to obtain feedback from the public. She felt the most effective way to accomplish this was either through a door-to-door or telephone survey because people tend not to return mail surveys. While these methods of disseminating information and obtaining community feedback were considered effective in the United States, we proceeded to test their relevance in the United Kingdom.

Our discussions with Merton Council officials suggested that some ideas for dissemination of information and consultation that United States officials had mentioned would be ineffective in the United Kingdom. Susan Tanton, a Principal Environmental Officer, felt that while web sites and television are popular methods in the United States, these methods would not be effective means of disseminating information in the United Kingdom. Only a limited number of households in Merton have Internet access, making it difficult to reach a large audience. Also, she mentioned that the use of television would be ineffective because television stations are not localised enough to broadcast information specific to Merton. Instead of using the previous two methods, she suggested placing articles in the *Merton Messenger*, a quarterly newsletter produced by the council, because it is widely read and is specific to the London Borough of Merton. She also felt that posting signs in places such as community centres, libraries, and the Merton Civic Centre have previously been effective in disseminating information to the public.

Many similar ideas between the United Kingdom and United States regarding consultation were also discussed. The ideas of public meetings, local newspapers,

pamphlets, mailings, television, and web sites were all mentioned again. Steve Cardis, a Principal Planner, discussed the past effectiveness of mail surveys followed by telephone calls as well as surveys placed in the *Merton Messenger*. He also mentioned the Merton Environment and Safety Forums that Merton Council holds monthly in the Civic Centre. This forum is used as a method of consultation where interest groups and the public can discuss ideas to improve the environment.

After all interviews were completed, we better understood that the following methods of disseminating information and consultation could be effective in the United Kingdom:

- Signs or posters in various areas;
- Mailings to stakeholders;
- Articles in the *Merton Messenger* and local newspapers;
- Questionnaires; and
- Public Meetings or forums.

Although these methods have been mentioned as effective in the United States and United Kingdom, we further investigated their potential effectiveness for our consultation process through the responses from surveys and focus groups.

4.2 Survey Results and Analysis

The purpose of our surveys was to gather data both for Merton Council's future use and to better understand the attitudes and opinions of stakeholders regarding air quality issues. Merton Council was specifically interested in the data collected about stakeholders' methods of travel, their views on plans to improve air quality and whom they feel should be responsible for improving air quality. This data can be useful in the future for the Merton Council during the development of action

plans because it indicates how people travel in the borough and how open they are to seeing certain plans implemented. Both quantitative and qualitative results of this information are provided in Appendices J, K, L, and M.

We were most interested in the data we collected about individuals' attitudes about air quality. This helped us design a consultation process between Merton Council and the Merton community. The distribution of our surveys, discussed further in Section 3.5, consisted of contacting 396 stakeholders in potential AQMAs either by mail or in person between 27 March 2000 and 14 April 2000. We also distributed 1200 surveys to Merton Council employees through the use of a global electronic mail message on 4 April 2000. The results of these two surveys were analysed separately, followed by a comparative analysis. The details of these results are discussed in the following three sections.

4.2.1 AQMA Respondent Surveys

Overall, the response rate for resident and business surveys was 28%. Upon further inspection, separating the response rates from each survey method showed that the in-person response rate was 73% and the mail-back response rate was a considerably lower 16%. These statistics are important to us for two reasons. First, it measures the validity of our survey and secondly because the distribution of surveys is one possible method of consultation we may recommend. By distributing our surveys three different ways, we found that in-person surveys provided the highest response rate.

A demographic comparison of gender, age, and ethnic background between AQMA respondents and the London Borough of Merton's census report is shown in Table 4.1. The ethnicity and gender statistics almost exactly mirror that of Merton's

entire population, demonstrating that our sample appeared generally representative of the Merton population. Conversely, the age demographics for our survey vary from the borough as a whole, since the views of people less than 15 years of age were under-represented. This occurred because we primarily surveyed the head of every household or employees over the age of 16. However, the difference in age statistics does not create a bias for our findings because the consultation process is aimed at individuals older than 15. Even though the gender and ethnicity statistics were similar to the borough as a whole, caution must be used when attempting to generalise our findings to the entire borough.

Demographic	Category	AQMA Respondents	Merton Census (1991)	Error
Ethnicity	White	87%	86%	0%
	Black	3%	5%	-2%
	Asian	7%	4%	3%
	Other	3%	4%	-1%
Gender	Male	47%	48%	-1%
	Female	53%	52%	1%
Age (years)	0-14	2%	17%	-15%
	15-24	8%	14%	-6%
	25-34	21%	19%	2%
	35-44	18%	14%	4%
	45-54	20%	11%	9%
	55-64	18%	9%	9%
	65+	14%	16%	-2%

Table 4.1- AQMA Respondents' Demographics vs. Census Demographics for 1991

The following four charts provide the most useful data from our surveys for constructing a consultation process between Merton Council and the Merton community. Figure 4.1, illustrates the level of concern AQMA respondents' had about air pollution. This figure reveals that 69% of AQMA respondents were "concerned" or "very concerned" with air pollution. This is an encouraging response,

since people who are concerned with air quality may potentially contribute to remedy the problem.

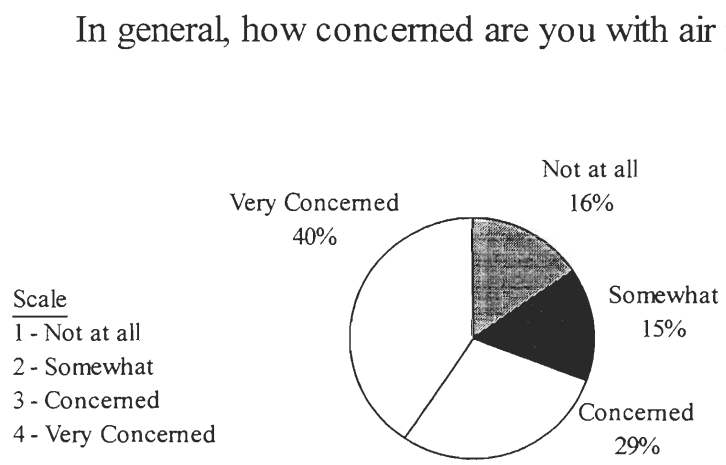

Figure 4.1- AQMA Respondents' Concern with Air Pollution

The next chart, Figure 4.2, shows that almost half (48%) of AQMA respondents believe that the air quality in Merton is "poor", which was the lowest rating on our scale. Also it is interesting to note that 40% of respondents believe the air quality is only "fair" and that no individual who took part in our survey said that the air quality was "very good." This leads us to believe that the majority of AQMA respondents are aware of the air quality problem in the borough. Although a majority may be aware of the air quality problem there is still the opportunity to educate those individuals who are unaware.

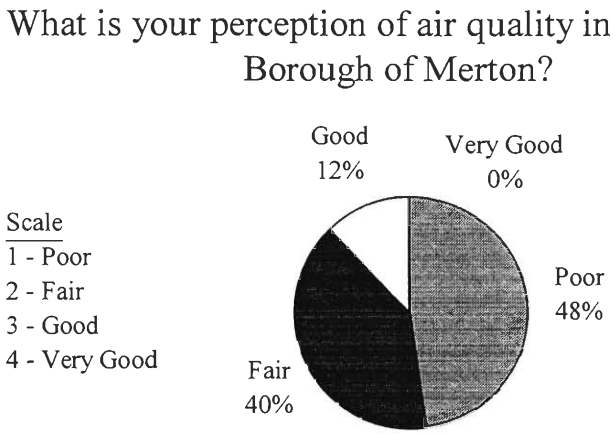

Figure 4.2 - AQMA Respondents' Perception of Air Quality in Merton

The next chart, shown in Figure 4.3, reveals that 51% of AQMA respondents were either "willing" or "very willing" to change their daily habits to improve air quality. While the majority of respondents were "willing" or "very willing" to change, 33% of respondents were "not at all" willing to change their daily habits. It is important to understand how inclined individuals would be to change, because the implementation of action plans may require some people to change their daily habits. This is an encouraging statistic because about half of those surveyed appear open to change in order to improve air quality. Although the level of respondent's willingness to change provides a good opportunity to improve air quality, education will be necessary both to inform those willing individuals about how they can improve air quality, and to inform unwilling individuals about how their actions negatively affect the environment and others.

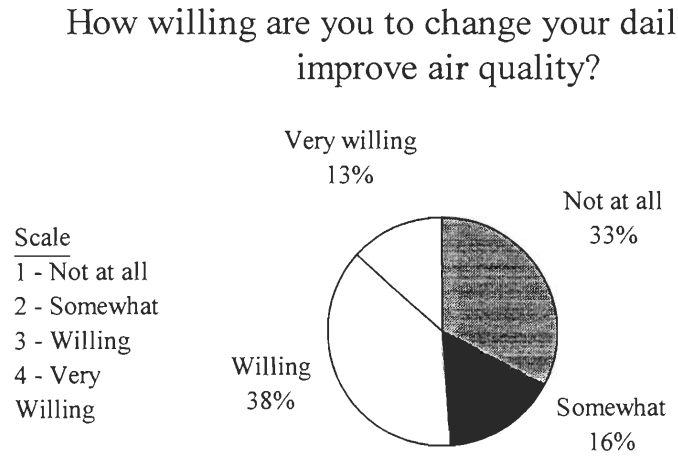

Figure 4.3 - AQMA Respondents' Willingness to Change Their Daily Habits

If a respondent answered at least "somewhat willing" to change, the respondent was further prompted with the open-ended question, "How would you change your daily habits to improve air quality?" This data is presented in Figure 4.4. Sixty-eight percent of respondents who were willing to change their daily habits answered this question. In the responses to this question, 12% mentioned that they would be willing to use a less polluting method of travel such as walking, public transport or a less polluting car in order to help improve air quality. However, while many respondents were willing to change their daily habits, 23% of respondents said they did not know what they could do. A further 11% were willing to change, but did not believe their daily habits affected air quality. This supports the idea that it may be necessary to educate the community about less polluting alternatives to daily habits. This can be an initial step in the consultation process in order to motivate unwilling and unknowledgeable people to change.

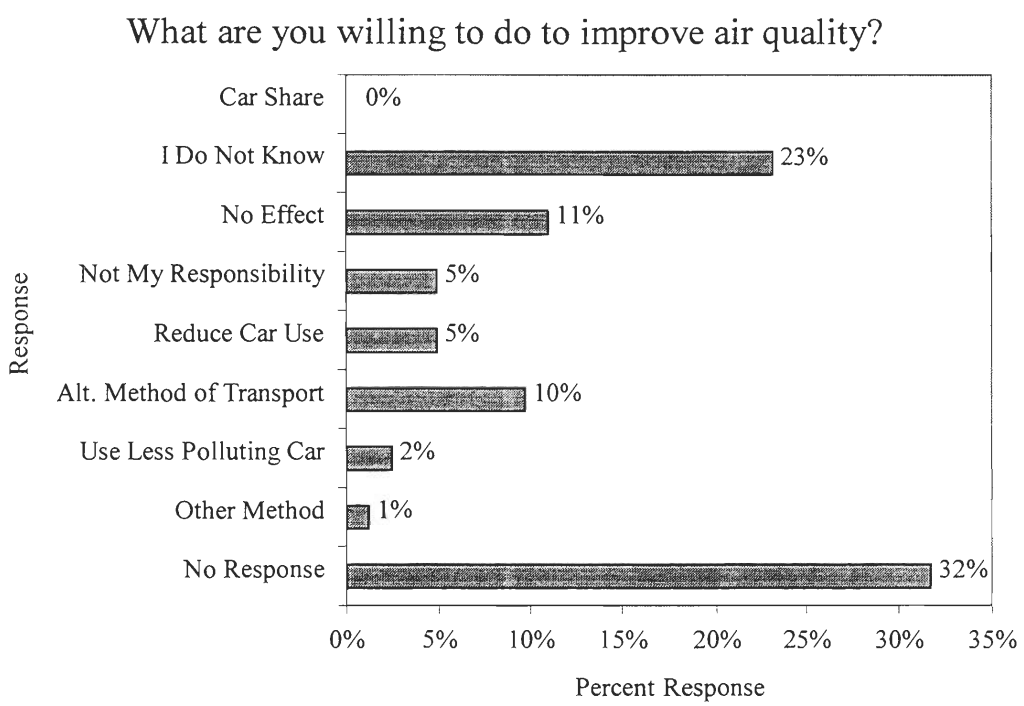

Figure 4.4 - AQMA Respondents' Ideas on How They can Improve Air Quality

Figure 4.5 illustrates that 64% of respondents believed that individual citizens are responsible for improving air quality. Also, 80% believed that local government, such as Merton Council, has a responsibility to improve air quality. This means that 36% of the people do not feel individual citizens are responsible for improving air quality. It may be necessary to inform the community that improving air quality requires the full co-operation from the entire community to be successful.

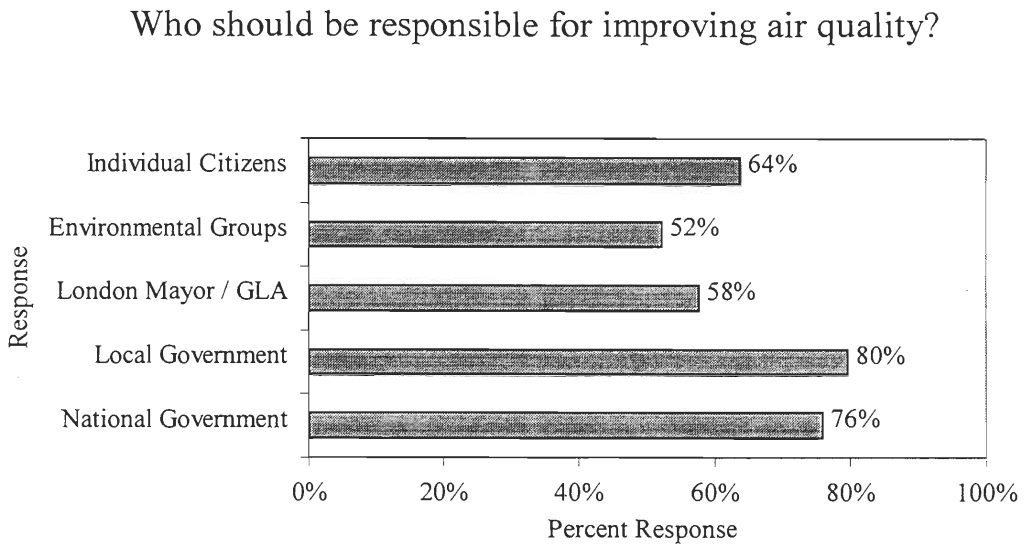

Figure 4.5 - AQMA Respondents' Views on Responsibility

The next chart in this section, Figure 4.6, reveals how individuals would express their views to Merton Council regarding air quality issues. The majority of those surveyed stated that they would either go to a public meeting (33%) or write a letter (30%) to communicate their ideas. This shows that attending a public meeting or sending a letter in order to express their views on a topic are two feasible ideas to consider in the development of a consultation process that would involve a large percentage of people.

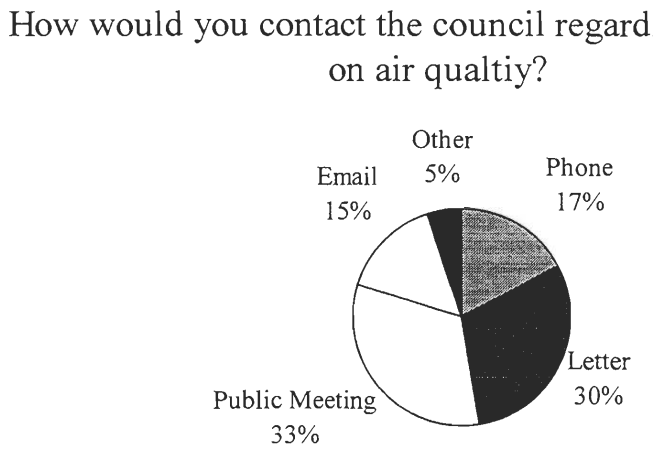

Figure 4.6 - AQMA Respondents' Methods for Contacting Merton Council

After analysing questions independently, we then determined if correlations existed between topics in our survey. For example, we were interested in determining the presence of a correlation between the respondents' concern with air pollution and the perception of air quality in the borough. A complete table of the calculated correlation coefficients, also known as *r-values*, can be found in Table 4.2.

	Significant Values	Concern vs. Perception	Concern vs. Willingness to change	Perception vs. Willingness to change
AQMA Respondents	± 0.24	-0.49	0.36	-0.15

Table 4.2 – Correlation Coefficients (r-values) for AQMA Surveys

Using the following statistical equation to calculate the range of significant correlation coefficients, (r_{sig}),

$$r_{sig} = \frac{\pm 2.5}{\sqrt{\text{Sample Size}}}$$

we determined that for our sample size of 109 and for an accuracy level of 99%, any correlation value greater than +0.24 or less than –0.24 would indicate a significant correlation (Rowntree, 1981). We calculated the correlation between concern and perception to be a value of -0.49. This strong negative correlation suggests that those who were more concerned with air pollution also perceived the air quality as poorer. This leads to the idea that Merton Council could work on educating the public. The next correlation, concern versus willingness to change, resulted in a moderate, positive correlation value of 0.36. This indicates that those concerned with air pollution may also be willing to change their daily habits to improve air quality. Finally, we calculated the correlation between the respondents' perception of air

quality and the willingness to change their daily habits. This calculation resulted in a weak negative value of -0.15. We expected this correlation to be stronger, since those who thought the air quality was poor might also say they would be willing to change to improve the air quality. However, this lack of correlation could be explained by some respondents who perceived the air quality as being poor responding that they would not be willing to change their daily habits since they do not feel they can do any more to improve air quality. It is important to note that all of these correlations do not necessarily mean that one issue causes the other; however, we used our focus groups to provide a deeper examination of these causal relationships.

4.2.2 Merton Council Employee Surveys

Overall, the response rate for the global electronic mail surveys sent to Merton Council employees was 20%. This low response rate means there is an opportunity for biases since a majority did not respond to the survey or a follow up reminder. Therefore, there are still many different responses that could be obtained to alter our results. The response rate and the possibility of biases also means that we should not attempt to generalise the results to represent the entire Merton Council. The demographics of the respondents including gender, age, and ethnic background are shown in Table 4.3.

Demographics	Category	Merton Council Employees
Ethnicity	White	90%
	Black	4%
	Asian	2%
	Other	4%
Gender	Male	42%
	Female	58%
Age (years)	15-24	3%
	25-34	17%
	35-44	31%
	45-54	38%
	55-64	11%

Table 4.3 - Merton Council Respondents' Demographics

We focused on the data shown in Figures 4.7 to 4.11 during our analysis because of its usefulness in the design of an effective consultation process. The first chart, Figure 4.7, displays the level of respondents' concern for air pollution. Ninety-seven percent of those surveyed are at least "somewhat concerned" with air pollution. This high percentage strongly suggests the Merton Council respondents are generally concerned with air pollution. This may be a result of an inherent bias, as working for the council may lead to being educated on environmental issues. It could also be due to our low response rate, since individuals concerned with air pollution may have been more inclined to complete the survey and therefore represent a significant portion of our responses.

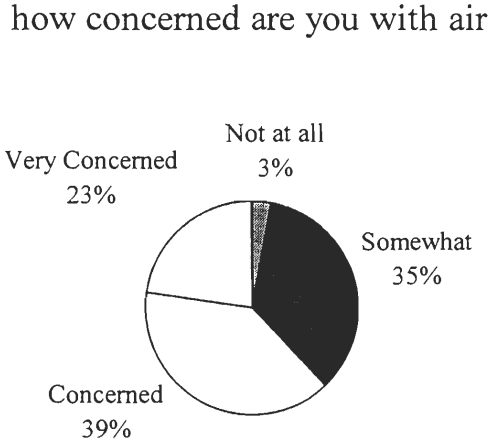

Figure 4.7 - Merton Council Respondents' Concern with Air Pollution

The next chart, Figure 4.8, illustrates respondents' perception of air quality in the borough. This figure shows that the majority of those surveyed (65%) believe that the air quality in Merton is "fair", while 23% feel that it is "poor." No respondents felt the air quality was "very good" in Merton. This shows that the majority of these respondents from Merton Council are also aware of the poor air quality problem in the borough.

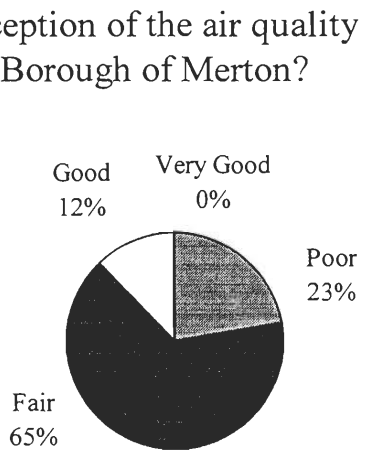

Figure 4.8 - Merton Council Respondents' Perception of Air Quality in Merton

The next topic of interest was the responses obtained to the question, "How willing are you to change your daily habits to improve air quality?" The responses show 34% of surveyed Merton Council employees are "willing" or "very willing" to change their daily habits to improve air quality. The majority (52%) were only "somewhat willing" to change. We found it interesting that while many of the surveyed Merton Council employees are concerned with air pollution and realise that the air quality is poor, many are also only somewhat willing to change their daily habits in order to improve air quality. This statistic is important to note because it shows that this group of stakeholders may be a target for education to increase their willingness to change so that air quality can be improved.

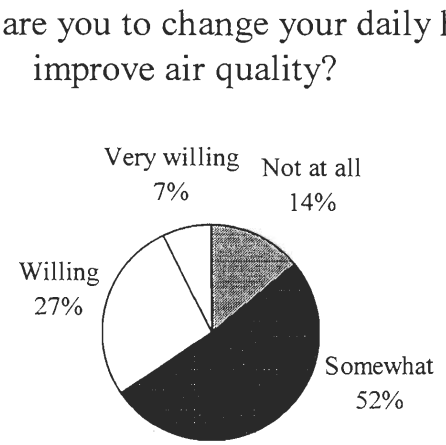

Figure 4.9 - Merton Council Respondents' Willingness to Change Their Daily Habits

Again, an open-ended question followed the question regarding the individual's willingness to change. The responses to this question were grouped into common ideas, as seen in Figure 4.10. This figure shows that of those willing to change their habits, 83% responded to the follow-up qualitative question, "What are you willing to do to improve air quality?" The most common response was to use a different method of travel. Other methods mentioned included car sharing or car-

pooling and the use of a less polluting car. Thirteen percent of survey participants were willing to change their behaviour, but did not know what to do, and 8% did not believe their daily habits affected air quality. These results suggest that it may be necessary to inform the community of actions that they can take to reduce air pollution in the borough.

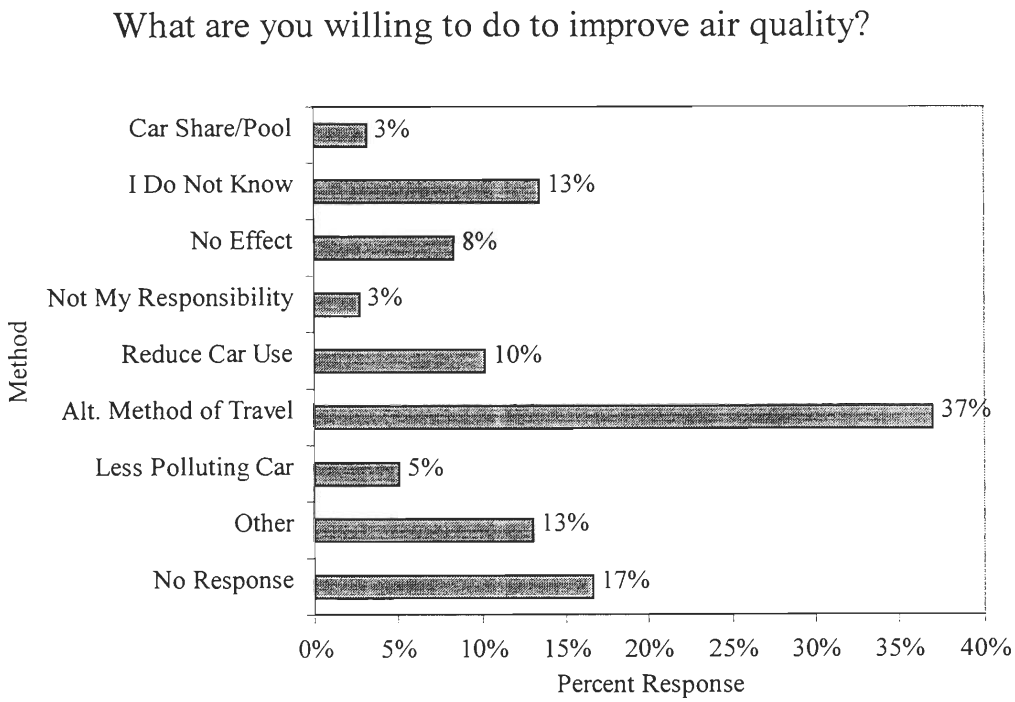

Figure 4.10 - Merton Council Respondents' Ideas on How They can Improve Air Quality

The final chart of interest to us, Figure 4.11, reveals who Merton Council respondents feel is responsible for improving air quality. Eighty-five percent feel that individual citizens should be responsible, and 89% of those surveyed feel Merton Council should be responsible. This is encouraging because the surveyed Merton Council employees seem to recognise that individual citizens and local governing bodies need to co-operate in decreasing pollution levels. However, in referring to Figure 4.9, it is also important to note that while many Merton Council respondents may feel that individual citizens and Merton Council should be responsible for

improving air quality, many of these respondents are only somewhat willing to change personally in order to improve air quality. This shows that this group of people should be targeted to relate the air quality problem to them personally in order to improve their willingness to change.

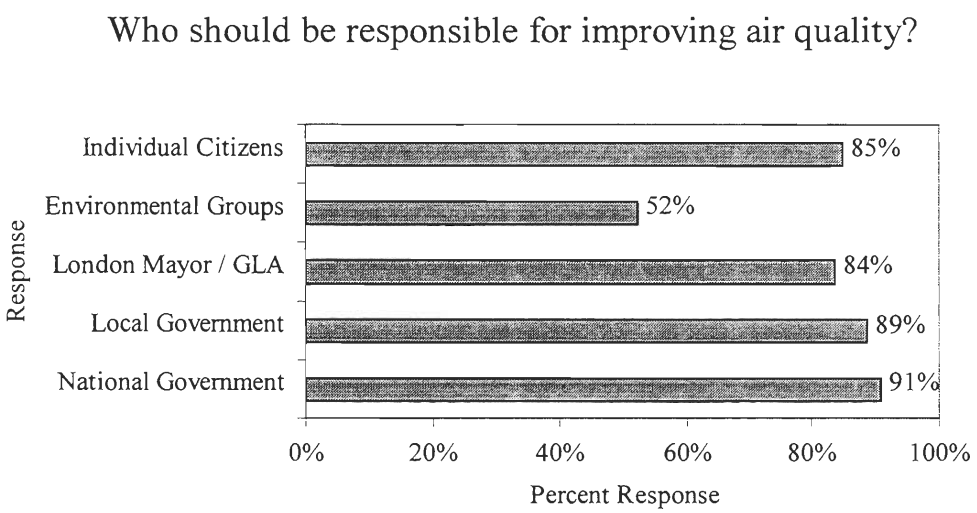

Figure 4.11 - Merton Council Respondents' Views on Responsibility

We calculated the same three correlations for Merton Council employees as we did for the AQMA respondents. However, the range of significant correlation coefficients, or *r-values*, for Merton Council respondents was calculated to be different than those for AQMA respondents due to the larger number of responses. Using the same equation as mentioned in Section 4.2.2, except substituting 240 for the number of Merton Council respondents, we calculated that any correlation coefficient greater than 0.16 or less than -0.16 would indicate a statistically significant correlation between the two data sets. These values are shown in Table 4.4.

	Significant Values	Concern vs. Perception	Concern vs. Willingness to change	Perception vs. Willingness to change
Merton Council Employees	0.16	-0.27	0.46	-0.23

Table 4.4 – Correlation Coefficients (r-values) for Merton Council Employee Surveys

The first correlation coefficient we calculated was between concern for air pollution and perception of air quality in the borough. The r-value was calculated to be –0.27, demonstrating a moderate negative correlation. This means that the respondents who were concerned with air pollution may have also perceived the air quality to be poor. The next correlation coefficient that we calculated was between concern with air pollution and willingness to change. This displayed a strong positive r-value of 0.46, which indicates that as the level of concern with air pollution raised so did the willingness of the respondent to change their daily habits. The strength of this correlation agrees with our data, which shows that a relatively high percentage (35%) of respondents are only "somewhat concerned" with air quality. Additionally, a high percentage of respondents (52%) are only "somewhat willing" to change their daily habits to improve air quality. The final correlation coefficient we calculated was between respondents' perception of air quality and their willingness to change their daily habits. We calculated a moderate negative correlation coefficient of –0.23 between these two factors. This correlation indicates that those respondents who perceived the air quality to be worse were likely to be more willing to change their daily habits to improve air quality.

4.2.3 Comparison of AQMA Respondent and Merton Council Employee Surveys

After analysing the data we received from AQMA respondents and Merton Council employees, we proceeded to draw comparisons between the two groups regarding several topics. These topics included the percentages that used cars as their primary method of travel, their perception and concern with air quality, and their willingness to change their daily habits to improve air quality. We concluded it would be important to compare how the attitudes and opinions of AQMA respondents were similar and different to those of Merton Council respondents. This is useful because one group represents the individuals being directly affected in the areas of high pollution while the other group represents a large number of commuters whose behaviour directly affects the AQMA residents. We drew these comparisons for two reasons; first, because after analysing the data from each group separately we developed the theory that the majority of those respondents living in the possible AQMA locations were using methods of transportation that were less polluting than cars and consequently were not greatly contributing to the air pollution problem. Secondly, these comparisons aid in illustrating the differences and similarities between the concerns of an individual who lives in a high pollution area versus an individual who lives outside the area. Literature suggests consultation with both groups will be necessary in order to improve air quality, and the differences in awareness and concerns between the groups is important in the dissemination of information and the development of a consultation process. It is important to note that due to the lower response rate of Merton Council employees, the comparisons are based on the responses of the respondents only and consequently conclusions cannot be drawn for all AQMA residents and Merton Council employees. The following charts, Figures 4.12 through 4.14, illustrate these comparisons.

This first chart, Figure 4.12, demonstrates that 69% of Merton Council respondents are using their cars as their primary method of travel, which is greater than the 39% of AQMA respondents who use their car as their primary method of travel. This means that a lower percentage of AQMA respondents are contributing directly to the air pollution problem through the use of cars.

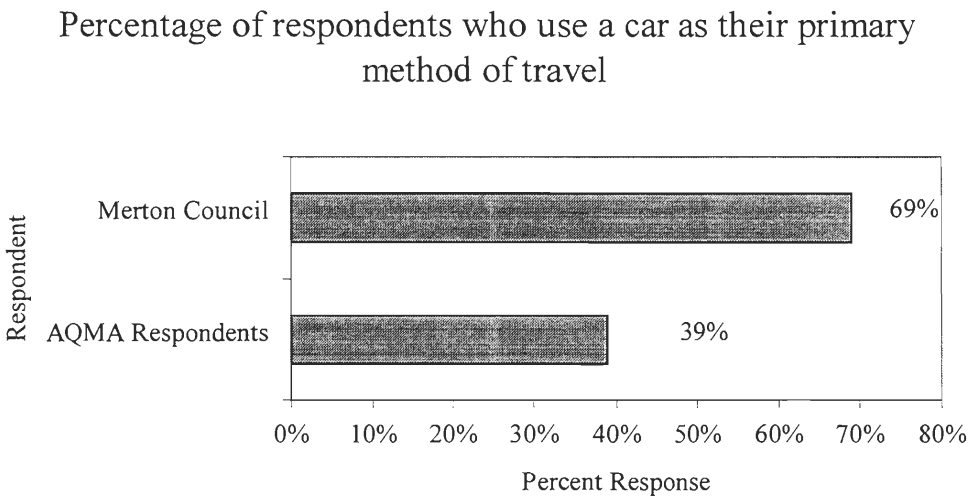

Figure 4.12 - Car User Comparison Between AQMA Respondents and Merton Council Respondents

Figure 4.13 presents a comparison between the perceptions of AQMA respondents and Merton Council respondents regarding air quality in the borough. This figure demonstrates that a greater percentage of AQMA respondents felt the air quality was "poor", while a greater percentage of Merton Council respondents felt the air quality was "fair." However, roughly equal percentages of each group felt the air quality was "good", and nobody from either group said the air quality was "very good." The greater percentage of AQMA respondents replying that air quality was "poor" is to be expected because these stakeholders live in areas of high pollution.

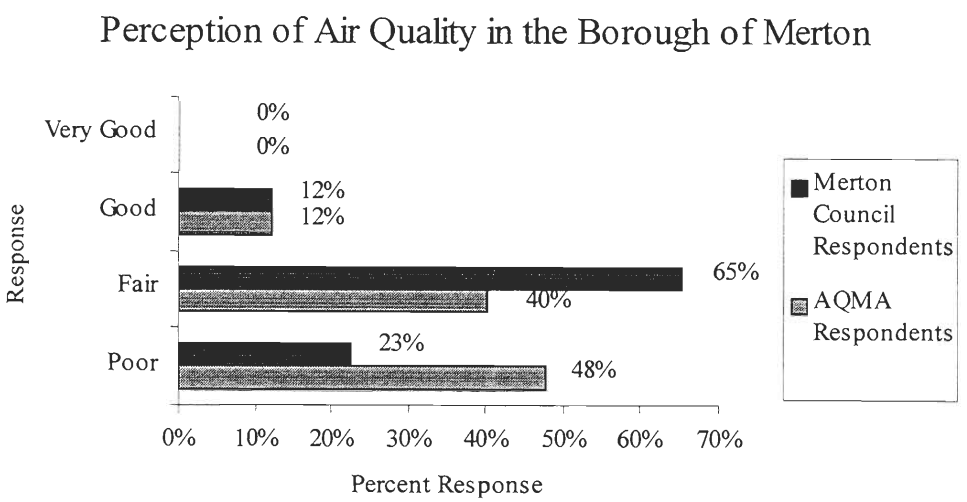

Figure 4.13 - Perception of Air Quality Comparison Between AQMA Respondents and Merton Council Respondents

The next comparison we drew between the two groups was about their concern with air quality. Figure 4.14 shows that 41% of AQMA respondents are "very concerned" with air pollution. This is greater than the 23% of Merton Council respondents who are "very concerned" with air pollution. The greatest percentage (39%) of Merton Council respondents were "somewhat concerned" with air pollution. This result is not surprising because respondents in possible AQMA locations are exposed to high levels of pollution every day, which can raise their concern as demonstrated by the previous correlation between concern with air pollution and perception of air quality for AQMA respondents.

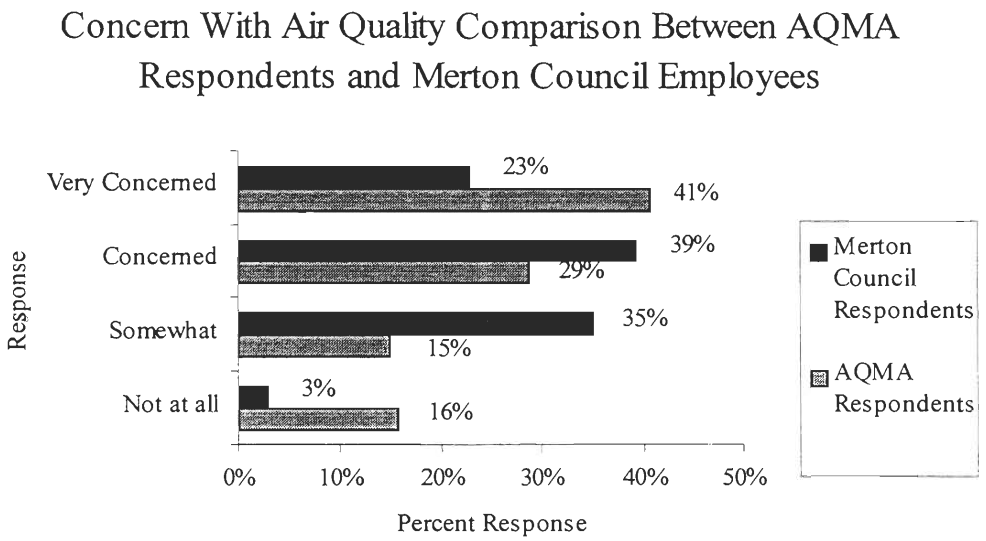

Figure 4.14 - Concern with Air Quality Comparison Between AQMA Respondents and Merton Council Respondents

The final comparison we examined between the two groups was about their willingness to change their daily habits in order to improve air quality. Figure 4.15 illustrates that 38% of AQMA respondents are "willing" to change and 13% are "very willing" to change. This can be compared to 7% of Merton Council respondents who are "very willing" to change, 27% who were "willing" to change, and the majority of who were "somewhat willing" to change. The difference in this response was also somewhat expected because AQMA respondents have been shown from the previous comparisons to generally be more concerned with air pollution than Merton Council respondents and also have perceived the air quality to be worse than Merton Council respondents. Also from the previous correlations for both groups we determined that the respondents who were more concerned were also more willing to change.

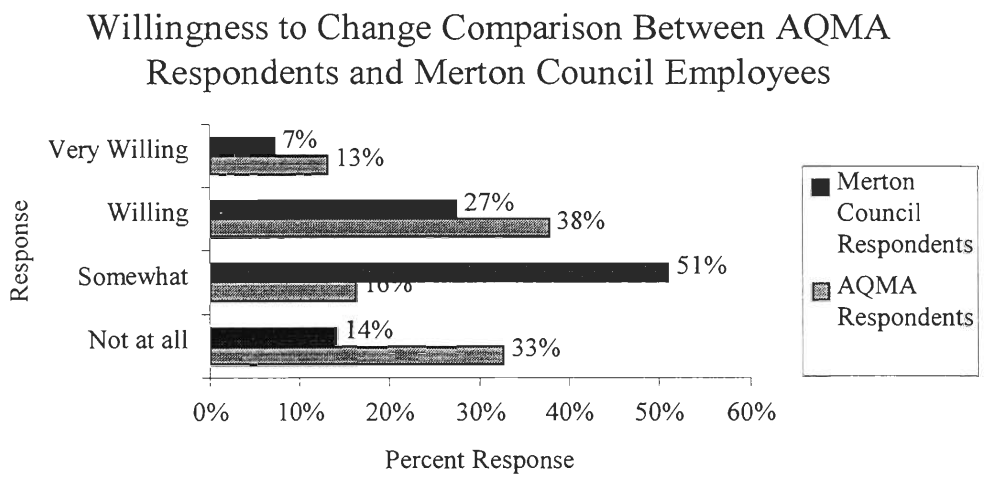

Figure 4.15 - Willingness to Change Comparison Between AQMA Respondents and Merton Council Respondents

All of these comparisons demonstrate that AQMA respondents are more concerned by the air pollution problem then Merton Council employees are. They also perceived the air quality to be worse than Merton Council employees did. However, based on our qualitative data we found that many respondents feel that there is not much they can do to improve the situation because most of them do not travel by car and are not contributing the air pollution problem. On the other hand, Merton Council employees are not as concerned with the air quality and at the same time use their cars more to travel. Being one of the largest employers in the London Borough of Merton also means they represent a large number of commuters that can cause air pollution. These attitudes were further discussed in our focus groups to gain a better understanding of the issues; the results are presented in the following section.

4.3 Focus Group Results and Analysis

As described in Section 3.6, we conducted three focus group sessions with a cross-section of businesses, residents, interest groups, and Merton Council employees.

Details of the focus group sessions are located in Appendix O. Table 4.5 is a complete list of the individuals who attended each session:

Session 1 10 April, 7:30 PM Ante Room	Session 2 11 April, 7:30 PM Ante Room	Session 3 12 April, 7:30 PM Ante Room
1 resident 1 representative from the Merton Chamber of Commerce	3 residents 2 Merton Cycling Campaign representatives 1 Merton Friends of the Earth representative 1 London Borough of Merton Transport Planning representative	1 resident 1 Phoenix College student representative 1 resident association representative

Table 4.5 – Focus Group Attendance

Technically, sessions 1 and 3 are considered structured group interviews because of the small number of participants; however, for the purposes of our project they are referred to as focus groups because of the interaction between participants and the valuable data collected. Biases may have resulted due to the low attendance of Sessions 1 and 2, since in each case at least one of the targeted groups was not represented.

After completion of the three focus group sessions, we devised a scheme for analysing results to assess existing consultation processes and determine suggestions for future consultation processes. We titled this scheme *S.W.I.B*, or *S*trengths, *W*eaknesses, *I*mprovements, and *B*arriers, as each letter in the acronym stands for a category used in the analysis. Strengths and weaknesses were analysed to assess both previous and current methods of consultation. Analysing barriers and improvements allowed us to gain insight into the possibilities for future methods of consultation, as well as obstacles that Merton Council may face during their implementation. Detailed comments and quotations from participants, separated into the *S.W.I.B.* categories, are

located in Appendices P, Q, R, and S.

We also looked for prevailing themes that focused mainly on the three summary items agreed upon at the conclusion of each night's discussion. Table 4.6 indicates the summary topics for each focus group session. A more detailed explanation of summary topics is located in Appendix T.

Session 1	Session 2	Session 3
Simplicity of information	Raise awareness	Simplicity of information
Localised consultation	Simplicity of information	Localised consultation
Image of Merton Council	Merton Council lead by example	Merton Council openness to change

Table 4.6 - Summary Topics for Focus Group Sessions

Grouping comments from the discussion into the four *S.W.I.B.* categories provided a comprehensive analysis of the current state and future possibilities of consultation between Merton Council and the community. These groups of comments are discussed in the following sections.

4.3.1 Strengths of Existing Consultation Efforts

Currently, Merton Council does not actively seek community opinion regarding air quality issues; however, the strength of previous consultation processes in other areas and existing methods of information dissemination were mentioned throughout the duration of the focus groups. Awareness of these established methods may help in the development of further methods for consultation.

Several participants suggested that effective methods of disseminating information already exist and keep the community informed on either air quality information or council-related news. One prevailing opinion was that the electronic

bulletin board in Wimbledon Town Centre provided an excellent source for receiving information. Participants commented that they had previously viewed air quality information on this bulletin board, as well as other news concerning the state of the borough. Also mentioned was that the local weather phone system provided a way in which air quality information could be heard in a convenient manner. The *Merton Messenger*, a newsletter published by Merton Council, was commonly mentioned as a source for receiving information pertaining to any council-related issues, such as proposals for legislature and progress on initiatives. Several participants also revealed that they would look for air quality information at the Merton Civic Centre, which houses the offices of Merton Council.

Along with proven methods of distributing information, several aspects of previous and current consultation efforts were mentioned as well. Several participants, including residents, business representatives, and organisational representatives, mentioned that they had been involved in previous consultation processes with Merton Council. Participants involved with the Merton Environment and Safety Forum (MESF) were aware of Local Agenda 21 and Local Air Quality Management processes, suggesting that one may gain knowledge of air quality issues and information about current action as a result of participation in this forum. The MESF also allows for a period of open feedback from its participants regarding any issue on the agenda, which focus group participants stated as an effective means of conveying opinions to the council. A representative from the Merton Cycling Campaign cited that their organisation meets quarterly with a transportation planner from the Council to discuss environmental and transport issues. Participants mentioned meetings between the Council and the Wimbledon Civic Group as another effective way for Merton Council to gather community opinion.

Established methods of communication could help to in the development of recommendations for improved consultation; this can be done by using existing consultation methods as a comparison in deciding what future consultation methods may or may not be accepted by the community. Although participants remarked that certain methods for releasing air quality information were successful, there are also weaknesses that demonstrate the possibility for improving the effectiveness of each method. These weaknesses are discussed in the following section.

4.3.2 Weaknesses of Current Efforts

Whilst several methods of information dissemination and consultation were mentioned as being effective, focus group participants generally agreed that the current communication between Merton Council and the community needs improvement. Determining the weaknesses of the current consultation process will help us decide which aspects need careful consideration for revision. The focus groups led to the discussion of several flaws, including problems with presentation of information, faults in the current process of consultation, and blemished perception of Merton Council.

Although several ways in which Merton Council releases information were considered as effective, most participants also found reason to criticise these techniques. The critiques were based on two aspects of information dissemination; the first of these categories was faults in the presentation of information being released. A majority of the participants were unaware of the process of Local Air Quality Management. One participant stated, "Merton Council is not effective in providing air quality information" (Session 1, Participant 1). Another participant noted that information distributed by the Council is "scientific and not simple

enough," continuing to say that an air quality publication aimed at raising public awareness "should not look like something put out by Merton Council" (Session 1, Participant 2). The need for simplicity of information became a general theme in response to air quality information, and spurred a discussion considering improvements for the presentation of information. This topic is later discussed in Section 4.3.3.

The second flaw with the current dissemination of information included weaknesses in the actual method of distributing information. Although several participants mentioned Merton Council's web site and the Council's publication, the *Merton Messenger*, as being effective places to publish information, each method drew criticism. One participant added that standard "mail drops are useless" (Session 3, Participant 1), stating that the use of the Internet needs to be considered. Still under development, the Council's web site, http://www.merton.gov.uk, does not contain any air quality information. Furthermore, although the *Merton Messenger* contains information regarding council activities, it is only published quarterly, which may cause information to become outdated by the time of publication.

As stated before, several participants had previously participated in consultation with Merton Council, and mentioned numerous flaws with the current process. Several manners of consultation that Merton Council already implements were discussed in the focus groups, including questionnaires and forums. The usefulness of questionnaires was debated, with one participant stating "Questionnaires yield a bad response… people don't return surveys" (Session 1, Participant 2), citing a recent survey with a target population of 70,000 that yielded just over 500 responses. Forums are another method of consultation actively used by Merton Council. One participant, in disagreement with their intended use, stated

> "The value of consultation has to be questioned by the method of forums. In fact, the people who go are professional meeting-attendees. (The people who Merton Council wants to attend) are the people who don't feel they have access, and they're not likely to go to meetings" (Session 1, Participant 2).

This participant also believed that the attendance of forums is usually comprised of interested parties, not representatives from the general community. Another participant indicated that these organisations do not always represent the members of the group, sometimes speaking on behalf of the organisation without ever consulting the members on a particular issue. In response to a question asking residents about involvement in consultation, one participant stated, "Normally, I am not asked to be involved." These comments suggest that Merton Council needs to improve the scope of consultation, involving not only businesses and organisations but also the general, non-represented citizen.

The last major topic concerning weaknesses with current consultation was the perception of Merton Council. Many participants expressed discontent with the lack of public input to changes in policies. Several participants stated that after being involved in a consultation process and sharing their viewpoints, Merton Council had disregarded their input. One participant noted "there are no changes after public comments" (Session 1, Participant 1) are made, and another stated "Merton doesn't listen... the council is very reluctant to back down" (Session 3, Participant 3). This perception of Merton Council ignoring input led some participants to believe that participation in consultation exercises was "worthless" (Session 2, Participants 1 & 3). The issue of timeliness also arose during discussion of consultation practices. Many participants felt that consulting after decisions had been made was inappropriate, since the community was commenting on what has already been proposed, having no say in the actual development of the proposal. Finally, the issue of Merton Council's leadership was raised. Several participants expressed their belief that the Council

needs to "lead by example" (Session 2, Participant 2), and not set a double standard by backing Council proposals, yet remaining a contributor to the air pollution problem. These attitudes may be severely detrimental to the current consultation process, and could justify the current lack of community participation.

The weaknesses in current and past consultation efforts highlight numerous areas that may be causing a decrease in participation. Therefore, these weaknesses may be counterproductive to raising community awareness about air quality. However, understanding these weaknesses presents an opportunity for improving the current situation of communication between the Council and the community.

4.3.3 Suggested Improvements for Future Efforts

The question route used in the focus groups aimed towards gathering suggestions for more efficient methods to disseminate information and engage in consultation with the community. Because of the weight placed on this topic, numerous suggestions for improvement were discussed during the duration of the focus group sessions. Although the topics varied between sessions, they can be grouped into the following three categories:

- Suggestions for dissemination of information;
- Suggestions for improvement of current consultation; and
- Suggestions for improving the perception of Merton Council.

Common themes in suggestions may help in determining realistic approaches to narrowing the communication gap between Merton Council and the community.

During the discussion on information dissemination, two separate themes emerged: first, the presentation of the information being released; and second, places or methods for releasing information. Suggestions regarding presentation of

information were based generally on past encounters with receiving information from Merton Council. Three general themes for information presentation emerged – simplicity, appearance, and context.

Simplicity. Air quality information needs to be kept simple, avoiding technical terminology and jargon associated with air quality. Air quality information should be put into context. One participant noted, "[People] respond to inhalers, not to 14 parts per billion of nitrogen dioxide" (Session 1, Participant 2).

Appearance. Air quality information needs to be presented in an attractive manner. Participants agreed that since the aesthetic appeal of a document will initially entice the reader, the document should look "sparky", "bright", "exciting", and "in-your-face" (Session 1, Participant 2). Several participants suggested that a marketing company or public relations firm could be hired to design an enticing air quality document or press release. Visual representation of information was voiced as the most effective way to present information. Using a graph as a visual tool was both criticised and praised; however, most participants agreed that colourful graphs could be used to convey meaningful information as long as it was not presented in a technical manner. Presenting information attractively may generate interest among the community concerning air quality issues.

Context. Air quality information needs to be related to everyday life and to the average citizen. A common scenario discussed by participants in our different focus groups was using the rising amount of asthma cases to demonstrate the effects of poor air quality. It was also suggested that raising awareness of the seriousness of air quality might be done through the use of scare tactics, by highlighting the detrimental effects of air quality on health, such as asthma. Most participants felt that Merton Council needs to emphasise to people that improving air quality is everyone's

responsibility. The "ownership" (Session 2, Participants 6 & 7) of the air quality problem needs to be given to the entire community, not solely to Merton Council. If the community is aware of the direct affect their lifestyle has on air quality, they may be more likely to be involved in becoming a part of the solution. People need to be convinced that their involvement is beneficial, since improving air quality will directly improve their quality of life.

Along with suggestions to improve the content and presentation of air quality information, participants also offered ideas on locations to place and distribute this information. Several methods of distributing information were discussed, including the use of media and community locations.

Media. The use of printed media, such as newspapers and leaflets, was widely supported by a majority of participants throughout the discussion groups. Air quality information could be published in a local paper, such as the *Merton Messenger*, on consistent time intervals. The use of a local radio station, *SoloNet*, was also discussed as a means to announce daily air quality bulletins; however, no participant was sure as to the exact times of broadcast, nor the listener base. A relatively new form of media, the Internet, was also a common suggestion. Although most participants who discussed this option were strongly in favour of seeing air quality information available on the Council's web site, these participants were mainly in the younger age demographic. Thus, this method may exclude both older aged citizens and those without Internet access.

Community Locations. In addition to information released through media, participants discussed reasonable, conspicuous locations within the London Borough of Merton to place air quality information. Several large gathering areas that do not already contain air quality information, such as Wimbledon Centre Court, the largest

shopping mall in Merton, and the Morden Tube Station, one of the most heavily trafficked underground stations in Merton, were mentioned as possible locations for posting information. Other public buildings, such as libraries, colleges, and hospitals, were discussed as places to post more in-depth, complete air quality information. Several participants agreed that car users should be targeted as a group who should see air quality information regularly. This prompted several ideas for locating information along roadways. Placing information at schools where parents could easily see air quality information was a common theme, as many participants stated that short journey car trips to bring children to schools were a major contributor to the air pollution problem. Also, participants noted the existence of large message boards owned by Merton Council around the borough, suggesting that these bulletin boards could be used to post air quality information for drivers to see. One participant recommended using advertisements near corners of shopping buildings to promote air quality awareness.

These ideas for presentation and dissemination of air quality information may be helpful in generating community awareness; however, the current consultation process must also be improved in order to gain opinion from those community members who become interested. Three major themes were discussed as a result of current or past consultation processes – the need for proactive consultation by Merton Council to involve the entire community, the need for localised consultation, and the need for a policy change as a result of public opinion.

Proactive Approach. Many participants expressed the opinion that residents refuse to participate in consultation process due to the lack of information regarding air quality provided by Merton Council. Also, the participants suggested that Merton Council should actively solicit participation by organisations that were currently

uninvolved in the consultation process, especially those groups who may have a role in either contributing to air pollution or preventing it. Consultation before the release of proposals or actions plans was also mentioned as a step that could be taken to increase community participation in Council decisions.

Localised Consultation. The use of current borough-wide forums was discussed as an ineffective means to consult with the community and a weakness in Merton's current consultation efforts. Often, these forums involve only organisational representation, excluding most residents' viewpoints. One possible solution to this problem is to evoke localised consultation. Holding regular meetings in localised areas, such as community centres or libraries, can attract more residents and citizens who feel more comfortable in their own communities. These gathering places present a more informal, less intimidating atmosphere than the Civic Centre. Furthermore, community members can discuss air quality issues in relation to their own local communities. Resident association leaders or another community representative who are independent of Merton Council could moderate these discussions, further decreasing intimidation. This may encourage opinions or solutions normally not discussed in a borough-wide forum moderated by Merton Council representatives. Merton Council could also consult with existing community groups, such as the Wimbledon Civic Group, in an effort to exchange viewpoints representative of each organisation.

Public influence on policy decisions. Many participants also felt that even though communities and residents have previously given input to Merton Council regarding issues, there was a perception that a policy or action plan has never changed due to public input. It was suggested that the Council show one change in policy as a result of public opinion in order to convince the community that their views are valid.

This concept also involves consulting prior to decisions, proposals, or action plans being released, therefore allowing time for the community to witness the change. A change in policy may also increase future participation in consultation.

Examining the overall perception of the Council is another method for considering ways to increase community participation in consultation exercises. Many participants expressed concern with the poor community perception of the Council, feeling that it may hinder any efforts to improve consultation in the future. Some participants cited the lack of change initiated by public opinion as a reason why the council is viewed poorly; however, other participants, one of who was a Merton Council employee, noted that the Council does have limits to what they can achieve during consultation. It was suggested that the Council should explain in detail the limits of the consultation process and articulate the boundaries of what can and cannot be changed. This may avoid the perception that the community's viewpoint is never taken into consideration during the subsequent stages of action planning for air quality. Many participants also felt that Merton Council needs to set an example for the community as an initiative to show concern for the air quality problem. This could entail establishing air pollution reduction strategies for employees of Merton Council, such as creating a green transport plan for Civic Centre employees. A favourable community perception of the Council could be restored if the Council is active in setting standards towards reducing pollution.

4.3.4 Barriers to Future Improvements

While many improvements to consultation were suggested during the course of our discussion groups, barriers to improvements were also discussed. The majority of individuals felt that there might not be enough resources available to Merton Council to make suggested improvements. Participants discussed the availability of

time, money and effort that Merton Council may have as possible resource problems. For example, implementing other billboard signs across the borough such as the one near Wimbledon Centre Court to display air quality information would be expensive. Suggestions for using a marketing company to design posters that effectively catch a person's attention could be too costly and time consuming. Also, using large attractive advertisements in comparison to smaller, textual advertisements in local newspapers can be expensive to create and use on a regular basis.

Along with identifying barriers to the dissemination of information, individuals also mentioned possible barriers to consultation. The majority of participants suggested offering incentives to entice community participation. This suggestion raised the question of how much money Merton Council could allocate to provide incentives for participation. The concept of localising consultation processes to more specific communities also may result in problems with implementation, such as the amount of workhours employees can spend on consultation efforts. Some participants expressed the opinion that no matter what the Merton Council does, the community may not be interested in a consultation process and may not be willing to change their habits to improve air quality. Finally, an important issue, which may prohibit the success of consultation, is that it may be difficult to change the community's perception of Merton Council. People have formulated perceptions on what the council does, and efforts made by Merton Council may never gain widespread support. These barriers were addressed and considered when we determined our final recommendations for possible methods to disseminate information and consult with residents, businesses, and organisations in the London Borough of Merton.

4.4 Integrative Analysis

To first establish patterns within data sets, we analysed our data from background literature, interviews, surveys and focus groups separately. We then looked at common themes between all the collected data, relating them to our goals of dissemination of information and consultation, in order to formulate our recommendations. The five most common themes are presented in Tables 4.7 through 4.11.

The first recognisable theme that occurred throughout our data collection was that of the presentation of information. The different data relating to this topic are shown in Table 4.7.

Literature Review	Interviews	Surveys	Focus Groups
- NAQS dictates that action plans must be released; however, it does not discuss the presentation of this material. - Camden case study concluded people want clear and concise information.	- This issue was not addressed in the Interviews.	- Results and correlations suggest that educating the community about air quality may be necessary	- Participants mentioned material should be presented in an attractive, simplistic and visually appealing manner and that providing a context for air quality information may help the community understand the information more.

Table 4.7 – Integrative Analysis Results Regarding Presentation of Information

From our literature review we learned that the NAQS dictates information to be released to the public. As a result of our data, we saw that education was necessary for Merton stakeholders. It was a common theme that the release of this information in order to educate the public should be concise and clear.

The release of information was another theme that was common throughout

our collected data. Table 4.8 shows the different data regarding the release of information.

Literature Review	Interviews	Surveys	Focus Groups
- NAQS and LAQM require Councils to contact all relevant stakeholders during the development of action plans. - Camden attempted a mail survey but received a poor response rate.	- US authorities suggested the techniques of mass mailing, Internet posting, television advertising, and newspaper articles. - UK authorities suggested mass mailing, articles in local newspapers, and the *Merton Messenger*.	- Our survey response rate suggests that mass mailing is not as effective as an in-person survey.	- Participants mentioned that information in the local newspaper is effective. - Participants suggested using a marketing campaign for posters and signs to advertise the importance of air quality so the community may take notice of the air quality problem. - Participants mentioned information should both on borough-wide and localised levels.

Table 4.8 - Integrative Analysis Results Regarding the Release of Information

Our data showed different opinions regarding mass mailings. Authorities currently use mass mailings to distribute information; however, participants in our focus groups felt that mass mailings are generally ineffective. This was further emphasized by the low response rate from our mail-back surveys and other attempted surveys. Local newspapers were suggested as another method of releasing information that may be more effective.

Another common theme, resident-based consultation, was also subjected to integrative analysis as shown in Table 4.9.

Literature Review	Interviews	Surveys	Focus Groups
- Denver and Camden case studies suggest involving citizens early and often, as this may encourage the community to support action plans and take responsibility.	- UK interviewees explained that questionnaires were the most frequent forms of consultation in the past. - Contact through tenants associations and the MESF was also suggested.	- Survey results showed that 33% of respondents favoured discussions groups, and 30% favoured letters.	- Participants mentioned moving away from mass mailing towards localised consultation in communities using a mediator independent of Merton Council.

Table 4.9 – Integrative Analysis Results Regarding Resident-based Consultation

All methods of data collection mentioned involving citizens in the development of action plans. In order to accomplish this, all data suggested using discussion groups to obtain community feedback. While Merton Council officials who we interviewed only noted the use of the Merton Environment and Safety Forum to gather resident's opinions, focus group participants suggested using localised discussions with moderators independent of Merton Council.

In addition to resident-based consultation, organisation-based consultation was also a theme throughout our data. This data is located in Table 4.10.

Literature Review	Interviews	Surveys	Focus Groups
- NAQS and LAQM require the involvement of appropriate businesses in consultation exercises. - Camden and Denver involved businesses during consultation through discussion groups.	- Merton Council involves business through the MESF, which is also open to the entire public.	- Again, results showed that 33% of AQMA respondents favoured discussions groups, and 30% favoured letters.	- Participants mentioned that the MESF does not accurately represent people involved with the organisations; however, groups such as the Merton Cycling Campaign and the Wimbledon Civic Group currently engage in successful consultation exercises.

Table 4.10 – Integrative Analysis Results Regarding Organisation-based Consultation

The various data we collected all mentioned the use of discussion groups or forums in order to obtain feedback from businesses. Merton Council officials who we interviewed suggested using the Merton Environment and Safety Forum as an effective way of consulting with business; however, focus group participants suggested improving this consultation by contacting businesses individually.

Finally, a theme that arose from our surveys and focus groups was the perception of Merton Council. Since this theme was unexpected it was not discussed in our interviews or researched in our literature review. The data regarding this theme is shown in Table 4.11.

Literature Review	Interviews	Surveys	Focus Groups
- This issue was not addressed in the Literature Review.	- This issue was not addressed during Interviews.	- Although this issue was not addressed directly, a majority of respondents feel Merton Council is responsible for air quality improvement.	- Participants suggested the need for improvement of Merton Council's image, as it may hinder any further consultation efforts. - Participants felt that Merton Council should "lead by example" in their actions to improve air quality.

Table 4.11 – Integrative Analysis Results Regarding the Perception of Merton Council

Surveys showed that a majority of respondents feel that Merton Council is responsible for improving air quality. Focus group participants also mentioned that Merton Council should begin the process of improving air quality by being the first to take initiatives to solve the problem. This will help to improve the perception of Merton Council, a necessary step for future consultation processes to be successful.

While performing the integrative analysis of all data, it was apparent that the data separated easily into four main themes – presentation of information, the

perception of Merton Council, resident-based consultation, and organisation-based consultation. The separation of data into these four categories, followed by a critical analysis, allowed us to develop several recommendations. These recommendations, based on the integrative analysis of results from our four methodological steps, are presented in the following chapter.

5.0 Conclusions and Recommendations

Based on our integrative analysis of background research, interviews, surveys, and focus groups, we determined several important areas of improvement for the current consultation process between Merton Council and the Merton community. These suggested improvements relate to our original goals of determining methods for disseminating air quality information to the community and for obtaining feedback through consultation with stakeholders. Conclusions and recommendations in these two areas are presented in the following sections.

5.1 Developing A Scheme for Dissemination of Air Quality Information

Presentation and distribution of air quality information were two distinct themes that consistently arose in the discussion of releasing information to the community. Our data indicates that information should be presented in a simple, concise, and attractive format in order to enhance the public's interest in air quality. This information should be presented in context with other issues in order to give relevance to the technical nature of air quality information. In addition to being published in borough-wide media, air quality information should be available on a localised level to further generate interest. Recommendations for dissemination of air quality information are described in the following sections, organised by two prevailing themes – *presentation* and *distribution.*

5.1.1 Presentation of Air Quality Information

Our survey results indicate that there is a significant lack of awareness of air quality issues in the London Borough of Merton. Although respondents showed

concern and willingness to change their daily habits to decrease air pollution, many participants were not aware of how to contribute effectively to improve air quality. Therefore, educating the public about air quality, specifically its effects on the London Borough of Merton and on the quality of life, is the first step towards increasing awareness of the air quality problem. This should lead to increased concern with air pollution and ultimately to increased community participation in action plans for air quality improvement.

We recommend that Merton Council educate the community through the release of simple, concise, and attractive documents. Merton Council should make information relating to air quality visually appealing in order to stimulate the reader's interest in the subject. For example, participants from our focus groups suggested that Merton Council use posters containing graphics and colourful displays, rather than plain text on white paper. Also, our data shows that members of the community may be inclined to respond to a more personal approach to air quality problems rather than to technical data on nitrogen dioxide, sulphur dioxide, or particulate matter levels. Therefore, instead of presenting information such as air quality terminology and technical data, **we recommend that documents include air quality information in association with other issues in order to provide relevance to the pollution problem.** For example, our research showed that poor air quality could be linked to an increasing number of children with asthma cases. Using this association could stimulate concern among the public.

5.1.2 Distribution of Air Quality Information

Establishing an effective plan for distribution of information is needed to raise

air quality awareness and concern in the community. Results from surveys and focus groups showed that a mass-mailing technique is not appropriate to obtain feedback from a large percentage of the community. In addition, there is a need to complement this borough-wide approach to information dissemination with a more localised method. The combination of both borough-wide and localised release of information should accomplish the task of raising stakeholders' awareness of current air quality issues.

We recommend that Merton Council release borough-wide information through the *Merton Messenger*, their publication of Council activities. This colourful, attractive newsletter is received at every household in the London Borough of Merton. A short, informative article or update on air quality published regularly should keep residents informed and avoid losing their interest in the subject.

Localised information should be made available using a variety of methods. **We recommend that Merton Council place information in libraries or community centres to allow access to brief air quality bulletins or updates.** This may prove effective because people already associate these locations with obtaining information. **We recommend that documents of considerable length, such as action plans or proposals, be placed on reserve for residents to view at their leisure.** The placement of these documents should be accompanied by a briefing in a borough-wide publication to ensure that all citizens are aware of their existence. The briefing would provide citizens with ample time and opportunity to review and provide feedback on the documents. **We also recommend that Merton Council make available short summaries of lengthy documents for those who are interested, but do not wish to read the entire document.**

In addition to the previously mentioned sites for displaying relevant air quality documents, **we recommend that Merton Council post information on local bulletin boards**, such as the electronic board in Wimbledon Town Centre. This would allow commuters and residents with hectic schedules an opportunity to view information while in transit. This information can contain general air quality information relevant to the entire borough, or local information specific to the locality of the bulletin board. For example, the Wimbledon Town Centre Bulletin Board could contain a briefing on the air quality band for the day, as well as a promotional message to encourage use of public transport instead of cars.

5.2 Developing A Community Consultation Plan for Air Quality Issues

Effective dissemination of information alone is not sufficient in creating a sustainable communication process between Merton Council and the Merton community. Merton Council must also consult with local stakeholders in order to obtain feedback regarding air quality issues. With regard to consultation, we recognised three important themes after analysing our interview, survey, and focus group results. These themes are improvement of the community's perception of Merton Council, need for localised, resident-based consultation, and improvement of organisation-based consultation. In addition to improvements for the actual consultation process, we have also suggested a tentative list of consultees. This list will satisfy the consultation requirements as outlined by the NAQS, and includes further suggestions for organisations that should be involved in the process. The list can be found in Appendix U. Recommendations for improved *perception of Merton Council*, improved *resident-based consultation*, and improved *organisation-based*

Council, improved *resident-based consultation*, and improved *organisation-based consultation* are described in the following sections.

5.2.1 Improving Community Perception of Merton Council

Our results show that many members of the community have a negative view of Merton Council's previous attempts at consultation. Comments generated mainly through focus group discussion demonstrated the need for a more favourable view of Merton Council in order to develop successful consultation processes in the future. In order to generate more public support**, we recommend that Merton Council consult before formulating action plans.** Also, Merton Council should base action plans on ideas brought forth by the consultation process rather than drafting a plan first, and then asking the public for feedback. The Council should then make the community aware that their ideas are being used to develop viable options for improving air quality in specific problem locations within the borough. Use of public input in developing action plans may lead to increased participation in future consultation processes; however, to alert stakeholders that the Council does not have the ability to implement all suggestions, **we recommend that Merton Council articulate what powers and limitations the council has in developing policies.**

To further improve public perception, **we recommend that Merton Council lead by example, by having employees take initiatives to improve air quality.** For example, Merton Council employees should use their own cars less when commuting to work and promote the use of public transport. In circumstances where public transport is not a viable option, employees should at least attempt to car share. If

5.2.2 Improving Resident-based Consultation

Survey results demonstrated the stakeholders' interest in using public meetings to discuss air quality issues; however, after analysing our focus group data, we determined that borough-wide meetings lack residential participation. This may be due to factors of intimidation arising from both the setting of the Council Chambers in the Merton Civic Centre as well as from the co-ordination and moderation of the event by representatives from Merton Council. Therefore, **we recommend a localised approach for involving residents in consultation processes.**

To establish a localised consultation process**, we recommend that Merton Council develop several discussion groups located in various areas in the borough.** Care needs to be taken in deciding which venues are chosen for these discussion groups. Although Merton consists of three towns further broken into eleven wards, people tend to associate themselves with the community in which they reside, not necessarily their designated town or ward. For air quality issues**, we recommend that Merton Council initiate discussion groups within locations designated as potential Air Quality Management Areas.**

Discussion groups should be held at libraries, community centres, or even in a large building of flats**. We recommend that individuals who are independent of Merton Council moderate these discussions.** The moderators may include representatives of a tenant or residence association, a representative from an environmental association, or even an interested citizen with sufficient knowledge of Merton's air quality problem and policies.

We recommend that topics presented in discussion groups focus on the air quality problems of the particular area rather than on borough-wide problems.

Our results show that many residents believe they cannot contribute to improving borough-wide problems, but may be able to help improve air quality in their local community. This also emphasises the ownership of the air quality problem for each particular locality, thereby lessening the responsibility of Merton Council to solve these problems alone.

5.2.3 Improving Organisation-based Consultation

In the past, Merton Council has used forums in order to consult with organisations. Although forums allow organisations to express their opinions on air quality information, our results show that this type of public meeting lacks representation from all groups. There is a need to involve businesses as well as interested community groups and environmental organisations. A similar approach to the previously described recommendations for resident-based consultation is an effective method of allowing all groups to participate.

Most businesses and organisations already hold regular meetings to assemble members and discuss various topics of importance. **We recommend that Merton Council capitalise on this existing method of communication by requesting that organisations discuss air quality as part of their agenda.** Using this process, Merton Council should suggest current air quality topics of relevance to the organisation. In return, the organisation should discuss the topics at its meeting and present the results to Merton Council. This style of communication has already proved effective for both the Merton Cycling Campaign and the Wimbledon Civic Group. The implementation of this scheme would allow for greater representation

present the results to Merton Council. This style of communication has already proved effective for both the Merton Cycling Campaign and the Wimbledon Civic Group. The implementation of this scheme would allow for greater representation from businesses and community groups and allow them to contribute to action plans and proposals for air quality improvement.

5.3 Recommendations for Future Consideration

While developing recommendations for Merton Council, we realised that the time allotted for the completion of our project limited further development of various recommendations. Although we were unable to complete the research needed to formulate these concepts, we suggest that Merton Council investigate the following ideas in order to determine their feasibility.

There were two main issues we were unable to address when we developed recommendations for a consultation process. First, **we recommend that Merton Council research the possibility of conducting consultation training with Council officers, department directors, or other qualified personnel.** Also, Merton Council should determine whether or not they have sufficient human resources to appoint officers that specifically handle consultation processes. Second, the recommendation for localised discussion groups is a broad concept. **We recommend that Merton Council further investigate the use of local discussion groups** by holding trial discussions in possible AQMA communities. Merton Council should compare results and findings from these discussions against residential input during a meeting of the Merton Environment and Safety Forum. Also, there exists the

placing regular air quality updates in local newspapers, such as *The Independent*. This would require researching the cost and availability of advertising space in newspapers, as well as of staff time and resources needed for producing such information. Also, **we recommend that Merton Council investigate the potential for posting air quality information on the Internet.** Although this method was considered ineffective by some individuals for reaching a large number of residents in the borough, the ability to rapidly post information may benefit Merton Council. Given the steadily increasing growth of Internet users in the United Kingdom, releasing air quality information on the Internet may reach a larger number of residents in the near future. Merton Council could place air quality information on a web page within the Merton Council Environmental Services web site, which is currently under development.

During the course of our project, it became apparent that many residents, businesses, and organisations were interested in the results and outcomes of our research. Therefore, **we recommend that Merton Council place our entire project report in the Morden Library, and publicise its availability.** This will allow interested stakeholders to view our report at their leisure. Also, **we recommend that Merton Council add the list of statutory consultees as required by the National Air Quality Strategy to their existing consultation database.** This will allow other related departments in Merton Council to access information about these organisations.

All of our recommendations to Merton Council should allow the London Borough of Merton to develop an effective consultation process for air quality issues. This process can provide Merton stakeholders an opportunity to actively participate in

related departments in Merton Council to access information about these organisations.

All of our recommendations to Merton Council should allow the London Borough of Merton to develop an effective consultation process for air quality issues. This process can provide Merton stakeholders an opportunity to actively participate in the development of action plans aimed at improving air quality. Consultation has been noted as an important step leading to the development of sustainable action plans. The consultation process that we recommended will allow stakeholders to share the responsibility for improving air quality in the borough and ultimately help Merton achieve its goal of establishing a sustainable environment.

Appendix A: Glossary of Terms

AQMA	Air Quality Management Area
CFC	ChloroFlouroCarbons
CO	Carbon Monoxide
DETR	Department of the Environment, Transport and the Regions
EPA	Environmental Protection Agency
Exceedence	A period of times where the concentration of a pollutant is greater than, or equal to, the appropriate air quality standard.
LAPC	Local Air Pollution Control
LAQM	Local Air Quality Management
LPAC	London Planning Advisory Committee
MESF	Merton Environment and Safety Forum
NAQS	National Air Quality Strategy
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NSCA	National Society for Clean Air
O_3	Ozone
OWGC	Officers' Working Group on Consultation
PM_{10}	Particulate Matter
RAQC	Regional Air Quality Council
SEIPH	South East Institute of Public Health
SO_2	Sulphur Dioxide

Appendix B: NAQS Pollution Level Objectives for 2005

Pollutant	Existing NAQS Objective	Proposed NAQS Objective
	To be achieved by 2005	
SO_2	100 ppb, as 99.9th percentile of 15 minute means	By end 2004 131 ppb, as an hourly objective 46.8 ppb, as a 24 hour objective
NO_2	21 ppb annual mean 150 ppb, averaged over one hour	By end 2005 21 ppb annual mean 105 ppb, averaged over 1 hour (max. 18 exceedences)
PM_{10}	50 μg/m^3, as 99th percentile of maximum 24 hour running means	By end 2004 50 μg/m^3, as 24 hour means not to be exceeded 35 times/annum[1]

ppb = parts per billion, μg/m^3= micrograms per cubic metre
[1]Gravimetric measurements, to be achieved by the end of 2004

(Derived from the National Air Quality Strategy)

Appendix C: Interviews

Interview with Bryan Glascock, Director, Boston Air Pollution Control Commission
Wednesday, February 16, 2000 1:00 – 1:30 PM

1. How do you release information to the public?

- Maps about air pollution are included on local news, especially during high concentration levels.
- These maps can be part of the weather report.
- Public service announcements make the public aware of air quality problems and what can be done to lower pollution levels.
- Advertising campaigns help to make a connection between air quality and the causes of air quality problems
- Catchy slogans are very effective.

2. What are some major contributors to the air pollution problem and how can we reduce the contributions?

- Automobile traffic is the largest contributor.
- A database can be used to match together those interested in car sharing so the amount of traffic can be reduced.
- Also staggering business hours helps to reduce the amount of traffic at any time and the amount of pollution being produced due to traffic that isn't moving.
- Subsidising public transport or allowing employees to work at home can also reduce the amount of pollution created by individuals commuting to work.

Interview with Bob Peterson, Worcester Department of Health and Code
Thursday, February 17, 2000 2:00 – 2:35 PM

1. How do you release information to the public?

   - After a recent water test the results were mailed to residents through a mass mailing that went to every person who paid a water bill in the city of Worcester.
   - News media is also used if conditions are bad enough. The local news stations will air a story.
   - Public hearings are used to talk with interested public but not on issues that the whole city needs to be aware of.

2. Have you ever been required to release information to the public?

   - There are hearings, which deal with regulations that the city will be implementing. The hearings are required so that everybody has an opportunity to express their views on the regulations.
   - These hearing are listed in the newspapers.
   - A web site was also used because of the quickness with which it can be developed. This was the case with beach closings. They were posted on the web so the community could read about them immediately.
   - Television and newspapers were also involved. They ran stories to make the public aware of issues.

3. How have you received feedback on any of this information?

   - Phone has been the primary method. Residents call and express their views and concerns.
   - Hearings also allow for feedback when all concerned parties express their views.

Interview with Prof. Nowick
Wednesday, February 16, 2000 11:00 – 11:45 am

1. What role do you play in assuring air quality standards are met in your area?

   - Work on policy complying side for companies as a consultant.
   - Also worked for Citizens Against Asphalt representing the people's opinions coming from asphalt plants.
   - Studied environmental subjects at Cal Berkley.
   - State assigned to work on a state board for air quality.
   - Worked on all sides of the issue but primarily on business side.

2. Have you ever played a role in establishing state or local air quality standards?

   - Yes, as part of the state board.

3. How are laws or regulations established?

   - First EPA expresses a concern to Congress about the need for a change
   - Then Congress passes a legislative act to make the change.
   - EPA develops regulations, which will make the changes in the environment.
   - Regulation is listed in the Federal Register so that members of the public can consider it and provide comments.
   - Regulation is modified and posted again in the Register and public meetings are held until there are no more comments.
   - Then the regulation is completed and carried out.

4. Once a regulation is proposed how is the public made aware of the new regulations?

   - A Federal Register is produced daily, which details any new federal regulations from the EPA that may be going into effect and it asks for comments or concerns about the regulation.
   - This Register is distributed to anyone who wants it with a small fee. It is also online now.
   - Massachusetts also has a Register that is distributed every two weeks
   - Not sure if Mass Register is online.

5. Are public opinions obtained when a new regulation is obtained? If so, how?

   - The Federal Register asks for comments and the comments are sent to the EPA. Then the regulation is revised and sent out for comments again until there are no more comments.
   - On a local level when a regulation or change is being put into place a notice is put into the paper and public meetings must be held if there is interest or comments about the regulation.

6. Are the public ever surveyed by the EPA or local authorities about new regulations?

- No, rarely does the EPA go out and solicit public responses.
- Interest groups and some concerned citizens read the regulations and do a good job of expressing concerns on behalf of the population.

Interview with Laura Nelson, Denver Regional Air Quality Council
Wednesday, March 1, 2000 12:00 – 12:50 PM

1. Have you ever been involved in obtaining feedback from the community with regards to air quality proposals?

- Involved in Ozone Awareness Campaign.
- Close to standard in 1998 in Denver Metro area for ozone.
- Voluntary campaign to work with local governments.
- Contacted people through inserts in utility bills, local cable access programs, radio talk shows, newspapers and local fairs where brochures were handed out.
- Also conducted workshops where a presentation started the discussion.

2. Have you ever contacted local business to obtain their feedback?

- Worked with business communities and petroleum companies.
- They were motivated to change their practices in order to call themselves "Green Companies" because people like companies that are trying to do something.

3. Have you every conducted surveys; either through mail, online or personal?

- Not online. They are tough and it is hard to get a good response.
- Has distributed surveys through the mail.
- Also went door-to-door distributing surveys.

4. Do you have any other further suggestion about how to contact the public?

- A hotline number was set up to obtain responses to proposals and that was helpful.
- Monthly meeting to discuss issues.
- Use television to get message out.

Interview with Sue Tanton, Environment Officer
Tuesday, March 22, 2000 10:15 – 10:45 AM

1. What does you position in Merton Council entail?

- Involved in the creation of Agenda 21.
- Currently updating Agenda 21.
- Involved in organising public involvement and education.
- Helped with general public awareness.

2. You have mentioned you were involved in obtaining public feedback how did you go about doing that?

- The public was made aware of Agenda 21 through newsletters that were distributed (800 in total).
- A type of survey was conducted by approaching citizens and questioning them in Wimbledon library and in the Civic Centre.
- Information was also disseminated through newspapers.

3. Have you ever dealt with air quality issues?

- Agenda 21 has an air quality section.
- The public is aware of air quality problems and their relation to traffic issues
- Also, air quality indicators were determined from consultation with stakeholders.
- This consultation took place with local advisory groups who were interested in this issue.

4. Have you ever been involved in conducting focus groups?

- Yes, part of Agenda 21 was developed using focus groups.
- People were recruited through interest groups.
- Chamber of commerce is an interest group for businesses.
- Tenants association are interested citizens with one representative that can range from a very structured organisation to one with no structure.

5. Through interview with officials in the United States we have learned about popular methods for disseminating information, what are some popular ways in which this is done in the United Kingdom?

- One group of students a couple of years ago were very successful in doing telephone surveys.
- Newspapers and newsletters such as the *Merton Messenger* are the most commonly used methods.
- A web page is not a good idea yet. There are not many people who have access to the Internet in their homes.
- Also television is not localised enough to have programs specific to the London Borough of Merton.

Interview with Steve Cardis, Planning and Projects
Friday, March 25, 2000 2:00 – 2:30 PM

1. We will be conducting in person surveys. Do you have any suggestions on how to achieve a high response rate?

- Focus on interest groups.
- Mail surveys with follow up telephone calls have worked in the past.
- Talk to schools and students.

2. How can we successfully recruit people for our focus groups?

- Look at the *Best Practice Guide to Focus Groups.*
- Provide incentives and reasons why they should come.
- Talk to residence associations or interest groups like the Merton Cycling Campaign.

3. How can we ensure that the focus groups are run effectively?

- Video or at least tape record the sessions
- Analyse the data using a database, such as excel

Interview with Mike Barrett, Manager Environmental Services
Friday, March 25, 2000 10:30 – 11:15 AM

1. What does you position in the Merton Council entail?

    - Manages control section housing and pollution.
    - Also deals with complaints and licensing issues.

2. Are there any proposed action plans to improve air quality and are there any ideas, developments other information you want to see in our survey?

    - Reducing parking spaces on roads;
    - Better public transport;
    - Shop locally schemes;
    - Better cycling routes;
    - Walking buses;
    - Better lighting.

3. What exactly do you want us to accomplish in our project?

    - Find out how to obtain feedback from the community.
    - Determine what the community is looking for Merton Council to do.
    - Examine people's willingness to change behaviours.
    - Find out what would make people change their behaviour.

4. What areas are you looking for us to focus on in this project?

    - Bushey Rd, Kingston Rd, Durnsford Rd., Haydens Rd, and London Rd. in Mitcham

5. Through interview with officials in the United States we have learned about popular methods for disseminating information, what are some popular ways in which it is done in the United Kingdom?

    - *Merton Messenger* or a local newspaper like *The Guardian*.
    - Could use public displays or travelling public displays.

Appendix D: Residential In-person Survey

Location_____ **Date**_____ **Surveyed By:** _____

We are representatives from Merton Council conducting a study on particular air quality issues in Merton. Part of our study involves researching the current level of interaction between the community and the Council. We would appreciate you taking time to complete our survey. It will only take about five minutes of your time. The information you provide us with is extremely valuable and will help improve the quality of life in the borough. We ensure you that all answers are confidential and will be used for purposes of our research only.

First we are going to ask you a few methods on your methods of travel.

1. **IF NOT AT HOUSE** - Do you live in Merton?

_____ Yes
_____ No

2. What is your primary method of travel?

____ Car/Other Vehicle

2a. What distance do you travel? _____

2b. Do you usually drive alone or with someone else?

_____ Alone
_____ Car Share

2c. Is public transportation a viable option for you to travel?

_____ Yes (Please Explain why you don't use it and what would encourage use)
_____
_____

_____ No (Please Explain why it is not and what would encourage use)
_____
_____

_____ Public Transportation

2d. What kind of Public Transportation do you use?

_____ Tube
_____ Bus
_____ Above ground trains
_____ Combination of methods

2e. Why do you use Public Transportation?

_____
_____

_____ Walk
_____ Cycle

Awareness/concerns

Now we will ask you a few questions regarding your opinions on air pollution.

3. In general, how concerned are you with air pollution?

Not at all Somewhat Concerned Very concerned

4. Rate your perception of the air quality in the borough of Merton.

Poor Fair Good Very good

5. Do you think this area has worse air pollution than other areas in the borough?

____ Yes
____ No

6. What do you feel is the major source of air pollution in the borough of Merton?

____ Industries
____ Cars
____ Heavy goods vehicles (tractors, buses, taxis, etc)
____ Sources from outside the borough
____ Other _____

7. How willing are you to change your daily habits to improve air quality?

Not at all Somewhat Willing Very willing

7a. What are **you** prepared to do to improve air quality? (*Do not ask if answer is "Not at all"*)

_____

_____

8. Do you think the (fill in from list below) should be responsible for improving air quality?

National Government (DETR)	____ Yes	___ No
Local Government (Merton Council)	____ Yes	___ No
London Mayor/ Greater London Authority	____ Yes	___ No
Environmental groups	____ Yes	___ No
Individual citizens	____ Yes	___ No

9. For each of the following plans to improve air quality, how open would you be to its implementation?

Reduced parking spots on roads	not at all	somewhat	open	very open
Improved public transportation	not at all	somewhat	open	very open
Reduce traffic	not at all	somewhat	open	very open
Better walking/cycling routes	not at all	somewhat	open	very open
Shop locally schemes	not at all	somewhat	open	very open
More frequent emissions testing	not at all	somewhat	open	very open

10. How would you make your views on air quality issues known to the council?

____ Phone
____ Letter
____ Public meeting or forum
____ Email
____ Other explain_____

There are only a few questions left; thank you again for you patience.

11. Do you have any further suggestions about how the Council can help improve air quality in the borough?

_____
_____
_____
_____

These last three questions are optional, however, answering them will be very useful to Merton Council for statistical purposes.

12. Gender: ___ Male ___ Female

13. In what age range are you?

____ <15 ____ 15-24 _____ 25-34 _____ 35-44 _____ 45-54 _____ 55-64 ____65+

14. What is your ethnic background?

____ White ____ Irish _____ Black African _____Black Caribbean _____Black Other _____ Indian
_____ Pakistani ____ Bangladeshi _____Tamil _____Chinese _____ Asian Other _____Other

That completes the survey. Next week we will be conducting follow-up discussion groups. Would you be interested in attending?

_____ Yes

Please give us your name and phone number so we can contact you for the date and time of the discussion group

_____
_____

_____ No

Thank you for your time. We appreciate your willingness to complete this survey. The information you have provided is extremely important to Merton Council. Again, I reassure you that all responses are confidential.

Appendix E: Business In-person Survey

Location_____ **Date**_____ **Surveyed By:** _____

We are representatives from Merton Council conducting a study on particular air quality issues in Merton. Part of our study involves researching the current level of interaction between the community and the Council. We would appreciate you taking time to complete our survey. It will only take about five minutes of your time. The information you provide us with is extremely valuable and will help improve the quality of life in the borough. We ensure you that all answers are confidential and will be used for purposes of our research only.

First we are going to ask you a few methods on your methods of travel.

1. Do you live in Merton?

_____ Yes
_____ No

2. How do you usually commute to work?

_____ Car/Other Vehicle

2a. What distance do you travel? _____

2b. Do you usually drive alone or with someone else?

_____ Alone

_____ Car share

2c. Is public transportation a viable option for you to commute?
_____ Yes (Please explain why you don't use it and what would encourage use)
_____
_____

_____ No (Please Explain why it is not and what would encourage use)
_____
_____

_____ Public transportation

2d. What kind of public transportation do you use?

_____ Tube
_____ Bus
_____ Above ground trains
_____ Combination of methods

2e. Why do you use Public Transportation?
_____
_____

_____ Walk

_____ Cycle

Awareness/concerns

Now we will ask you a few questions regarding your opinions on air pollution.

3. In general, how concerned are you with air pollution?

Not at all Somewhat Concerned Very concerned

4. Rate your perception of the air quality in the borough of Merton.

Poor Fair Good Very good

5. Do you think this area has worse air pollution than other areas in the borough?

____ Yes
____ No

6. What do you feel is the major source of air pollution in the borough of Merton?

____ Industries
____ Cars
____ Heavy goods vehicles (tractors, buses, taxis, etc)
____ Sources from outside the borough
____ Other _____

7. How willing are you to change your daily habits to improve air quality?

Not at all Somewhat Willing Very willing

7a. What are **you** prepared to do to improve air quality? (*Do not ask if answer is "Not at all"*)

_____

_____

8. Do you think the (fill in from list below) should be responsible for improving air quality?

National Government (DETR)	____ Yes	___ No
Local Government (Merton Council)	____ Yes	___ No
London Mayor/ Greater London Authority	____ Yes	___ No
Environmental groups	____ Yes	___ No
Individual citizens	____ Yes	___ No

9. For each of the following plans to improve air quality, how open would you be to its implementation?

Reduced parking spots on roads	not at all	somewhat	open	very open
Improved public transport	not at all	somewhat	open	very open
Reduce traffic	not at all	somewhat	open	very open
Better walking/cycling routes	not at all	somewhat	open	very open
Shop locally schemes	not at all	somewhat	open	very open
More frequent emissions testing	not at all	somewhat	open	very open

10. How would you make your views on air quality issues known to the council?

____ Phone
____ Letter
____ Public meeting or forum
____ Email
____ Other (explain)_____

There are only a few questions left; thank you again for you patience.

11. Do you have any further suggestions about how the Council can help improve air quality in the borough?

_____
_____
_____
_____
_____

These last three questions are optional; however, answering them will be very useful to Merton Council for statistical purposes.

12. Gender: ___ Male ___ Female

13. In what age range are you?

___ <15 ____ 15-24 _____ 25-34 _____ 35-44 _____ 45-54 _____ 55-64 ____65+

14. What is your ethnic background?

____ White ____ Irish _____ Black African _____Black Caribbean _____Black Other _____ Indian
_____ Pakistani ____ Bangladeshi _____Tamil _____Chinese _____ Asian Other _____Other

That completes the survey. Next week we will be conducting follow-up discussion groups. Would you be interested in attending?

_____ Yes

Please give us your name and phone number so we can contact you for the date and time of the discussion group

_____
_____

_____ No

Thank you for your time. We appreciate your willingness to complete this survey. The information you have provided is extremely important to Merton Council. Again, I reassure you that all responses are confidential.

Appendix F: Cover Letter for Mail-in Surveys

PLANNING AND PUBLIC PROTECTION DIVISION
Head of Planning and Public Protection – Steve Clark

Date: 27 March, 2000
My ref: ES/PP/SM/WPI
Please ask for: Samantha Hogan / Keith Maver / Ralph Thompson / Mike Young

WPI:
AIR QUALITY SURVEY
MARCH 2000

Dear Consultee:

We are undergraduate researchers from Worcester Polytechnic Institute (USA) conducting a survey on behalf of Merton Council regarding air quality in the borough. Enclosed is a survey for you to complete at your own convenience, as well as a pre-paid envelope with which to reply.

This survey addresses topics regarding your methods of travel and your opinions regarding air quality in general and specifically within the London Borough of Merton. You will also be asked if you are interested in attending a discussion group we will be conducting in the near future.

Your completion of this survey is extremely important to Merton Council, as they will be able to incorporate your views in plans to improve local air quality. Furthermore, improving local air quality will lead to an improvement of the quality of life for you and others in the borough.

All responses to this survey will be completely confidential; they will be used for research purposes only.

We would appreciate you taking time to complete this brief survey fully and honestly. Please return the completed survey in the enclosed envelope by 14 April 2000. If you have any questions or comments, please contact us on 0208 545 3063 or email at mertonairquality@hotmail.com.

Thank you,

Samantha Hogan
Keith Maver
Ralph Thompson
Mike Young

Appendix G: Residential Mail Survey

This first set of questions will ask you about your methods of travel.

1. What is your primary method of travel?

- ❑ Car/Other vehicle
- ❑ Public transportation
- ❑ Walk
- ❑ Cycle

2. If your primary method of travel is a car/other privately owned vehicle, do you usually drive alone or with someone else? *(If not, leave answer blank)*

- ❑ Alone
- ❑ Car share

3. If you usually travel by car, is public transportation a viable option for you to travel? *(If not, leave answer blank)*

- ❑ Yes
- ❑ No

If answer is yes, please explain why you do not use it and what would encourage its use. If answer is no, please explain why public transportation is not a viable option for you to travel and what would encourage you to use it.

4. If you usually use public transportation for travelling, what kind of public transportation do you usually use? *(Please leave blank if you do not usually use public transportation for travel)*

- ❑ Tube
- ❑ Bus
- ❑ Above ground trains
- ❑ A combination of the above methods

Why do you use public transportation rather than other methods of travel?

_____

_____

_____

_____

_____

_____

The following set of questions will ask about your views and opinions about air quality issues.

5. In general, how concerned are you with air pollution? *(Please circle one choice).*

Not at all Somewhat Concerned Very concerned

6. Rate your perception of the air quality in the borough of Merton. *(Please circle one choice).*

Poor Fair Good Very good

7. Do you think the area in which you live has worse air pollution than other areas in the borough?

- ❑ Yes
- ❑ No

(Please tick one choice)

- ❑ Industries
- ❑ Cars
- ❑ Heavy goods vehicles
- ❑ Sources from outside the borough
- ❑ Other

_____

9. How willing are you to change your daily habits to improve air quality? *(Please circle one choice).*

Not at all Somewhat Willing Very willing

If you are at all willing to change your daily habits to improve air quality, what are you prepared to do?

_____

_____

_____

_____

_____

10. Please tick each of the following groups that you feel should be responsible for improving air quality.

- ❑ National Government
- ❑ Local Government (Merton Council)
- ❑ London Mayor/Greater London Authority
- ❑ Environment groups
- ❑ Individual citizens

11. For each of the following plans to improve air quality, how open would you be to

11. For each of the following plans to improve air quality, how open would you be to its implementation? *(Please circle one answer for each plan)*

Reduce parking spots on roads	not open	somewhat open	open	very open
Improved public transportation	not open	somewhat open	open	very open
Traffic reduction	not open	somewhat open	open	very open
Better walking/cycle routes	not open	somewhat open	open	very open
Shop locally schemes	not open	somewhat open	open	very open
More emissions testing	not open	somewhat open	open	very open

12. How would you make your views on air quality issues known to the council?

- ❑ Phone
- ❑ Letter
- ❑ Public meeting or forum
- ❑ Email
- ❑ Other (please explain)_____

_____

13. Do you have any further suggestions about how the council can help improve air quality in the borough?

_____

_____

_____

_____

_____

The following three questions are optional, however, this information will be very valuable to Merton Council for statistical purposes.

14. What is your gender?

- ❑ Male
- ❑ Female

15. Please tick the range in which your age fits.

- ❑ <15
- ❑ 15-24
- ❑ 25-34
- ❑ 35-44
- ❑ 45-54
- ❑ 55-64
- ❑ 65+

16. What is your ethnic background? (*please tick one*)

- ❑ White
- ❑ Irish
- ❑ Black African
- ❑ Black Caribbean
- ❑ Black Other
- ❑ Indian
- ❑ Pakistani
- ❑ Bangladeshi
- ❑ Tamil
- ❑ Chinese
- ❑ Asian Other
- ❑ Other

That completes the survey. In one week we will be conducting follow-up discussion groups.

If you would be interested in attending one of these discussion groups, please write down your name, phone number and street address (or e-mail address) so we can contact you with more details about the discussion groups.

Name _____

Phone number _____

Home address _____
_____
_____
_____

e-mail address _____

Thank you for your time. We appreciate your willingness to complete this survey. The information you have provided is extremely important to the Merton Council. Again, we reassure you that all responses are confidential.

Appendix H: Business Mail Survey

This first set of questions will ask you about your methods of travel.

1. Do you live in Merton?

- ❑ Yes

  What road do you live on (for statistical purposes)?

  _____

- ❑ No

2. How do you usually commute to work?

- ❑ Car/Other vehicle
- ❑ Public transportation
- ❑ Walk
- ❑ Cycle

3. If you usually commute by car/other privately owned vehicle, do you usually drive alone or with someone else? *(If not, leave answer blank).*

- ❑ Alone
- ❑ Car share

What is the distance of your commute?

_____

4. If you usually commute by car, is public transportation a viable option for you to commute? *(If you do not commute by car, leave blank)*

- ❑ Yes
- ❑ No

If answer is yes, please explain why you do not use it and what would encourage its use. If answer is no, please explain why public transportation is not a viable option for you to travel and what would encourage you to use it.

_____

_____

_____

_____

_____

5. If you usually use public transportation to commute, what kind of public transportation do you usually use? *(Please leave blank if you do not usually use public transportation for travel)*

- ❑ Tube
- ❑ Bus
- ❑ Above ground trains
- ❑ A combination of the above methods

Why do you use public transportation rather than other methods to commute?

_____

_____

_____

_____

_____

_____

The following set of questions will ask about your views and opinions about air quality issues.

6. In general, how concerned are you with air pollution? *(Please circle one choice).*

Not at all Somewhat Concerned Very concerned

7. Rate your perception of the air quality in the borough of Merton. *(Please circle one choice).*

Poor Fair Good Very good

8. Do you think the area in which you work has worse air pollution than other areas in the borough?

- ❑ Yes
- ❑ No

9. What do you feel is the major source of air pollution in the borough of Merton? *(Please tick one choice)*

- ❑ Industries
- ❑ Cars
- ❑ Heavy goods vehicles
- ❑ Sources from outside the borough
- ❑ Other

_____

10. How willing are you to change your daily habits to improve air quality? *(Please circle one choice).*

Not at all Somewhat Willing Very willing

If you are at all willing to change your daily habits to improve air quality, what are you prepared to do?

_____

_____

_____

_____

_____

11. Please tick each of the following groups that you feel should be responsible for improving air quality.

- ❑ National Government
- ❑ Local Government (Merton Council)
- ❑ London Mayor/Greater London Authority
- ❑ Environment groups
- ❑ Individual citizens

12. For each of the following plans to improve air quality, how open would you be to its implementation? (*Please circle one answer for each plan*)

Reduce parking spots on roads	not open	somewhat open	open	very open
Improved public transportation	not open	somewhat open	open	very open
Traffic reduction	not open	somewhat open	open	very open
Better walking/cycle routes	not open	somewhat open	open	very open
Shop locally schemes	not open	somewhat open	open	very open
More emissions testing	not open	somewhat open	open	very open

13. How would you make your views on air quality issues known to the council? (*please tick one*)

- ❑ Phone
- ❑ Letter
- ❑ Public meeting or forum
- ❑ Email
- ❑ Other (please explain)_____

_____

14. Do you have any further suggestions about how the Council can help improve air quality in the borough?

_____

_____

_____

_____

_____

The following three questions are optional, however, this information will be very valuable to the Merton Council for statistical purposes.

15. What is your gender?

- ❑ Male
- ❑ Female

16. Please tick the range in which your age fits.

- ❑ <15
- ❑ 15-24
- ❑ 25-34
- ❑ 35-44
- ❑ 45-54
- ❑ 55-64
- ❑ 65+

17. What is your ethnic background? (*please tick one*)

- ❑ White
- ❑ Irish
- ❑ Black African
- ❑ Black Caribbean
- ❑ Black Other
- ❑ Indian
- ❑ Pakistani
- ❑ Bangladeshi
- ❑ Tamil
- ❑ Chinese
- ❑ Asian Other
- ❑ Other

That completes the survey. Next week we will be conducting follow-up discussion groups.

If you would be interested in attending one of these discussion groups, please write down your name, phone number and street address (or email address).

Name _____
Phone number _____

Home address _____
_____
_____
_____

e-mail address _____

Thank you for your time. We appreciate your willingness to complete this survey. The information you have provided is extremely important to Merton Council. Again, we reassure you that all responses are confidential.

Appendix I: Global Electronic Mail Survey

Dear Employee:

We are undergraduate researchers from Worcester Polytechnic Institute (USA) conducting a survey on behalf of Merton Council regarding air quality in the borough. Enclosed is a survey for you to complete at your own convenience.

This survey addresses topics regarding your methods of travel and your opinions regarding air quality in general and specifically within the London Borough of Merton. You will also be asked if you are willing to attend a discussion group that we are conducting in the near future.

Your completion of this survey is extremely important to Merton Council, as they will be able to incorporate your views in plans to improve local air quality. Furthermore, improving local air quality will lead to an improvement in the quality of life for you and others in the borough.

All responses to this survey will be completely confidential; they will be used for research purposes only.

We would appreciate you taking time to complete this brief survey fully and honestly. Please print this survey out and return it to our desk on the 11th floor in the Planning Section before 8 April 2000. We will provide a box for you to drop it in at any time. If you have any questions or comments, please contact us at extension 3063 or email us at mertonairquality@hotmail.com (only if you are able to email outside of Merton Council).

Thank you,

Samantha Hogan
Keith Maver
Ralph Thompson
Mike Young

AIR QUALITY SURVEY: PLEASE RETURN TO WPI STUDENTS, 11th FLOOR

This first set of questions will ask about your methods of travel.

1. Do you live in Merton?

   Please answer "yes" or "no".

   Answer:

   If "yes", what road do you live on (for statistical purposes)?

   Answer:

2. What is your primary method of commuting to work?

   Answer "1" if you commute using a *car or another vehicle*.
   Answer "2" if you commute using any form of *public transportation*.
   Answer "3" if you commute by *walking*.
   Answer "4" if you commute by *cycling*.

   Answer:

3. If you usually commute by car/other privately owned vehicle, do you usually drive alone or with someone else? If not, leave answer blank.

   Answer "1" if you usually *drive alone*.
   Answer "2" if you usually *car share*.

   Answer:

   What is the distance of your commute?

   Answer:

Skip question 4 if you do not usually commute by car/other privately owned vehicle

4. Is public transportation a viable option for you to commute?

   Please answer "yes" or "no".

   Answer:

   If your answer is yes, please explain why you do not use it and what would encourage its use. If answer is no, please explain why public transportation is not a viable option for you to travel and what would encourage you to use it.

   Answer:

5. If you usually use public transportation to commute, what kind of public transportation do you usually use? *(Please leave blank if you do not usually use public transportation for travel)*

Answer "1" if you usually use the *tube/underground.*
Answer "2" if you usually use *buses.*
Answer "3" if you usually use *above ground trains.*
Answer "4" if you use a *combination of the above methods.*

Answer:

Why do you use public transportation rather than other methods to commute?

Answer:

The following set of questions will ask about your views and opinions about air quality issues.

6. In general, how concerned are you with air pollution?

Answer "1" if you are *not at all concerned* with air pollution.
Answer "2" if you are *somewhat concerned* with air pollution.
Answer "3" if you are *concerned* with air pollution.
Answer "4" if you are *very concerned* with air pollution.

Answer:

7. Rate your perception of the air quality in the borough of Merton.

Answer "1" if you think the air quality in Merton is *poor.*
Answer "2" if you think the air quality in Merton is *fair.*
Answer "3" if you think the air quality in Merton is *good.*
Answer "4" if you think the air quality in Merton is *very good.*

Answer:

8. How willing are you to change your daily habits to improve air quality?

Answer "1" if you are *not at all willing* to change your habits to improve air quality.
Answer "2" if you are *somewhat willing* to change your habits to improve air quality.
Answer "3" if you are *willing* to change your habits to improve air quality.
Answer "4" if you are *very willing* to change your habits to improve air quality.

Answer:

If you are at all willing to change your daily habits to improve air quality, what are you prepared to do?

Answer:

9. Which of the following groups should be responsible for improving air quality?

Answer "yes" or "no" for each choice.

National Government?	**Answer:**
Local Government (Merton Council)?	**Answer:**
London Mayor/Greater London Authority?	**Answer:**
Environmental groups (such as Friends of the Earth)?	**Answer:**
Individual citizens?	**Answer:**

10. For each of the following plans to improve air quality, how open would you be to its implementation?

For each choice, answer
"1" if you are *not open* to seeing this plan implemented.
"2" if you are *somewhat open* to seeing this plan implemented.
"3" if you are *open* to seeing this plan implemented.
"4" if you are *very open* to seeing this plan implemented.

Reduce parking spaces on roads?	**Answer:**
Improved public transport?	**Answer:**
Reduced traffic?	**Answer:**
Better walking/cycle routes?	**Answer:**
Shop locally schemes?	**Answer:**
More frequent emissions testing?	**Answer:**
Increased parking charges?	**Answer:**
Car sharing organised by LBM?	**Answer:**

11. How would you make your views on air quality issues known to staff?

Answer "1" if you would *phone*.
Answer "2" if you would *write* a letter.
Answer "3" if you would attend a *public meeting or forum.*
Answer "4" if you would write an *email*.
Answer "5" if you would use *another method* of communication.

Answer:

If your answer was "5", what method of communication would you use to contact the council?

Answer:

12. Do you have any further suggestions about how the council can help improve air quality in the borough?

Answer:

The following four questions are optional, however, this information will be very valuable to the Merton Council for statistical purposes.

13. What is your gender?

Answer:

14. What department do you work in?

Answer:

15. Please select your appropriate age range.

Answer "2" if you are *between the ages of 15 and 24.*
Answer "3" if you are *between the ages of 24 and 34.*
Answer "4" if you are *between the ages of 35 and 44.*
Answer "5" if you are *between the ages of 45 and 54.*
Answer "6" if you are between the ages of 55 and 64.
Answer "7" if you are over 65 years of age.

Answer:

16. What is your ethnic background?

Answer "1" if you are white or of English descent.
Answer "2" if you are Irish.
Answer "3" if you are Black African.
Answer "4" if you are Black Caribbean.
Answer "5" if you are Black other than African or Caribbean.
Answer "6" if you are Indian.
Answer "7" if you are Pakistani.
Answer "8" if you are Bangladeshi.
Answer "9" if you are Tamil.
Answer "10" if you are Chinese.
Answer "11" if you are Asian other than Chinese.
Answer "12" if you are of a background that has not been mentioned.

Answer:

That completes the survey. Next week we will be conducting follow-up discussion groups.

If you would be interested in attending one of these discussion groups, please write down your name, phone number and street address (or email address).

Name _____
Phone number _____

Home address _____
_____
_____
_____

e-mail address _____

Thank you for your time. We appreciate your willingness to complete this survey. The information you have provided is extremely important to Merton Council. Again, we reassure you that all responses are confidential.

Appendix J: Survey Results from AQMA Respondents for Merton Council

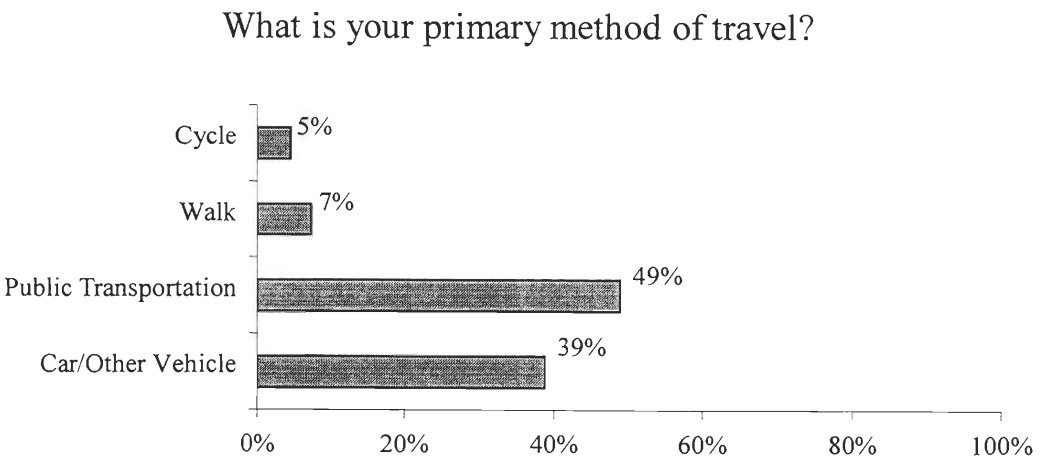

Figure A.1 - AQMA Respondents' Primary Method of Travel

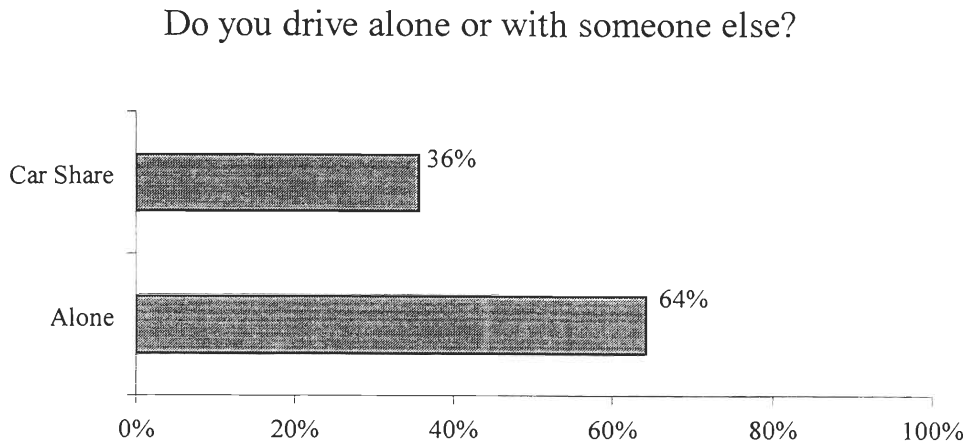

Figure A.2 - AQMA Respondents' Amount of Car Sharing

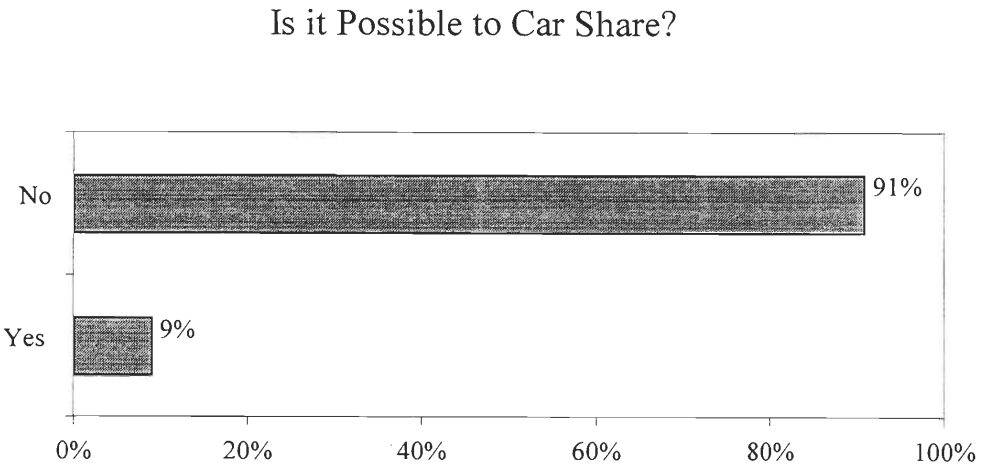

Figure A.3 - AQMA Respondents' Possibility of Car Sharing

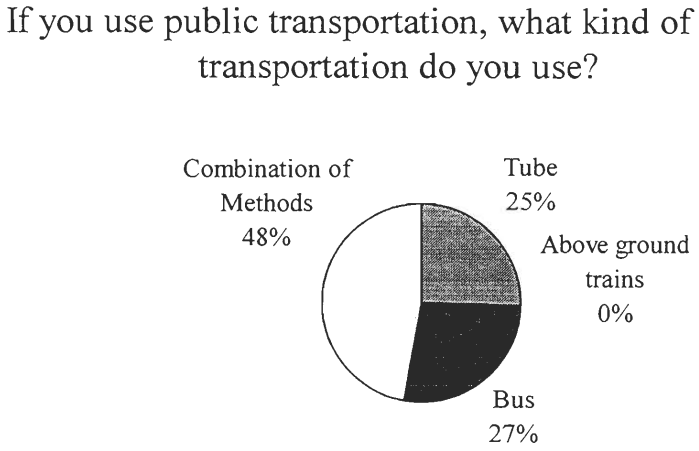

Figure A.4 - AQMA Respondents' Types of Public Transport

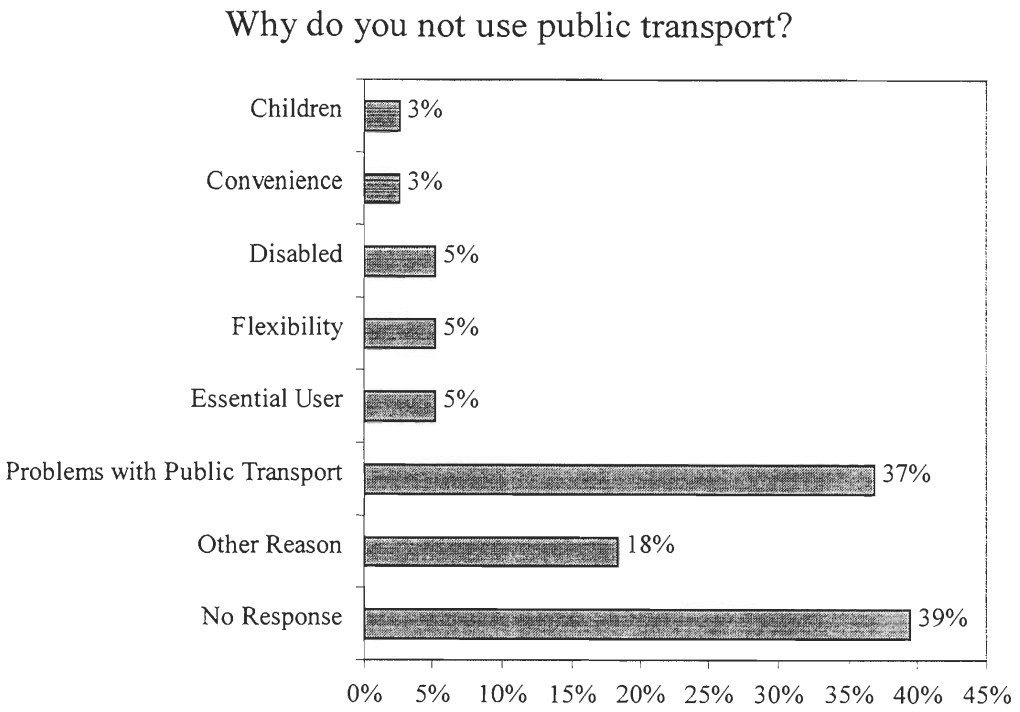

Figure A.5 - AQMA Respondents' Reasons for not Using Public Transport

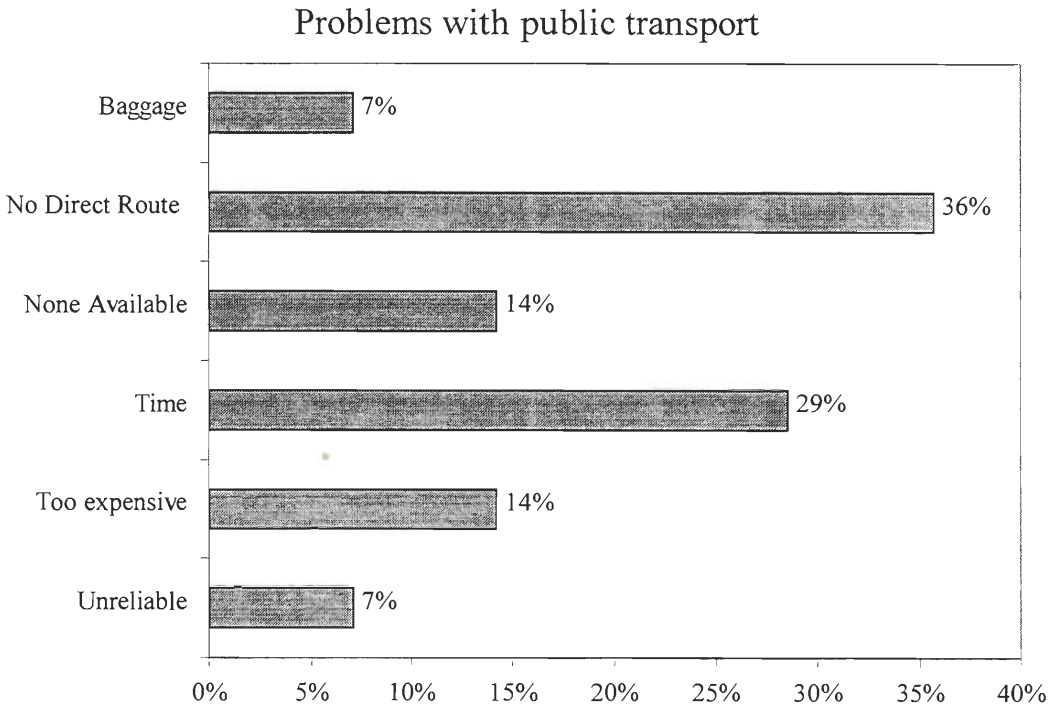

Figure A.6 AQMA Respondents' Problems With Public Transport

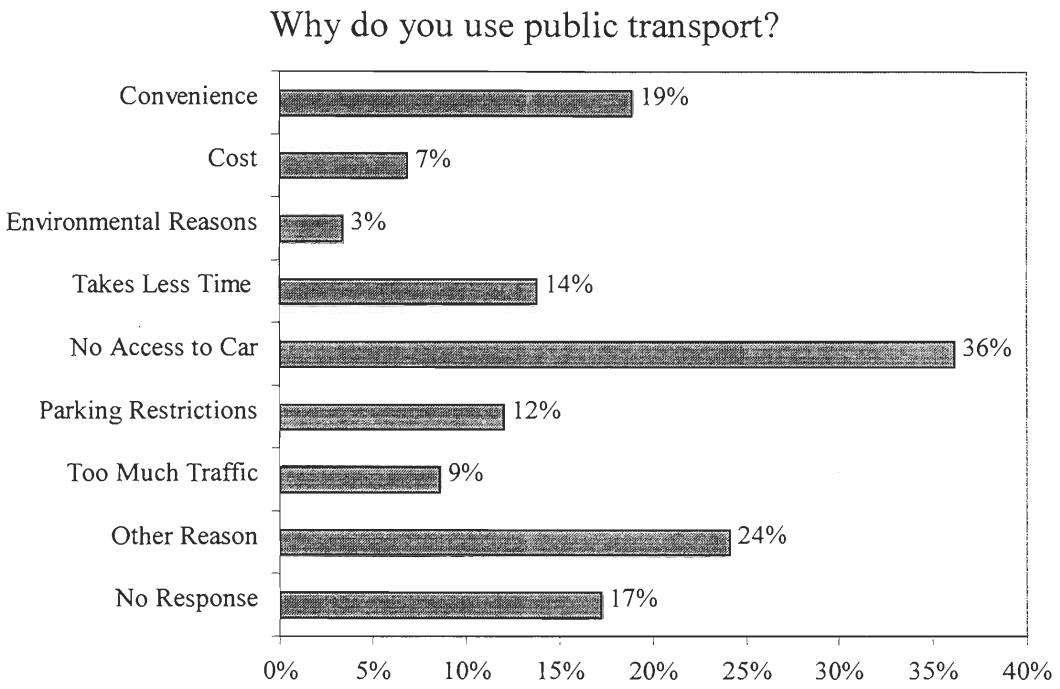

Figure A.7 - AQMA Respondents' Reasons for Using Public Transport

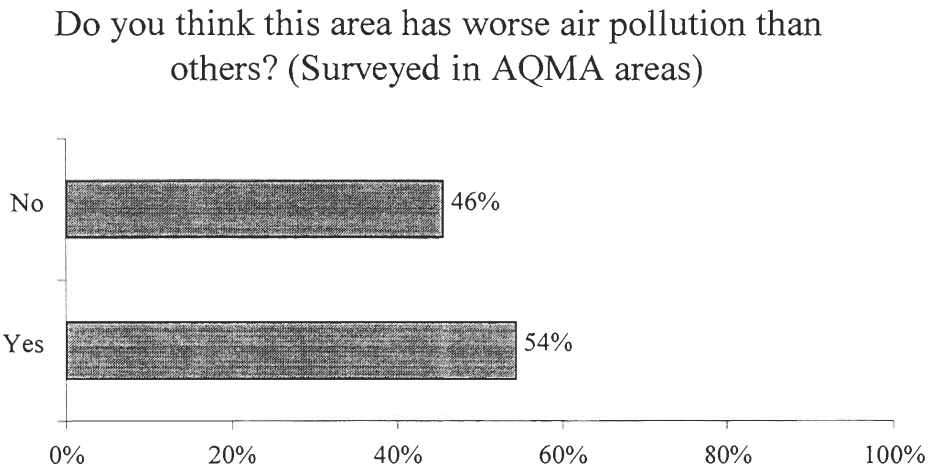

Figure A.8 - AQMA Respondents' Views on Air Pollution vs. the Rest of the Borough

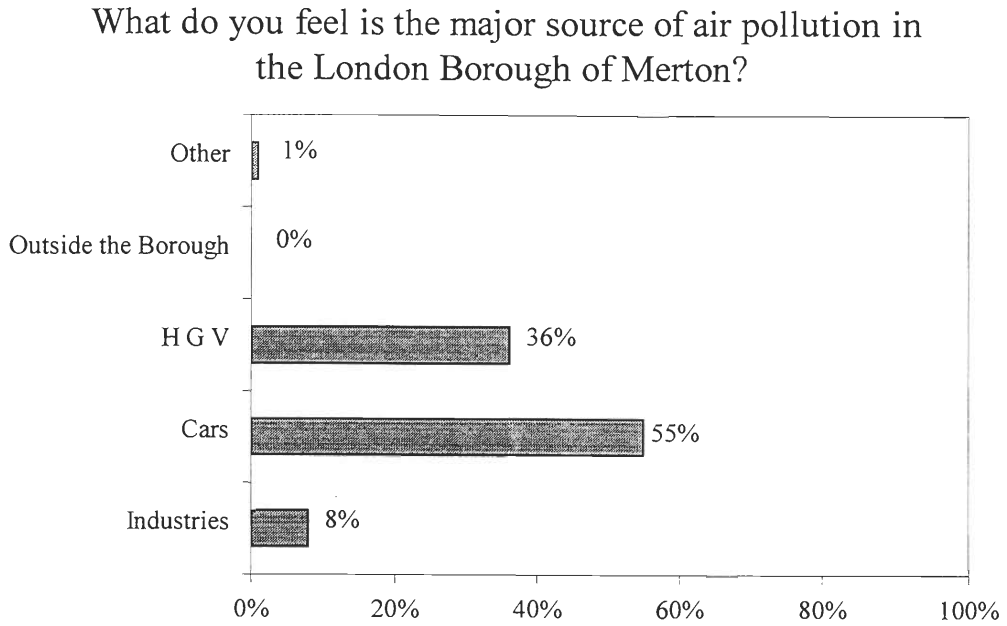

Figure A.9 - AQMA Respondents' Views About the Major Source of Air Pollution in the Borough

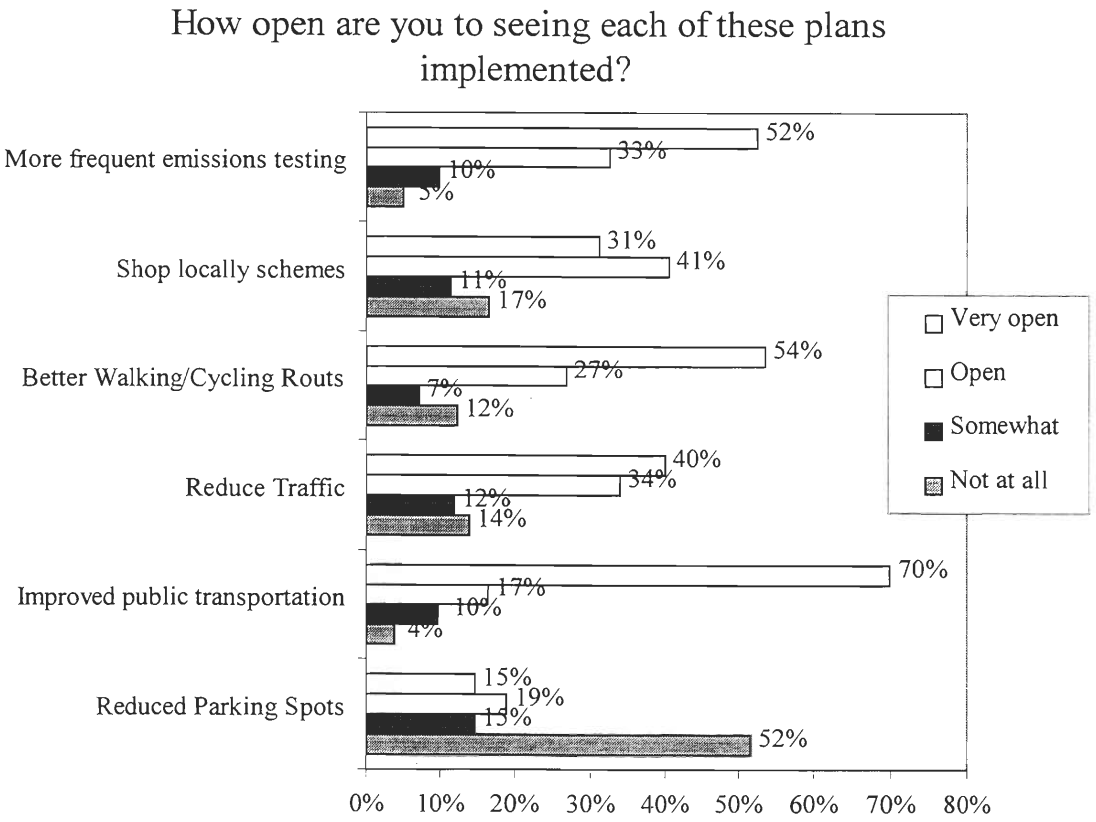

Figure A.10 - AQMA Respondents' Openness to Plans

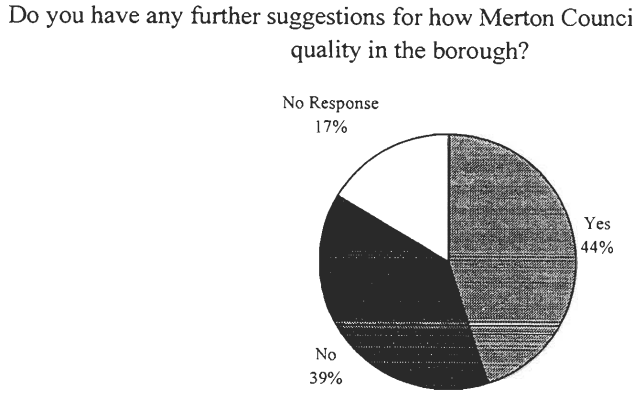

Figure A.11 - AQMA Respondents' with Suggestions for Merton Council

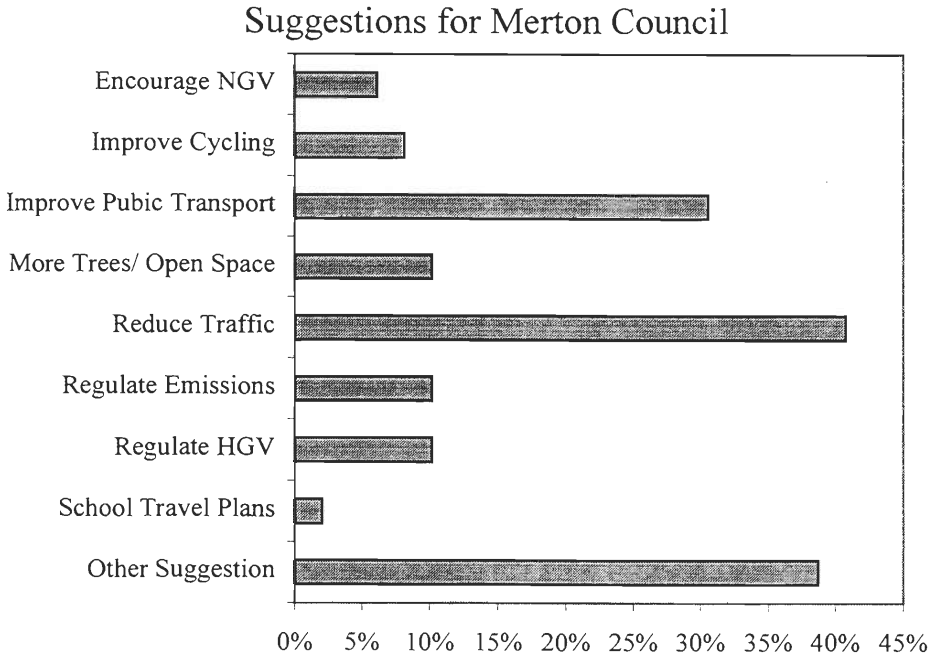

Figure A.12 - AQMA Respondents' Suggestions for Merton Council

Appendix K: Survey Results from Merton Council Respondents

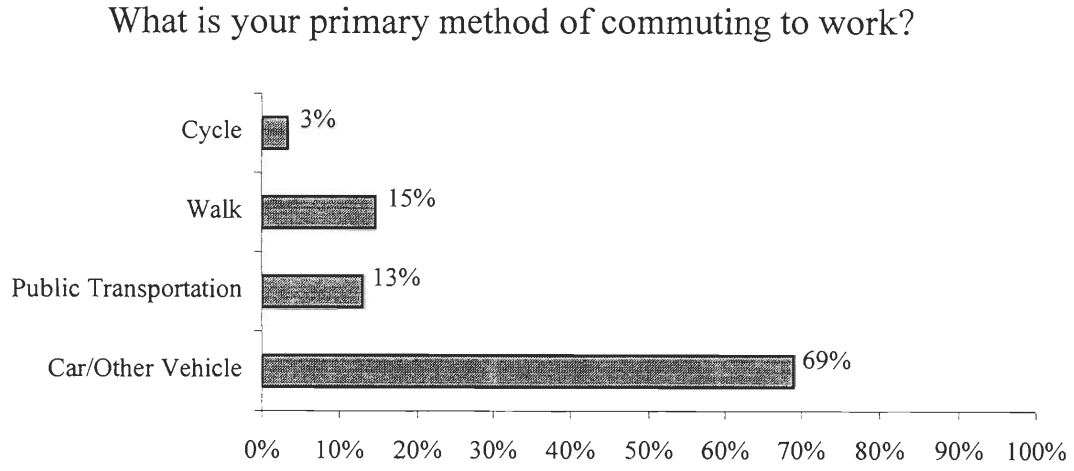

Figure A.12 - Merton Council Respondents' Primary Method of Travel

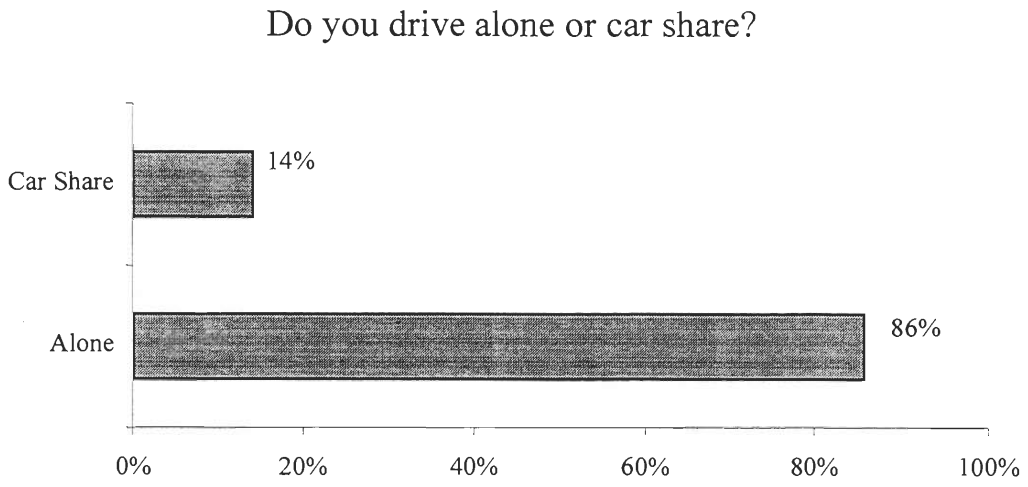

Figure A.13 - Merton Council Respondents' Amount of Car Sharing

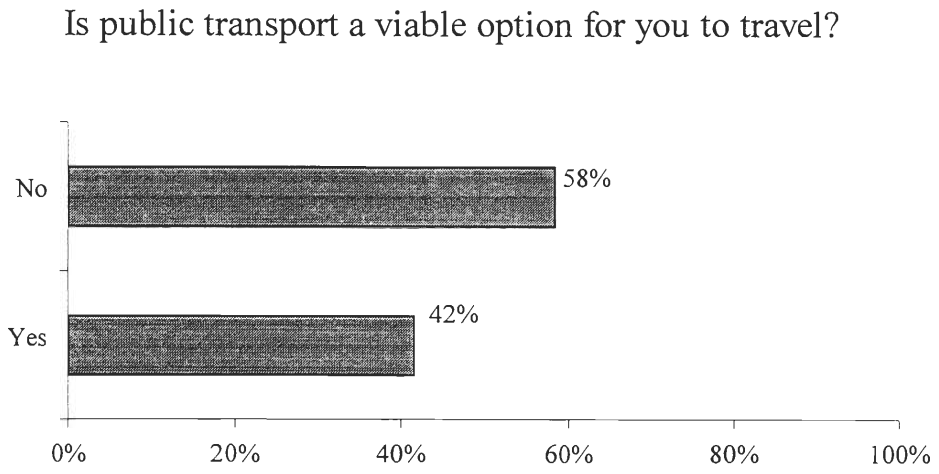

Figure A.14 - Merton Council Respondents' Possible Use of Public Transport

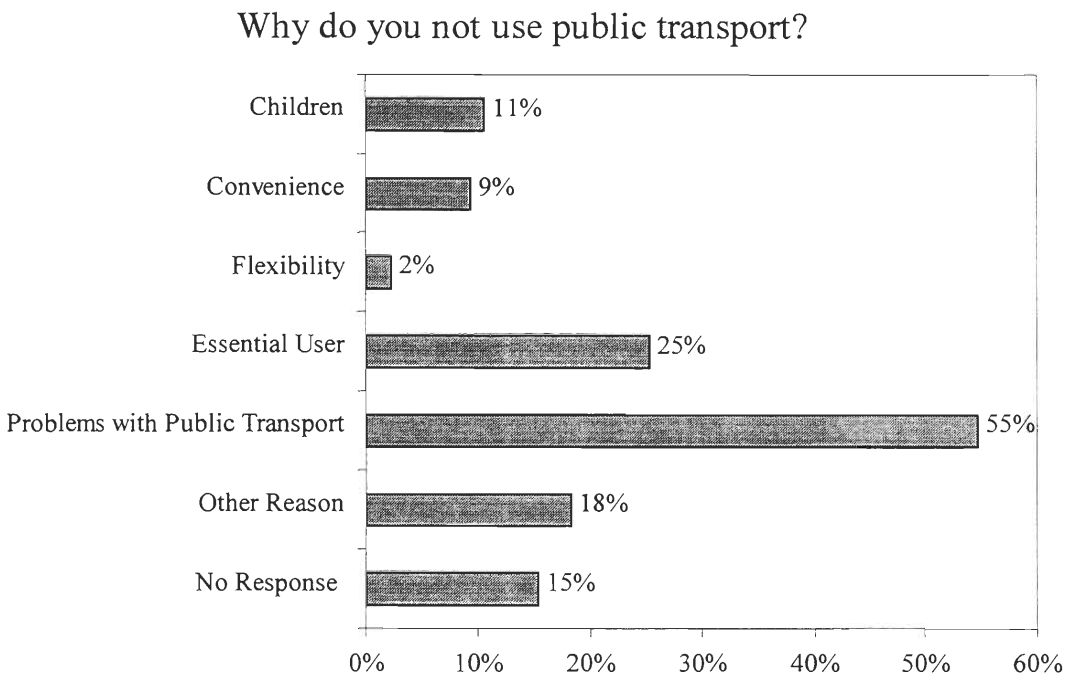

Figure A.15 - Merton Council Respondents' Reasons for Not Using Public Transport

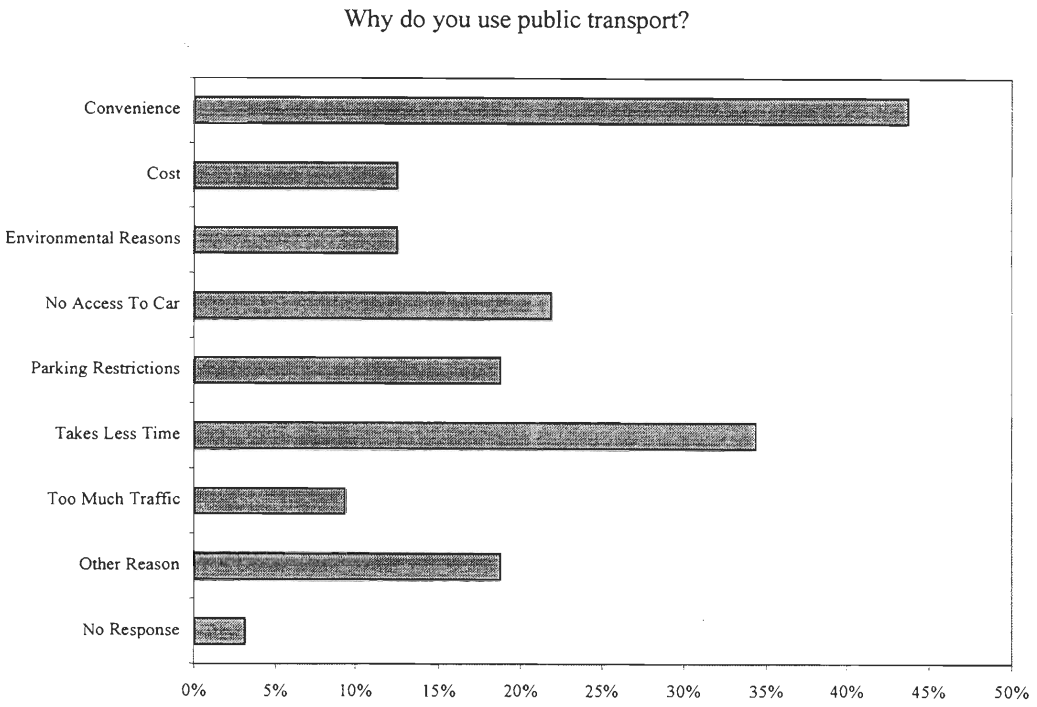

Figure A16. - Merton Council Employees' Reasons for Using Public Transport

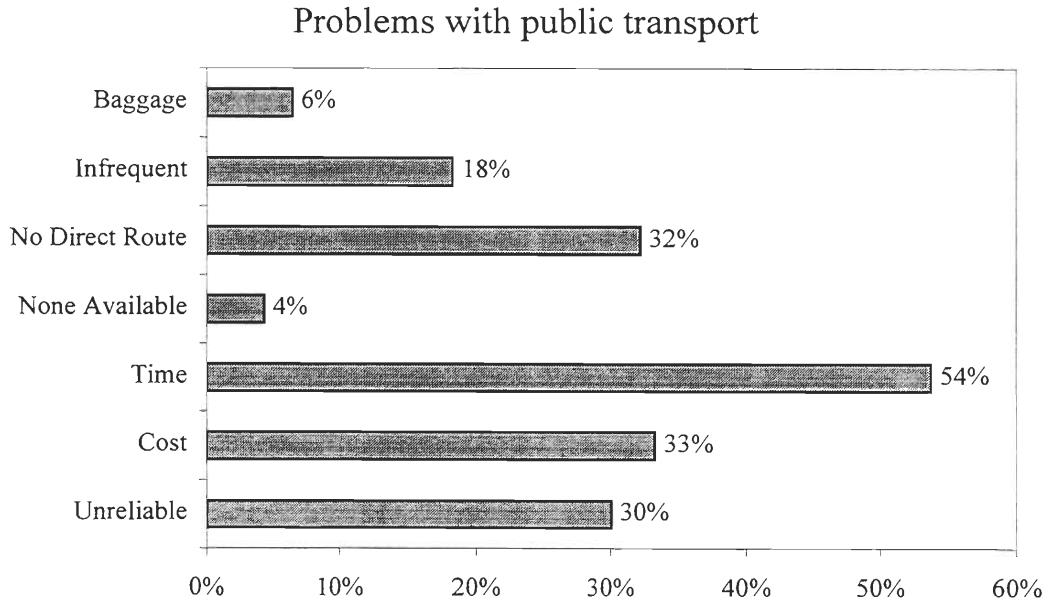

Figure A.17 - Merton Council Respondents' Problems with Public Transport

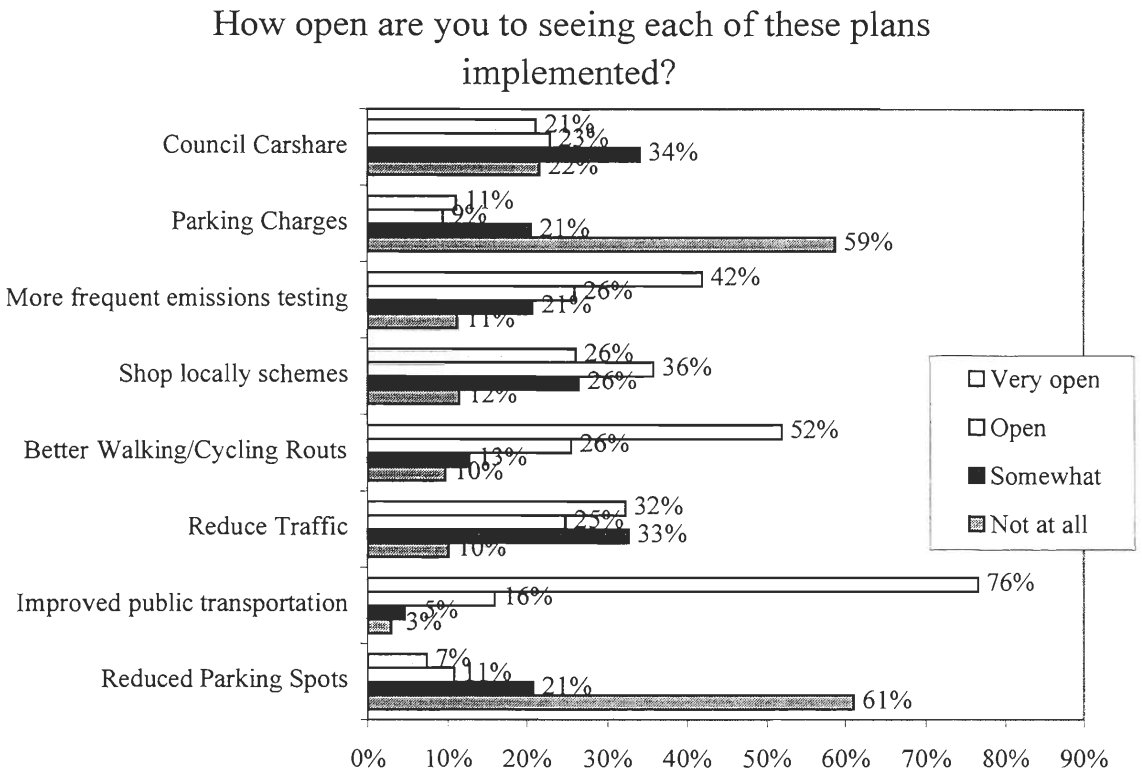

Figure A.18 - Merton Council Respondents' Openness to Plans

Do you have any suggestions for how Merton Council can improve air quality in the borough?

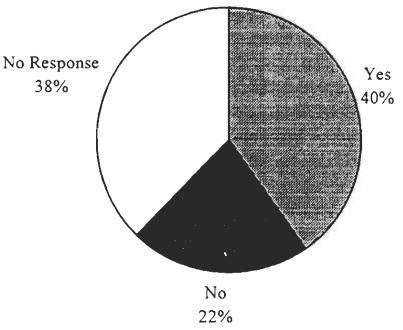

Figure A.19 - Merton Council Respondents' Suggestions for Improving Air Quality in the Borough

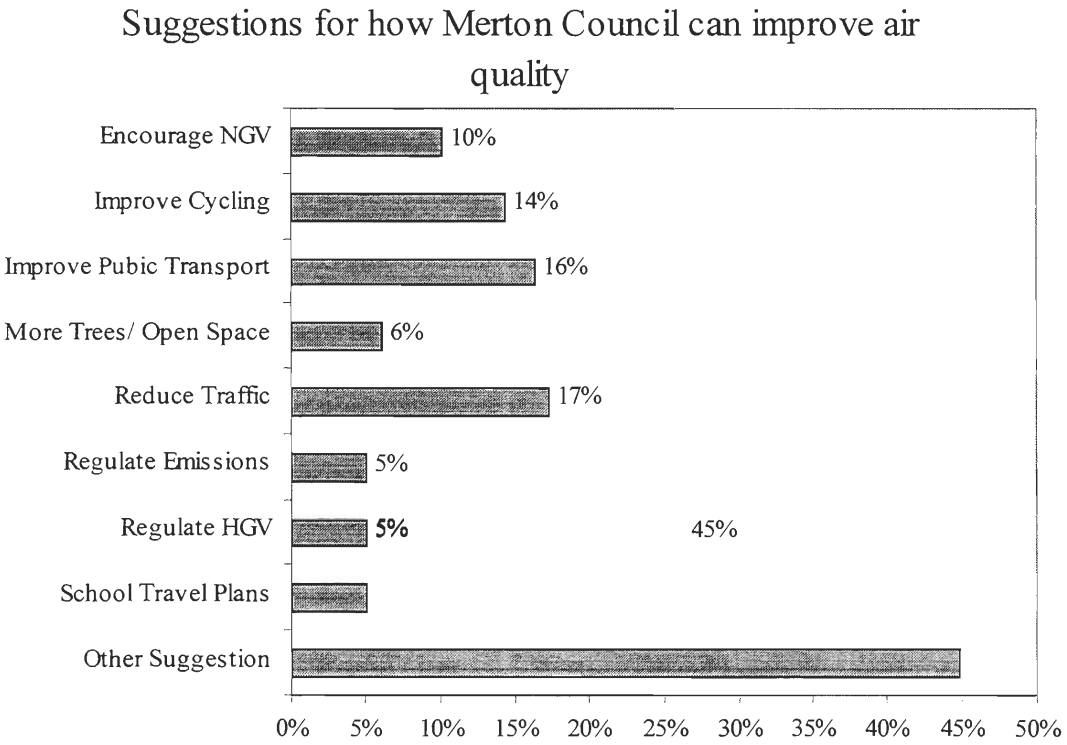

Figure A.20- Merton Council Respondents' Suggestions for Improving Air Quality

Appendix L: Qualitative Responses from AQMA Surveys

Is public transportation a viable option for you to travel?

Responses citing difficulty in travelling with children

- I also have to take and collect my son from school and after school activities.

Responses citing convenience

- Use it sometimes, but it's more convenient to use car.

Responses citing disability

- Disabled, has trouble walking
- Wife has arthritis, can't get around very well.

Responses citing essential user status

- Use van for work, need to carry a lot of equipment.

Responses citing problems with public transport

- I would need to take three buses.
- Travel to different places.
- None from where I live.
- Takes too long, connections are difficult.
- Leaves for work early (3:00 AM), tube is not open.
- I live near Aldersh, in Hampshire. There is not a suitable rail journey that I can make to get me to work in time. Also the cost of rail travel is prohibitive. I was moved to Merton from my previous job where I was able to walk to work. I had not choice over the move.
- Don't like it, unreliable.
- Not reliable.
- I travel across South London to get to work. I would have to travel into London and back out again on public transport to get to work as there are no direct links across South London. This would take an hour, compared to 15 minutes in the car.
- Public transport needs to be heavily overhauled and vast improvements made, right across the board, i.e. service, fares, and state of public transport. Plus education of younger generation RE abuse, etc.

- I do occasionally use public transport but find busses frequently dirty-bottles, cans and other rubbish on floors. Graffiti on chair backs and windows and roof of vehicles. Often young people causing noise and abusive to other passengers. And

being a woman alone feel threatened.

- My time to travel to work is 25 minutes by car 1 ½ hours by bus. I also use my vehicle for business while at work. If a bus was available which could be relied upon to connect with second bus and not waiting in cold and rain could be an option I would use a bus service.
- I drive underground trains, and for me to get to work from Mitcham to Parsons Green would be easy and an option on the new tramlink. But in our new "Integrated Transport System" Tramlink from Wimbledon back to Mitcham stops at midnight, not very good when the last District Line tube gets there at 1:05. So I can get to work but not back. Integrated? How? Not an option.
- I work in an area where public transport does not frequent.
- Use car to get to work but public transport for socialising. Could use public transport to get to work but it takes 2 hours versus 35 minutes by car!

Responses citing other reasons

- Own a car so there is no need for public transportation.

Why do you use public transportation?

Responses citing convenience

- Convenient.
- Easy access.
- Very convenient.
- Mainly for work – ease of travel.
- Convenience – close to work & home, no parking required, no car maintenance worries etc. I don't own a car.

Responses citing cost

- Cheap.

Responses citing environment

- It is better for the environment.

Responses citing no access to car

- No car.
- No other means.
- No other way to travel.
- Don't own a car.
- Can't drive.

- No alternative.

Responses citing no direct route

- No direct route by road.

Responses citing parking restrictions

- No parking.
- No parking at final destination.
- Because I am unable to take car to work due to parking.

Responses citing time

- Faster then driving.
- Would take longer to drive.
- Quicker, work in central London would be stupid to drive there wouldn't it?

Responses citing traffic

- Traffic congestion precludes car.

Responses citing other reasons

- Old, no other way around.
- Gets you where you want to go.
- Pensioner, don't go far.
- Travels short distances.
- Mom and dad don't drive.
- To go back and forth.
- Believe in it.
- Cycling is too dangerous.
- I do not like cars.

What are you prepared to do to improve air quality?

Responses citing I don't know what to do

- What needs to be done?
- Can't think of anything
- I don't know what to do.
- Not having a car what can one do?
- Don't know – you tell me what the options are.

Responses citing my actions do not effect air quality

- Already uses public transportation, doesn't think he can do any more.
- Don't think there is anything else she can do.
- Can't do much more, I already walk.
- I do not drive and, therefore, do not create air pollution to the best of my knowledge.
- Not much else I can do.
- I do not feel there is anything I can do, as I have never owned a car.

Responses citing no personal action

- Nothing
- Can't change the traffic
- Nothing I can do.
- I want to see better transport
- Take heavy goods vehicles off the road

Responses citing reduce driving

- Drive less.
- Use car less.
- Use car as little as possible.

Responses citing use alternate method of travel

- Use public transportation.
- I'd be willing to travel to work on public transport if reasonable links existed. I always use public transport to travel into London, as there is an excellent service.
- Use public transport if the owners will improve it.
- Cycle, leave the car at home
- Walk more
- Not much else can do except walk
- Cycle, if cycle lanes improved.
- Walk for short journeys

Responses citing use less polluting vehicle

- Use a more fuel-efficient car
- Use a less polluting car

Responses citing other methods

- Stage journeys to avoid traffic.

- Refused company car, took a pay increase instead and cycles to work.
- Lobby/complain to bus companies for improved services. Might consider selling my car if bus services improved and car centres were located locally
- Use moped.
- Discuss with staff how we can all cut back on using our cars, especially with local meetings.

Do you have any further suggestions about how the council can help improve air quality in the borough?

Responses citing encourage use of alternate fuel vehicles

- Change bus power to cause less pollution.
- Run NGVs on major roads only.

Responses citing encouragement of cycling

- More cycle paths

Responses citing improve public transport

- Tram needs to work.
- Improve public transport.
- Reduce fares on public transportation.
- Better pubic transportation.
- Better connections between lines, tram, more reliable public transportation
- Improve public transport, make public transportation more reliable
- Tram-link is good.
- Improve bus services-citizens/customers charter.
- Better public transportation. I myself am prepared not to use the only car in my family provided that the public transport is linked properly. I cannot use the public transport because I have to change three uses to get to my workplace, which is quite difficult.
- Provide better buses in the ones at the moment all look as if they could do with a good service. If you are unfortunate enough to be following a bus then the pollution from them is horrendous.
- Spend money on public transport.

Responses citing trees and opens space

- More trees and open spaces.
- More trees.
- More open space, stop building, more trees and green space.
- More trees, open green spaces, and so on. Playing fields not supermarkets!

Responses citing traffic reduction

- Banish all cars (extremely opposed to cars/traffic)
- Reduce traffic.
- Construct Wimbledon by-pass.
- Reduce traffic, especially lorries.
- Provide better road "network". Let the traffic move on rather than stopping in queues and producing fumes.
- Improve the flow of traffic to reduce the amount of time cars are sitting stationary in traffic emitting fumes.
- Get rid of all the traffic lights in Morden to keep cars flowing.
- Try to keep out heavy traffic.
- Completely Remove road humps.
- Close off areas from traffic e.g. Wimbledon town centre.

Responses citing regulation of emissions

- Emissions
- Car exhaust a big problem
- Emissions testing
- In collaboration with the central government, agree on a legal age of cars. Generally old cars emit a lot more pollution than newer ones
- Get rid of all old cars like in Australia
- Less factories.
- Industrial emissions lower.

Responses citing restrictions for heavy goods vehicles

- Take HEAVY GOODS VEHICLES off the roads.
- Restrict Heavy good vehicles to night-time.
- Divert heavy goods vehicles to less residential areas.
- Ban heavy vehicles during rush hours.

Responses citing school travel plans

- More school buses (primary & secondary).

Responses citing other suggestions

- Develop a travel system like the one in Croydon.
- Nothing we can do, can't avoid cars. Huge suction pump/filter in the sky.
- Not really anything you can do unless you change people's minds.
- Work earlier.
- Working party separate from the council to measure air quality.

- Stopping coal is good.
- Research doctors surgeries to identify cases of respiratory problems and analyse.
- Restrict bonfires to certain times.
- Better incentive for transferring goods transported by lorry/vans to rail or depots then use electrically powered vehicles for local inter-city transport
- Encourage local shopping.
- Clean up transfer station in Mitcham instead of looking into it, sweep roads once a week again by hand, machine is crap!
- Vote for Ken.
- Advertising car sharing schemes.
- Having more recycling facilities close to centre.
- Car tax.
- Enforce speed limits.
- Levy on cars coming into M25 circle.
- Enforce fines for cars parking on cycle paths.
- Fines for single car occupancy.

Appendix M: Qualitative Responses from Global Email Surveys

Is Public transportation a viable option for you to commute?

Responses citing difficulties in travelling with children

- I have to take my son either to a friend's house or to school and then in the evening to collect him on some days from school. When I take or collect him I have two or three other children in the car so do car share that part of the journey. It would not be possible to do these journeys by public transport. Time is another factor as even on the days when I do not take children it would take too long to travel to and from work by public transport to be able to do the number of hours I need to at work and have time at home. In any case generally I have to do the school run at one end of the day every day.
- I can't use public transport because I have to drop my 6 year old daughter at school first, then if I then had to walk home to where I would get the 118 bus it would mean I would not get into work until late. That's why I cycle when I can
- I bring my children to their child minder in Merton. The are aged 10 months and 2 ¾ so a journey with 2 trains and long walks is not viable.
- I would have to walk to bus stop, get bus, walk to child's school, walk to bus stop, get bus, walk to work and the same on the return journey.
- It is an option but waiting for a bus and being late doesn't appeal to me. Also, I bring 2 children to school and they cannot be late. We have tried public transport but there is always a bus that's late or cancelled – then the traffic the bus takes is chocablock – so the route I take in the car cuts the journey by 30 minutes at least.

Responses citing convenience

- I need to go home every lunchtime which would be impossible by public transport.
  I pay a little more for the car park, but the convenience is worth it.

Responses citing essential user

- Sometimes use car for site visits from office.
- I need the car for work I am on call for emergencies.
- Yes for commute, no for work. My role requires me to travel around the borough daily and there are not enough pool cars available for these types of roles.
- I am a peripatetic teacher and using public transport would entail significant time problems while travelling between schools and when I do not have use of my car my time efficiency is severely compromised.
- I frequently need the car for trips around the borough for Council business.
- I require use of car, to carry disabled equipment on home visits.

Responses citing flexibility

- Car allows freedom to drive on way home to collect shopping-public transport too restrictive.
- I would be contained by the very limited service timetable. This would restrict flexibility in meeting the workload of my work. IE less flexibility in meeting deadlines. Because of the use of public transport that's longer than car, for the overall time spent in travelling and work I am less productive and my leisure time is reduced
- I use car to travel to gym, go shopping, football training, take Cricket Colts after work.
- Use car when I need to do other things after work, like collect shopping, visit friends, etc.
- Car is quicker, more expensive but more flexible – can go to the supermarket or gym on the way home

Responses citing problems with public transport

- Appalling, infrequent bus service.
- The bus "service" purports to run 2 times an hour, in fact, we are lucky if it actually runs once an hour, than the time that it will arrive is never the same. The whole system is unreliable and is not suitable for one who has to be at work at a given time, plus it costs too much.
- The route is not direct from home to work-the resulting journey would take far too long.
- It requires making a connection between a twice-hourly train service and an erratic bus service.
- It is time effective to travel to work by car
- I would use public transport but it takes ¾ hr –1/2 on bus (154) from West Croydon take me ½ hour to get to West Croydon. TL1 bus much quicker but doesn't stop close to Civic centre, 20 mins walk away. Train service via Sutton and Morden South very unreliable, trains every half hour frequently cancelled this would be ideal if more reliable. Trams from Croydon seem to offer better option but the start of this service has been put back yet again was due to start November 1999. I would certainly use reliable fast transport.
- Costs more than the TOTAL COSTS of running a small car for the purpose
- The cost of travel by public transport is in my view punitive.
- I do not use it because it's unreliable, dirty, expensive and overcrowded

Responses citing other reasons

- Because I have a car.
- Evening meetings. Journeying on after work and related security.

- As I usually car share, it is more convenient to come by car-however, I do use the buses when necessary.
- Going to work the bus is quite empty. Return journey, bus is packed. Seats are sometimes full.

- Whilst I can commute quite happily by bus, my partner's journey to Raynes Park Station requires a change in bus route. Neither bus service is reliable, and should she miss her train the next one is half-hour late. Therefore public transport is not appropriate at the moment.
- I use a motorcycle when possible because it is so much quicker. If I have shopping to get or the weather is bad I use a car. I can't carry much as I have a bad back and I hate going on buses.
- I have to use the tube when I go up to London and I think it is disgustingly smelly, crowded and horrible. Buses are full of screaming kids eating and abusing each other and making other passengers life hell. I would not willingly use either method of transport. My bike is really quick and gets through traffic and my car is comfortable and gets me from door to door with no waiting.
- Smelly, dirty, expensive slow, unsafe. If cheaper, cleaner, faster with proper heating in winter and air conditioning in summer, would encourage me to use trains.
- I do use bus service on occasions but being tall I find the lack of legroom extremely uncomfortable and I get back problems from not being to sit straight.
- I get a lift by car with a friend.
- Unfortunately, I seem to have spent a large chunk of my life waiting for this bus, both in Streatham and in Morden, and I'm not prepared to do it again.
- Car is more user friendly – door to door, can control temperature, can have silence or music, and don't have to share space with undesirables.
- I pay annual car insurance and road tax therefore I use my car.

Why do you use public transportation?

Responses citing convenience

- It is relatively stress free.
- Stress of being in traffic; train/bus/tube allows you to read and relax.
- Bus stop near both home and work.
- Less hassle.
- Convenience.
- Bus stops are very convenient to where I live/work.
- Less stressful than driving.

Responses citing cost

- It is cheaper than paying for the car park.

- Don't have to worry about parking which is expensive-to come to work by bus costs $30 a month – the car would cost $50-$60 in parking charges plus fuel.

Responses citing environmental reasons

- It contributes less to air pollution.

- I do drive but have opted not to have a car. I would like to see public transport improved to reduce traffic and protect the environment.

Responses citing time

- Because it would take me too much time to drive.
- Driving unlikely to be much quicker due to volume of traffic and need to park some distance from work.
- Time factor.
- Faster-takes less time.
- Direct 15-minute journey – door to door.

Responses citing no access to car

- I don't have a car.
- I can't drive.
- Partner owns car and requires it for work.
- Too far to walk and I don't have a car.
- Use of car not available.

Responses citing parking restrictions

- Parking is also difficult in Morden.
- High parking fees.
- Insufficient parking.

Responses citing traffic

- Too much traffic in London to drive.

Responses citing other reasons

- LBM lends me the cost of a season ticket tax-free.
- The other reason is that my son wrote off my wife's car so she's got mine now!
- Most practical.
- I can read the newspaper on my way to work, which would not be possible if driving.
- Able to do other things like eat, drink, read, sleep.
- Forces me to exercise (walk to station).
- No choice!

What are you willing to do to improve air quality?

Responses citing car share

- Car share
- I would share rides if I had someone to share with

Responses citing I do not know what to do

- Don't know enough about the subject to answer sensibly
- I don't know what I could do to improve air quality.
- I am not sure that anything I can do will improve air quality, I would need ideas.
- I don't know what I could do-use car less?
- I think I do all I can but I am willing to consider any other ideas.
- I'm not at all sure what I could do to improve air quality.
- Don't know, as not aware of what would help other then travelling by public transport but then, buses are very smelly and can't help the environment.

Responses citing my daily habits do not affect air quality

- Already park and walk to sites/properties rather than drive to each one.
- I already try to minimise use of car by car sharing, walking, etc.
- I already use public transport and I don't smoke, so ....
- I do not drive anyway and walk or use public transport.
- My habits don't affect air quality, one of the reasons I choose to cycle I already walk to work and do not own a car.
- My habits would not make any difference, as I do not drive.
- Done it – disposed of motor vehicles.
- I don't have a car, for the very reasons we are currently discussing.

Responses citing no personal action

- Change travel patterns in conjunction with other measures that effect all private travellers-i.e. road pricing, higher parking charges, more parking controls. I do not think individual acts of sacrifice are going to save the planet.
- Town centres should have secure areas for cycles to be left-risk of theft reduced-more people would use bikes to make small journeys, to the station for example.
- Air quality would not improve at all if I changed my habits. It would need a dramatic switch away from vehicle use. For there to be any difference in air quality. I would use my car less if I knew that there would be environmental benefit, but at present this is not the case.
- Have a departmental vehicle or vehicles for me and my staff to use on Council Business – would mean having a vehicle constantly available then we could all review our travel arrangements.
- Get funding for public transport schemes.

- But it should not be people changing habits, it should be car manufactures changing to cleaner and alternative powering/fueling systems, what ELSE!

Responses citing reduce car use

- Use the car less for local trips when the weather is good
- Think before using car.
- Try to drive less in the borough
- Use the car less
- Drive less.
- Not take as many car trips for work purposes
- Not use my car if cost of road tax/ car insurance were reduced.
- Not use two cars.
- Use my car less if possible.
- Cut down on using the car for non-work journeys

Responses citing use alternate means of travel

- Would use public transport if convenient and cost effective to me + I did not have to use a car for work.
- Consider using public transportation.
- If direct Train Link, would consider using it.
- If alternative arrangements for access to transport for emergencies were available I would use public transport.
- I would be prepared to take public transport if it was clean and ran to a regular timetable.
- Use public transport, buses often seem to cause pollution with very dirty exhaust fumes.
- I would travel on public transport if I knew I did not need the car but it is much more
- Take child to school by walking rather than using car.
- With summer approaching I hope to cycle more.
- I sometimes cycle to work in the summer.
- Already cycle to work 2 times per week.
- Bike from childminder to work.
- Walk short journeys.
- If we had the changing/ shower facilities at work I would consider using a bike.
- Try to plan my work to ride a bike two days per week, if there is a secure place for the bike.

Responses citing use less polluting vehicle

- Use a Natural Gas Vehicle or battery operated vehicle to fulfil my daily responsibilities (subject to LBM's stock availability).
- Use low emission fuels (when readily available).

- Use other forms of energy
- Use transport provided by the LBM to carry out site visits (possibly a fleet of electric cars).
- Ensure car omits least fumes as possible.
- Depends what this requires – I'm not prepared to catch the bus to work.
- As long as it doesn't inconvenience me! Give up eating beans.
- Anything besides commuting to work by public transport.
- Drive slower.
- It would depend.
- Work from home.
- Not a lot.
- Look at solar heating at home as to reduce dependency on gas.
- Move house.
- Use lead free petrol.
- Whatever it takes.
- Anything that won't affect the principle things I do in life, or cost too much money.
- Kill smokers.
- Vote for anti-private car measures.

Responses citing other methods

- I have stopped smoking
- I am willing-but would have to stop working at Merton to do so.
- I aim to replace the car I keep at the Civic Centre from work use with a moped/motor bike.
- Consider any reasonable suggestions E.G 4day working week of appropriately longer days to reduce travelling/parking pollution by 20%

Do you have any further suggestions about how the council can help improve air quality in the borough?

Responses citing encourage Natural Gas Vehicles

- Increased Fleet of Env friendly vehicles for essential car users to use.

Responses citing encourage cycling

- An air purifying bubble. Cycle routes. Secure parking for bikes at bus/rail/shops.
- Promote working from home for its staff.
- More school buses in the borough including to private schools – this would reduce car journeys substantially.
- Do not waste money on bureaucracy.
- Has to be London wide approach no use in just Merton reducing pollution, as

pollution blows here from other parts of London.
- Stop burning rubbish.
- Organise a system to encourage schools to adopt a system to collect children an walk them to school.
- Install

Responses citing improve public transport

- Improved economic reliable public transport would automatically improve usage. It needs to be much quicker than using the car and economically attractive.
- Better Transport.
- Cost Effective Public Transport (Buses).
- Make public transport more attractive – joined up travel schemes, bike hire from major stations, bike lock-up facilities & shower facilities at major stations.
- Influence/pressure public transport managers to ensure a better public transport system.

Responses citing more trees/green space

- Plant more trees

Responses citing reduce traffic

- Improve traffic flow. Reducing lanes and narrowing roads may be aimed at discouraging car use at all and at slowing it down but it causes queues, which create more fumes. E.g Lock's lane, Western Road, and Church Road.
- Improve traffic flow.
  Responses citing regulate emissions

- Increased spot checks on emissions.
- supporting vehicle and industrial emissions testing
- Regulate emissions from road works such as line painting or hot tar rolling

Responses citing restrictions on heavy goods vehicles

- Enforce the current requirements on HGVs – Most of the fumes emanate from a small number of diesel vehicles.

Responses citing school travel plans

- More school walk schemes for pupils to and from school
- Encourage parents not to drive short distances to drop children at school-could we have school buses?

Responses citing other suggestions

- Up the miles. Or pool cars that run on alternative fuels. Make use of video. Lobby Central Government for funds.
- Park & Ride.
- The key to any sustainable improvement is central government directly or by funding local authorities.
- Home working where possible – this would save on commuting, paying fixed or lower rates to staff for travelling on business – The present scheme "rewards" those that rack conferencing and remote working so that less travelling is required internally

Appendix N: Focus Group Agenda

Good evening and welcome to our session tonight. Thank you for taking the time to join our discussion on air quality consultation issues. My name is Ralph Thompson and assisting me tonight are Sam Hogan, Keith Maver, and Mike Young. We are independent researchers representing Worcester Polytechnic Institute, a private institution of engineering and natural sciences in the United States.

We are here to find ways to develop a consultation process between Merton Council and the Merton community regarding air quality issues. You were selected to participate in this discussion group because you showed interest in air quality issues. Tonight, we will be discussing your experiences and opinions about consultation. There are no right or wrong answers, only differing points of view. Please feel free to share your point of view even if it differs from what others have said. Keep in mind that we are just as interested in negative comments as positive ones.

Before we begin, let me share some ground rules. This is strictly a research project. Please speak up. Only one person should speak at a time. Does anyone have an objection to us tape recording the session? We are doing so because we do not want to miss any of your comments. You will be assured of complete confidentiality. Comments in our report will have no names attached.

We will be on a first name basis tonight. This session will last about one hour. Let us begin by going around the room and finding out more about each other by stating your name and the road you live on or the name of the organisation you are representing.

We would now like to show a ten-minute video prepared by the Department of Environment, Transport, and the Regions.

1. Prior to seeing the video, were you aware of the process of Local Air Quality Management?

    a. How did you become aware of Local Air Quality Management?

While this video only hints at consultation between the local council and the community, this is very important to the whole process. With the entire community taking part in the development of action plans, the strategies to improve air quality are more likely to succeed.

2. With this in mind, do you think Merton Council is effective in informing you of air quality information?

    a. What about the National Government?
    b. Are you aware of air quality bands?
    c. What about the National Air Quality Strategy, Air Quality Management Areas, the Environment Act of 1995, or Local Agenda 21?

3. How could air quality information be made more readily available for the community and businesses so that they are aware of the problem and proposed steps to correct the problem?

a. Where would you like to see action plans displayed?
b. What about libraries, the Civic Centre, meeting centres, the *Independent*, or the *Merton Messenger*?
c. What makes any option an effective place?
d. Have you ever used any of these places for obtaining information from Merton Council?

4. Has Merton Council ever consulted you on any issue?

a. What was the result of your participation?
b. Would you suggest anything to improve that particular consultation?

5. As a stakeholder, what are some ideas that would motivate you to get involved with the development of action plans?

a. What are some barriers that would inhibit your participation?

6. What is the most effective way for you to be consulted on action plans regarding the improvement of air quality in the borough?

a. What makes this method the most effective option for you?
b. One possible method for consultation is a public meeting or forum. What are your thoughts on that option?
c. What about a questionnaire/survey?

7. Do you have any further suggestions regarding how all parties (the public, businesses, and Merton Council) can become more involved in working together to improve the air quality in the borough?

The recorders will now make a bulleted list of main points covered in the session

8. Do you have any other points that should be added to the list?

Thank you for your time and participation. Hopefully this meeting and our project will begin the process of involving the entire community in improving air quality in the London Borough of Merton.

Appendix O: Focus Group Sessions

Focus Group Session 1

Date: 10 April, 2000
Location: Civic Centre Ante Room
Commenced: 7:50 PM
Adjourned: 9:10 PM
Moderator: Ralph Thompson
Asst. Moderator: Keith Maver
Notes: Samantha Hogan, Mike Young

Attendance:

Name	Representing
Participant 1	Resident, Morden Road
Participant 2	Business, Merton Chamber of Commerce

Focus Group Session 2

Date: 11 April, 2000
Location: Civic Centre Ante Room
Commenced: 7:45 PM
Adjourned: 9:00 PM
Moderator: Ralph Thompson
Asst. Moderator: Keith Maver
Notes: Samantha Hogan, Mike Young

Attendance:

Name	Representing
Participant 1	Resident
Participant 2	Resident
Participant 3	Resident, Morden Road
Participant 4	Interest Group, Merton Friends of the Earth
Participant 5	Interest Group, Merton Cycling Campaign
Participant 6	Interest Group, Merton Cycling Campaign
Participant 7	Merton Council Principle Engineer, Environmental Services

Focus Group Session 3

Date: 12 April, 2000
Location: Civic Centre Ante Room
Commenced: 7:40 PM
Adjourned: 8:30 PM
Moderator: Ralph Thompson
Asst. Moderator: Keith Maver
Notes: Samantha Hogan, Mike Young

Attendance:

Name	Representing
Participant 1	Resident
Participant 2	Interest Group, Phoenix College Representative
Participant 3	Interest Group, Green Park Residents Association

Appendix P: Strengths of Existing Consultation Efforts

Session	Participant	Comment
1	2	Aware of Local Air Quality Management through involvement with Environmental Forum and Local Agenda 21.
1,2	2,3	Electronic bulletin board in Wimbledon displays air quality information.
1	1	Phoning for local weather will provide air quality report.
1	2	Council does provide statistics about change (in policy, as a result of policy).
2	2	Environment Forum provides a specific part of the agenda dedicated to feedback.
2	5	Merton Cycling Campaign has quarterly meetings with council members to discuss transport and environment issues.
3	3	Merton Messenger is a good source for information about the council.
3	2.3	For information regarding the council, would go straight to the Merton Civic Centre.
3	3	Merton Council has done appropriate consultation before.
3	3	Wimbledon Civic Group has meetings to discuss issues, and Merton Council corresponds with them.

Appendix Q: Weaknesses of Existing Consultation Efforts

Session	Participant	Comment
1	1	Participant was not aware of Local Air Quality Management, and conveyed that Merton Council is not effective "all that much" in providing air quality information.
1	2	Although air quality is displayed on weather reports occasionally, it is region-wide and not specific enough.
1	2	Air quality information put out by the Council is "scientific" and not simple enough. Information should not look like "something put out by Merton Council."
1	2	One of the reasons people do not get involved is because there is a perception that nothing ever changes.
1	1	Participant has "lost faith with politicians." A leaflet will come around on an issue (in this case, "Raising the Roof"), but nothing ever changes. "Nobody takes notices... there are no changes after public comments" are made.
1	2	Environment and Safety Forum is for organisations and not so much the individual citizens. A regular list of 80 is invited, however only 30 attend, and those are only interested parties. People don't feel that these meetings are "accessible", and no one wants to attend.
1	2	Merton is not a community, and people "self-select" where they live. Therefore, a large-scale forum will not work.
1	2	Questionnaires yield a bad response. 70,000 mailed, and only 500 returned (citing a survey). People don't return surveys.
2	4	Merton Council has a web site, but no air quality information is available.
2	4	In a previous consultation with the Council, a community petitioned the Council not to close a road, but there comments were "ignored."
2	5	Merton Council primarily consults with organisations, which do not always represent the people inside the group, and do not always consult all members.
2	3	Participant noted, "Normally, I am not asked to be involved."
2	2	"Merton Council needs to practice what they preach."
3	1	Merton Council is not effective in distributing air quality information, and things like mail drops are useless.
3	3	The Merton Messenger is effective, but it is published quarterly and sometimes information is outdated by the date of publication.
3	3	Participant has been involved in previous consultation with the Council, but finds "Merton doesn't listen." Communicating with the Council is "like banging your head up against a brick wall," and the "Council is very reluctant to back done."
3	1	The Council needs to consult before the issue is completed.
3	1,3	Participant feels that negotiations are worthless, and that the Council "needs to be more open to suggestion, and to prove to people that they will listen."

Appendix R: Improvements for Future Consultation Efforts

Session	Participant	Comment
1	1	Information needs to be kept simple.
1	2	Air quality reports mentioned during weather or local phone services could be more specific to a certain area.
1	2	Hire a marketing company or public relations company to create releases on air quality information.
1	2	Information needs to have "pizzazz."
1	1	Exploit the case of asthma induced by poor air quality as a way to make the public aware of air pollution's effects.
1	1	Schools may be an informative way to educate children about the effects of air quality.
1	1	Information needs to be presented visually, since most people work with "pictures, not words."
1	1	Information could be made available in large shopping centres, such as Wimbledon Centre Court, where a lot of people congregate.
1	1	Emphasise to people that improving air quality is *everyone's* responsibility.
1	2	Information needs to look sparky, big, simple, concise, bright, exciting, and in your face.
1	1,2	The council needs to show a policy change as a result of public opinion.
1	2	The council needs to consult in a localised level. Do not use wards as a basis for localisation.
1	1	The council could use tenants associations as a means of consultation.
1	2	Forums are not the best way for consultation. Forums usually attract "professional meeting attendees", and not the general public. People feel they don't have access to these meetings.
1	2	Merton in itself is not a community. People self-select where they live, in different areas, not Mitcham or Morden.
2	3,4,5	Air quality information could be published in a paper every fortnight, or on a consistent, regular, basis. This could be done in a local newspaper such as the Merton Messenger or the Guardian.
2	3	Schools can be a good place to release information due to the amount of mothers who drop off their children; and the fact that they are a prime demographic for causing the pollution problem in the first place.
2	7	Campaigning for air pollution reduction should be done. This could include using scare tactics to make people aware of the implications of air pollution.
2	4	Merton Council needs to get information out to the people, making them aware through door drops, or Centre Court on Saturday. People need to feel aware of the problem and empowered to make a difference.

2	1	Merton Council needs to send a positive message, some motivation for stopping car use.
2	2	Use corner shops near big developments where people need to drive to display messages.
2	5,7	Display air quality information in libraries and hospitals, and possibly educate doctors as to the air pollution concerns and symptoms.
2	2,4	Improve Merton Council's web site and by adding air quality information.
2	6,7	Merton Council should concentrate on making people aware of the problem and getting everyone involved. They need to show that the ownership of the air quality information belongs to the people. The council should explain clearly from the start what can and cannot be done.
2	7	The Merton Council should set a scope, or boundaries, as to what can realistically be done to solve the problem.
2	3,5	Organisations the council consults with regularly, such as Friends of the Earth, do not always represent their members entirely. The council should aim to consult with those not involved with these organisations. Normally, residents who are not involved with an organisation are not asked to be involved in the consultation process.
2	5	Merton Council should involve more organisations in the process, with regular meetings to relate on progress.
2	5	Merton should use press releases with coloured air quality information that is easily understandable.
2	2,4	Merton Council should look into the local radio as a means for announcing air quality information.
2	3	Merton Council should involve local businesses and create incentives for employees to use public transport.
3	2,5	Merton Council needs to lead by example and be open and honest about the progress of consultation and the current state of air quality. Merton council needs to practice what they preach.
3	1	The Merton Council Web Site would be an effective place to release air quality information.
3	1,2	Information needs to be interesting and eye-catching. The articles need to be put in context. Possibly use graphs to make information easy to recall.
3	2	Use local colleges to post information because students are interested in the air quality situation.
3	2,3	Merton Council has message boards that contain information, they could use these to post air quality related information.
3	1,3	Use the local libraries to make air quality information available.
3	1,2	Look into the possibility of using a bulletin board at the Morden Tube Station.
3	1	Merton Council should consult about issues prior to making any decisions regarding action plans.
3	1,2,3	Merton Council needs to convince the public that they are willing to listen to community suggestions.

3	2	Merton Council needs to address the limitations of the consultation before engaging with the public.
3	2	Focus consultation efforts on the air quality "hot spots", because people in these areas will be most effected by subsequent decisions.
3	2	Meetings held for consultation purposes should be informal and not as intimidating as a forum.
3	2	Merton Council needs to do the "leg work", and be proactive in consulting with the community.
3	3	The Merton Council should engage with community groups, such as the Wimbledon Civic Group, to bring up important issues (such as air quality) and then discuss results and opinions.
3	1,2	The concept of air quality has to be "sold" so that people become interested. People need to be convinced that being involved is to their benefit.
3	2	Hold meetings in the areas where problem areas are, not in the Merton Civic Centre.
	1,2,3	Merton Council should have an interactive exhibit where people can learn and make their opinions heard. Wimbledon Centre Court may be a possible place for this.

Appendix S: Possible Barriers to Future Consultation Efforts

Session	Participant	Comment
1	2	A Majority of people do not understand complex air quality information, such as ppbs (Part Per Billion), etc.
1	2	A marketing company hired to design and effective campaign may cost money.
1	2	"People will not change in a free and democratic society." Need government resources to provoke change.
1	2	The lack of a "quick win" or policy change due to public opinion may result in nothing changing, and stagnant public involvement.
1	1	People have already "lost faith" in politicians, and it may be difficult to regain confidence. This is true of Merton Council as a whole.
2	4,5	Would like to see information in the newspaper, although this may require monetary resources to effectively distribute information on a continual basis.
2	5	Further consultation with organisations may result in an identical outcome of what consultation produces currently, which is no consultation within the organisation itself.
2	2	Merton Council must lead by example, but if the council is representative of the borough, it too will not change. This may lead to the community's perception of the Council being that they are not leading, forcing more apathy.
3	2	"Merton needs to do the leg work and be proactive." However, this requires manpower and resources.
3	2	Free things should be given out as an incentive to participate in consultation exercises, but Merton Council may not have resources to do such a thing.
3	1	Interactive displays work well, but are costly.

Appendix T: Focus Group Summary Topics

Session 1:

- Air quality information needs to be presented to the public in a simple, eye-catching manner. Visuals, screens, and pictures are best; avoid figures, numbers, and technical jargon.

- Before a consultation process can be successful, the image and perception of the Merton Council by the public must be improved.

- Consultation must be localised. This means that a large-scale forum would not be effective; rather, many smaller discussions, based around communities (examples: Wimbledon Town Centre, Raynes Park, Pollards Hill; not Mitcham, Morden, or Merton) with a mediator independent of the Council would work best.

Session 2:

- Awareness of the air quality problem must first be raised in order for consultation to be effective. Use scare tactics and campaigning to get people involved (done through schools or using asthma cases). Motivate people through incentives and positive outcomes for changes.

- Air quality information that is released needs to be more understandable. People should know how they will be affected and how they will benefit from changes. There is a need to have a clear understanding of the role of both community and Merton Council during consultation.

- Merton Council must lead by example. Merton Council should go to smaller communities and actively seek public opinion. There is a need to improve the community's perception of the Council.

Session 3:

- Air quality information needs to be presented in a simplistic manner. This can be done through the use of charts or graphs that present material in an eye-catching manner. Also, the use of community bulletin boards, or advertisements at areas of large congregation, can increase the community's awareness of the air quality problem.

- There is a need for localised consultation. The use of tenants and residence associations was suggested to accomplish this task.

- Merton Council needs to be open to change as a result of public input. Merton Council needs to make an attempt to actively solicit opinions from residents who may not normally contribute ideas to Council activities.

Appendix U: List of Consultees for Air Quality Action Plans

Key: S/D/MSEF
S = Statutory Consultee
D = Discretionary Consultee
MSEF = Previously Consulted through Merton Safety and Environment Forum

Key: G/E/T/B/R/O
G = Government Organisation
E = Environmental Organisation
T = Transport Organisation
B = Business Organisation
R = Residential Organisation
O = Other Organisation

Organisation	S/D/MSEF	G/E/T/B/R/O
London Ecology Unit	MSEF	E
Wandle Industrial Museum	MSEF	E
Going for Green Community Worker	MSEF	E
London Wildlife Trust	MSEF	E
Mitcham Common Conservators	MSEF	E
The Community Scrap Scheme	MSEF	E
Wandle Group	MSEF	E
RENUE (Renewable Energy in the Urban Environment)	MSEF	E
Merton Historical Society	MSEF	E
Wimbledon Society	MSEF	E
Wimbledon & Putney Common Conservators	MSEF	E
Fiends of the Earth	MSEF	E
Merton Groundwork Trust	MSEF	E
Pedestrians Association	MSEF	T
British Red Cross	MSEF	T
Merton Cycling Campaign	MSEF	T
The South of London Group of Advanced Motorists	MSEF	T
Cyclists Touring Club	MSEF	T
Sainsbury's	MSEF	B
A & J Bull	MSEF	B
Merton Chamber of Commerce	MSEF	B
Merton Governor's Council	MSEF	O
Rutlish School	MSEF	O
Phoenix College	MSEF	O
Merton Association of Pensioners	MSEF	O
United Nations Association	MSEF	O
Borough Interfaith Forum	MSEF	O
Merton Association for Independent Access	MSEF	O
John Innes Society	MSEF	O
Merton Tenants and Residents Association	MSEF	O
Metropolitan Police Traffic Management	MSEF	O
Wimbledon Guild of Social Welfare	MSEF	O

Merton Assembly of Baha'is	MSEF	O
London Fire Brigade	MSEF	O
St. John Ambulance	MSEF	O
Merton, Sutton, and Wandsworth Health Authority	MSEF	O
South Park Estate Resident Association	MSEF	R
Raynes Park & West Barnes Resident Association	MSEF	R
Garth Resident Association	MSEF	R
St. Helier Tenants and Residents Association	MSEF	R
Mitcham Village Resident Association	MSEF	R
Runnymede Area Resident Association	MSEF	R
Lavender Residents and Tenants Association	MSEF	R
Graham Hartfield & Herbert Road Resident Association	MSEF	R
NE Mitcham Community Association	MSEF	R
Florence Road Resident Association	MSEF	R
North West Wimbledon Resident Association	MSEF	R
Wimbledon Park Resident Association	MSEF	R
Bushy Court Resident Association	D	R
Carshalton Road, Aspen Gardens, and Goat Road Resident Association	D	R
Merton Tenants and Residents Group	D	R
Morden House Residents Association	D	R
Secretary of State	S	G
The Highways Agency	S	G
The Environment Agency	S	G
The London Borough of Croydon	S	G
The London Borough of Sutton	S	G
The Royal Borough of Kingston upon Thames	S	G
The London Borough of Wandsworth	S	G
Surrey County Council	S	G
National Trust (Morden Hall Park)	S	E
Greater London Authority	S	G

Appendix V: Sample Articles for Merton Council

The following article was drafted to announce the completion of our project to the Merton community.

Recently, a team of undergraduate students from Worcester Polytechnic Institute in the United States completed a project for Merton Council. In their document, *Development of a Consultation Process for Air Quality Issues in the London Borough of Merton*, the students recommended several methods for creating an effective communication process between Merton Council and the Merton community. During the course of completing their research and fieldwork, many residents and organisations exhibited interest in learning about the results of their project. This project is now available as reference material in the Morden Library in the Merton Civic Centre. The students would also like to extend their gratitude to all those who participated in the development of the project.

The following article was drafted as a possible suggestion for Merton Council to use when announcing the beginning of localised discussion groups.

AIR QUALITY IS EVERYONE'S RESPONSIBILITY...

You are an integral part of improving air quality. Merton Council needs your opinions to develop action plans that aim to lessen pollution in the borough. Merton Council will soon be facilitating discussion groups around the borough to discuss ideas for improving the air quality in ***your community***. Look for notices stating the times and places for these discussions -- Without your input, Merton Council cannot develop action plans that suit the needs of ***your community***.

...THE COUNCIL NEEDS YOUR OPINION.

For more information about air quality consultation, visit the Morden Library and enquire about *Development of a Consultation Process for Air Quality Issues in the London Borough of Merton*, a report detailing recommendations for creating effective communication between Merton Council and the Merton community.

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