



REPORT TO EXECUTIVE

FINAL REPORT OF THE JOINT ENVIRONMENT AND HEALTH SCRUTINY WORKING GROUP - IMPACT OF AIR QUALITY AND VEHICLE EMISSIONS ON HEALTH

PURPOSE OF THE REPORT

1. To present the Joint Environment and Health Scrutiny Working Group's findings, conclusions and recommendations following its investigation of the impact of air quality and vehicle emissions on health in Middlesbrough.

INTRODUCTION AND BACKGROUND

2. The joint working group, which comprises members of the Environment and Health Scrutiny Panels, investigated this issue over the course of four meetings between September 2010 and April 2011. A Scrutiny Support Officer from Legal and Democratic Services co-ordinated and arranged the submission of written and oral evidence and arranged witnesses for the review. Meetings administration, including preparation of agenda and minutes, was undertaken by a Governance Officer from Legal and Democratic Services.
3. A record of discussions at working group meetings, including agenda, minutes and reports, is available from the Council's Committee Management System (COMMIS), which can be accessed via the Council's website at www.middlesbrough.gov.uk.
4. The membership of the working group was as follows:

Councillors Kerr (Chair); Carter, Dryden, C Hobson, Junier and Mrs Pearson OBE.
5. The working group initially sought to investigate the issue of the impact of vehicle emissions on health. However, as it became apparent that air pollution is caused not only by vehicle emissions but a number of sources, it was agreed to examine the overall subject of the effect of air quality on health.

THE WORKING GROUP'S FINDINGS

6. The Joint Environment and Health Scrutiny Working Group's findings are set out below and relate to:
 - a) Historical background and the current local position
 - b) Main air pollutants
 - c) The health effects of pollutants
 - d) Council responsibilities on air quality monitoring
 - e) Ongoing and future local authority work and the role of local health services
 - f) Health trends associated with air pollution

Historical Background and the Current Local Position

7. In 1962, using the national smoke and sulphur dioxide monitoring network of 1,200 sites as the benchmark, Middlesbrough town centre recorded the highest levels of pollution in the UK. Since then, there has been a dramatic improvement in air quality through effective education, enforcement, a successful domestic smoke control programme, improvements in industrial and commercial processes, better engine technology and traffic management schemes and cracking down on illegal activities such as cable burning.
8. In the 1990s, following significant improvement in local air quality, the local authorities of the Tees Valley worked closely with local industrialists and the local media to challenge the myth that local air was heavily polluted through a funded campaign. The results of hydrocarbon and nitrogen dioxide surveys from that time indicate that air quality has continued to improve. In fact Middlesbrough residents now enjoy amongst the cleanest urban air quality in the UK - with current pollution levels about half of what they were 15 years ago.
9. The working group considered a report produced by ¹LACORS '*A Clean Bill of Health - How Councils' Environmental Protection Work Improves Health and Well Being.*' The report summarises for councillors, and other local decision makers, the health effects of pollution and what councils and their partners can do to improve the health of their communities.
10. LACORS indicates that:
 - It is vital for councils to involve their environmental protection teams as key stakeholders in improving public health.
 - There is a need for councillors and senior council officers with planning, transport and health responsibilities to be aware of the issues, how they could make them better, how they could make things worse, and how environmental protection services can help.
 - Councils should use and promote their community leadership role and reduce their own harmful emissions, protect the health of their workforce and conduct relevant scrutiny reviews.
 - Public health specialists need to know how polluted air and land impact on health and how local authorities can help.

¹ LACORS is the 'Local Authorities Co-ordinators of Regulatory Services.' It is the central body responsible for overseeing local authority regulatory and related services in the UK.

11. The LACORS report also includes a checklist for local authorities which indicates how the above points can be actioned. Details of this are shown from paragraph 30 onwards.

Main Air Pollutants

12. Across the UK, including Middlesbrough, the main air pollutants are:
- a) **Particulate matter - PM10** - This is small, respirable particles less than 10 microns in size. Diesel engines, coal burning, industrial processes and tobacco smoke are documented sources. The national air quality standard for PM10 particulates is 40 micrograms per cubic metre (40 µg/m³) expressed as an annual average. Middlesbrough's continuous air quality analysers typically record levels between 18 and 22 µg/m³, which is well below the health standard. There is a daily PM10 health standard of 50µg/m³ and 35 exceedances are permitted in any one year. Middlesbrough experiences between two and 15 exceedances per year depending on weather conditions, such as photochemical smog in summer. Peak levels usually occur annually on bonfire night.
 - b) **Nitrogen Dioxide** - Fossil fuels emit nitrogen dioxide during combustion, including road transport. The national air quality standard for nitrogen dioxide is 40 µg/m³ expressed as an annual average. Middlesbrough's continuous air quality analysers typically record levels between 20 and 25 µg/m³, which is well below the health standard. There is a daily nitrogen dioxide health standard of 200 µg/m³, with 18 daily exceedances allowed annually. Over the last three years there have been no exceedances locally.
 - c) **Ozone** - This is a secondary pollutant, which forms when nitrogen oxides, hydrocarbons and other pollutant react together triggered by sunlight. Highest levels tend to occur from May to July, often many hundreds of miles from the emission sources. Rural locations tend to suffer from higher ozone pollution than urban areas, particularly in southern and eastern England. The ozone air quality standard of 100µg/m³ expressed an eight hour average is not legally binding. Most ozone measured in the UK is imported from primary pollutant sources upwind of measurement points. During periods of prolonged sunny weather with little wind, urban pollutants tend to react together to form local ozone and in Middlesbrough this happens occasionally. The air quality standard permits ten exceedances per year. In the three years from 2007 to 2009, Middlesbrough recorded totals of four, 11 and one exceedance(s) respectively. By comparison, the national ozone monitor at Pickering in North Yorkshire recorded 13, 41 and 40 exceedances over the same three year period. In terms of potential breaches of air quality health standards, ozone is Middlesbrough's worst pollutant, but ozone levels in rural areas such as North Yorkshire are higher.
 - d) **Benzene** - This is a constituent of road fuels. Long term exposure to high levels can lead to an increased risk of cancers. The national air quality standard of 16µg/m³ averaged over a full year will reduce to 5 µg/m³ in December 2010. Middlesbrough's benzene concentrations at Breckon Hill in 2007, 2008 and 2009 were 1.16, 1.15 and 0.98 µg/m³ respectively. In 1996, a Teesside-wide study recorded a typical urban background level across Middlesbrough of 6 µg/m³, with typical roadside levels of 8 µg/m³, and

(Cont...)

elevated levels near industrial boundaries up to 12µg/m³. Concentrations have reduced over the last 15 years due to improved engine management systems, catalytic converters and improved industrial controls.

- e) **Polycyclic Aromatic Hydrocarbons (PAHs)** - These consist of a large group of organic compounds, some of which are linked to cancer in high concentrations. Predominant sources in the UK are coke works, steel works, coal burning and to a lesser extent diesel engines. A new air quality standard of 0.25 nanograms per cubic metre was proposed by the previous government to take effect from early 2011. Middlesbrough's recorded level of PAHs for 2009 was 0.35 nanograms per cubic metre which is above the proposed standard. The Environment Agency, the regulatory body for major industry, consider the local coke ovens connected with the steel industry to be the predominant source. This pollutant requires continued assessment.
- f) **Other pollutants**, including sulphur dioxide, butadiene and carbon monoxide, are significantly below the national air quality health standards and pose no health concern.

The Health Effects of Pollutants

13. Pollution can be a significant factor in ill health - it reduces life expectancy and perpetuates health inequalities. As such, it should be considered alongside other important health issues such as reducing smoking, healthy eating and exercise. Pollution in the air we breathe and in the land we live on can seriously damage our health in both rural and urban areas. Chemicals and other pollutants in industrial land can seriously harm adults, children and unborn babies. In 2010, the House of Commons Environmental Audit Committee heard evidence that, in 2005, around 35,000 UK residents died prematurely as a result of air pollution exposure. Research suggests that people whose death is caused by air pollution die, on average, 9.8 years earlier. Evidence suggests that air pollution can be as hazardous to health as being severely obese or smoking for a lifetime - in fact the the number of deaths above is comparable to the annual number of deaths that obesity contributes to.
14. Pollution disproportionately affects vulnerable groups such as children, older people and people with medical conditions. It also has a greater effect on areas of deprivation. This means that pollution not only makes people's health worse, but also increases health inequalities.
15. It is indicated by the World Health Organisation that by reducing air pollution levels globally, we can reduce the global burden of disease from respiratory infections, heart disease, and lung cancer. In general, air pollution can be responsible for:
- Increased risk of developing cardiovascular and respiratory diseases, as well as of lung cancer.
 - Breathing problems, triggering asthma, reduced lung function and causing lung diseases.
 - Increased bronchitis in asthmatic children.
 - Inflammation of the respiratory tract, causing coughing, mucus secretion, aggravation of asthma and chronic bronchitis.

(Cont....)

- Increased cardiac disease.
 - A general increase in mortality.
16. The working group heard information from Professor Tanja Pless-Mulloli, Prof. of Environmental Epidemiology at Newcastle University. Members heard that air quality has changed (ie improved) dramatically over time, as have attitudes to pollution. Health risks are well recognised, as is the link with social inequality - with past studies having shown that people who were unemployed and living close to heavy industry were more likely to suffer from health problems.
 17. Information was submitted in respect of the results of a three-year study which was undertaken in the mid-1990s regarding links between poor health and air pollution. That study, which was undertaken by the ²Teesside Environmental Epidemiology Study Group, compared health information from the poorest areas of Teesside and Sunderland. The study found that while health in both areas was poor compared to England and Wales generally, there was no evidence to indicate that local air pollution contributed to:
 - High prevalences of asthma and other respiratory problems.
 - Increased numbers of consultations with doctors.
 - Low birth weight and foetal abnormality.
 - Death rates from heart disease and cancers other than lung cancer.
 18. The study did find, however, that the death rate from lung cancer among women was higher in those living close to industry. Rates among men did not show this marked difference. A possible explanation for this was that past local industrial air pollution had contributed to this excess. A follow up study was undertaken in 2006, which confirmed the earlier findings. A further point that was made by Professor Pless-Mulloli was that the latency period for lung cancer could be up to 20 years, which means that cases identified in the 1990s could have been caused by exposure to air pollution in the 1970s. As pollution levels are now much less, it is likely that the identified rates of lung cancer will fall over time, though a further contributing factor is cigarette smoking. Reference was also made to social factors, particularly social deprivation. It is considered that pollution and poor air quality impacts more greatly on those on low incomes, who tend to suffer from generally more unhealthy lifestyles and poorer diet.
 19. The working group also questioned whether any research had been undertaken to measure any impact on health on people who lived, or studied, in the case of schools, alongside busy roads. In response it was explained that studies have shown that traffic emissions can trigger more severe and more frequent attacks of respiratory problems such as asthma, particularly when combined with social deprivation factors, as outlined earlier.
 20. Although it might be tempting to identify a location adjacent to a road as potentially problematic, it was suggested that it could be presumptuous to do so. To ensure accurate results, a large sample population is required, which needs to take into account what levels of illness or disease could ordinarily be expected.

² This group comprised a team of investigators from Teesside, Durham and Newcastle Universities plus local authority representatives.

21. Required air quality standards are fairly consistent across Europe and have been set by experts with public health in mind. As has been outlined, measured levels across Europe are generally now much lower than in the past - although it follows that further reductions in levels below the maximum values would continue to provide health benefits.

Council Responsibilities on Air Quality Monitoring

22. Local authorities have a legal responsibility to monitor and assess local air quality. Environmental protection services are responsible for protecting local communities from air pollution and have made major contributions to its reduction. Annual air quality assessment reports are required to be submitted to the Government, which in the past has appointed external experts to audit the findings. Where air quality exceeds any one of eleven national air quality standards, the local authority has a legal responsibility to develop and implement a detailed air quality action plan to improve local air quality to meet all the health standards.
23. To date, 230 local authorities have had to declare an air quality management area and implement an action plan due to poor air quality, often due to traffic pollution. As Middlesbrough's air quality is significantly better than all eleven air quality health standards, it has never been necessary to declare an air quality management area locally. All of Middlesbrough Council's air quality assessments have been accepted by national government.
24. Middlesbrough Council operates three air quality stations, which measure air quality continuously. These are located in positions where modeled and measured data suggests maximum long-term community exposure levels are most likely to occur. The monitoring stations are located at :
 - Breckon Hill School - This is located in a residential area bounded by busy roads (Marton Road, Longlands Road, the Longlands Bypass to the A66 and the A66 dual carriageway). The site is also between the industrial complexes at Wilton, Billingham and North Tees.
 - Elm St - This is a town centre location near the Register Office/Middlesbrough House which measures typical town centre traffic and stationary source emissions.
 - Macmillan College - This location is near to the A66/A19 interchange, which is the busiest road interchange in central Teesside.
25. Middlesbrough's detailed Air Quality Assessment report for 2010, which confirmed that all air quality measurements were significantly better than all eleven air quality health standards, was submitted for the working group's consideration.
26. Information was submitted on examples of the Middlesbrough Council's work in commissioning and undertaking surveys and studies of air pollution. In 2004, a town-wide traffic pollution study was carried out using a sophisticated modeling programme to estimate PM10 and nitrogen dioxide long-term pollution trends across the town, with a focus on the contribution from road traffic. Modeled values were calculated from traffic flows, other emission sources, measured values and building structures. Local residents would, however, not be exposed to the estimated roadside and road edge levels for significant periods relative to the air quality standards, which are daily and annual. The estimated concentrations were:

- Ormesby Road/Longlands Rd junction. Nitrogen dioxide 33 µg/m³, PM10 24µg/m³.
 - Kings Road. Nitrogen dioxide 30 to 36 µg/m³, PM10 23µg/m³.
 - Marton Road/Marton Village. Nitrogen dioxide 26 µg/m³, PM10 21µg/m³.
 - Corporation Rd/Elm St. Nitrogen dioxide 26 µg/m³, PM10 22µg/m³.
 - A66/West Lane. Nitrogen dioxide 32 µg/m³, PM10 23µg/m³.
 - A66/Ashford Ave Nitrogen dioxide 33 µg/m³, PM10 24µg/m³.
 - Parkway A174/Shetland Close. Nitrogen dioxide 28 µg/m³, PM10 21µg/m³.
 - Cargo Fleet Lane/Brambles Farm. Nitrogen dioxide 30 µg/m³, PM10 23µg/m³.
27. The above survey showed that even roadside sites were below the national air quality health standards in 2004. Council officers responsible for monitoring consider that it is probable that pollutant levels will have fallen since 2004 as a greater percentage of the road traffic fleet now has catalytic converters fitted.
28. In the early and mid 1990's, City Challenge and Urban Programme funding was used to measure nitrogen dioxide concentrations at 40 locations across the town. This was at a time when catalytic converters were new and were not fitted to the vast majority of the road transport fleet. Highest levels were found in the northern quadrant of the town with typical levels of 48 µg/m³ and lowest levels in the southern quadrant of the town with typical levels of 28 µg/m³. It can be shown therefore, that levels of nitrogen dioxide have reduced by 50% over the last 18 years or so following the introduction of catalytic converters, the development of more fuel efficient engines and improvements made in industrial processes.

Ongoing and future local authority work and the role of local health services

29. As indicated earlier, Middlesbrough's air quality has improved beyond recognition, with the town now having among the best air quality of urban areas in the UK, with all relevant standards being met. Monitoring will continue to be undertaken to ensure that this remains the case and that the health effects of pollutants are reduced as far as possible.
30. As has also been outlined, work has been undertaken in compliance with the LACORS action checklist referred to at paragraph 11. This relates to:
- i. Ensuring that the Joint Strategic Needs Assessment, local transport plan (LTP), traffic management plan and strategic land use plan adequately address the health impacts of environmental pollution with advice from the authority's environmental protection team.
 - ii. Ensuring that public protection and local health services work together as closely as possible.
 - iii. Ensuring that local areas of contaminated land are known and that action is taken to reduce health risks.
 - iv. Involving the environmental protection team in developing new initiatives in transport and planning.
 - v. Involving the environmental protection team in measures to protect the Council's staff from pollution and to reduce the impact of the council's own activities on air quality.

(Cont....)

- vi. Involving overview and scrutiny committees in looking at pollution and its impact on health.
 - vii. Ensuring that land contamination issues are sufficiently considered prior to developments being given planning permission.
 - viii. Ensuring that the environmental protection service is adequately resourced, with staff trained to protect the authority from legal and financial risks, for example, in managing contaminated land remediation projects.
31. Further points highlighted by LACORS relate to action regarding Air Quality Management Areas and Air Quality Action Plans, and associated Health Impact Assessments. To date these have not been relevant to Middlesbrough due to high standards of air quality. The other points from the LACORS checklist have all been actioned locally.
32. In addition, the working group heard about the Council's involvement in the development of a One Planet Living Sustainability Action Plan and how this is linked to improved air quality.
33. The One Planet Living concept is based on acknowledging that the area of productive land and sea on Earth is limited, and that the human population is placing increasing demands, which cannot be sustained, on this finite resource. At present, Middlesbrough residents, in common with the whole of the UK population, are living a three planet lifestyle. In simple terms, a fair share of the world's resources is about 1.7 hectares per person per year, often called the ecological footprint, but in Middlesbrough we live lifestyles needing 5.1 hectares per person per year - which equates to needing three planets to support life. For the long-term maintenance of reasonable living conditions, our demands must be reduced to one planet. The challenge is to achieve this by improving environmental conditions and local wellbeing in an affordable way.
34. As stocks of resources such as fossil fuels, minerals, timber and water continue to be depleted, these will get more expensive. In times of financial constraint it is essential to ensure resources are used as efficiently and effectively as possible. Applying the One Planet Living principles to all Council activities is a very practical way of helping to provide the best possible services to the local community within tightening budgets. It is anticipated that better use of these resources will also impact further on local air quality, which could be further improved as less resources, such as fossil fuels, are used.
35. In addition, one of the 10 principles of the One Planet Living Framework is to develop sustainable transport. Promoting the increased use of public transport, cycling, walking to school etc., as well as reducing the need to travel, will reduce dependency on the use of cars and lead to further improvements in air quality. In this regard, the local authority is involved in areas such as transport planning, urban design and generally trying to change attitudes to travel. For example the authority now uses some electric vehicles and is to promote their use by the public by installing charging points in Middlesbrough. It was noted that Middlesbrough's air quality is not too badly affected by standing, gridlocked traffic as this is, comparatively, not a major local problem. Nevertheless, work will be continued, as outlined above to reduce dependency on vehicle usage.
36. Members also heard how the Council is working with health bodies to encourage healthy lifestyles, such as healthy eating and exercise promotions through the Healthy Town Programme.

37. Information was submitted by Dr Peter Heywood, Locality Director for Public Health, Middlesbrough PCT/Middlesbrough Council.
38. Dr Heywood advised that work is ongoing between the Council and local health services in a number of areas in order to encourage healthy lifestyles. It is recognised that it is not enough to simply encourage people to abandon car usage. Wider issues and health risks also need to be taken into account as there is evidence that these have more of an overall adverse health effect than air quality. Nevertheless, as vehicle emissions and air quality do impact on local health - irrespective of how low actual emissions are - there is a need to guard against increased traffic/vehicle levels. Reference was also made to the effect of cigarettes on air quality. The working group was advised that a study carried out in the 1990s had shown that indoor air pollution levels - principally caused by smoking and gas cookers - were up to ten times higher than those of outside air.
39. In addition to the work being undertaken with local authorities, the PCT is working with its own 7,000 employees to promote not only healthy living but schemes such as car sharing. For example a computer package is being developed to match up possible car sharing partners.

Health Trends Associated with Air Pollution

40. Professor Peter Kelly - Executive Director of Public Health, NHS Middlesbrough - was invited to a working group meeting to comment on the above issue. Members were interested to ascertain whether improvements in air quality have been reflected in an improvement in local rates of respiratory disease.
41. Professor Kelly made comment on a number of relevant issues. Having had sight of the information previously submitted to the working group, he confirmed that he had been involved in the local study involving Professor Pless-Mulloli (see paragraph 17 onwards) and that factors other than air quality are now the major health risks locally. The 1990s study showed that although harm from pollution was minimal, existing medical conditions could be worsened by small levels of pollutants. This continues to be the case.
42. Further points that were raised by Professor Kelly are summarised as follows:
 - a) The health benefits of improved air quality need to be viewed in the context of the overall improvements in public health which have also taken place.
 - b) Nationally and internationally, increased levels of pollutants such as PM10 have been shown to result in an increase in hospital admissions relating to respiratory disease, particularly for sufferers of existing conditions. Locally, there has not been a great deal of research on this topic as, due to the relatively small size of Middlesbrough, effects locally would not be as measurable due to small numbers of people involved.
 - c) Effects of traffic pollution on those living/working/studying near to busy roads is dependent on duration of exposure, as well as factors such as distance from the road. Any studies relating to this issue would need to consider levels of respiratory sickness and take into account other possible causes, such as lifestyle, living in poor housing or houses with smokers. While 'effect' of illness or disease is easily determined, 'cause' is much more difficult to determine. It was suggested that this could be an issue which warrants further examination by the local health service, particularly in relation to primary school age children.

(Cont....)

- d) It is likely that levels of some industrial diseases, such as asbestosis, may not yet have peaked due to the lengthy timescale (often decades) relating to their development. The region's industrial heritage will continue to impact on health today and tomorrow.
- e) The commitment to improving air quality and local health services must also include a recognition that people must acknowledge that they need to help themselves, such as through lifestyle choices.

CONCLUSIONS

43. Having considered the submitted information, the joint working group reached the following conclusions:

1. The working group's findings represent a 'good news story.' In 1962, Middlesbrough town centre recorded the highest levels of pollution in the UK. There has since been a dramatic improvement in air quality, with current pollution levels about half of what they were 15 years ago. Middlesbrough residents now enjoy amongst the cleanest urban air quality in the UK. It is significantly better than all measured air quality standards and, unlike 230 other local authorities, has never required an air quality management area with special measures to reduce traffic and/or industrial emissions. Also, studies have shown no evidence of local air pollution contributing to respiratory or other health problems.
2. Although the current misconception about polluted air is less significant than in the past (for example during the 1990s when a campaign involving local industrialists and the media was undertaken to challenge the misconception), it is essential that the facts about Middlesbrough's clean air continue to be promoted. It is also imperative that work to maintain and further improve local air quality is continued, particularly given the potential problems that poor air quality could cause - especially for the very young, elderly and those already in poor health. Steps such as compliance with guidance issued by bodies such as LACORS are welcomed and illustrate the authority's continued commitment to improving air quality.
3. In health terms, air quality is not being addressed in isolation. As improving air quality also improves health, the Council is working closely with the local health authority - for example to promote reduced car usage and encourage more cycling and walking. These not only offer ways to reduce traffic emissions but produce obvious health benefits. The working group notes, however, that following the recent demise of the Healthy Towns Programme, a new focus is needed to keep active travel high on the environmental and health agendas and to address relevant health issues.
4. Air pollution levels should be kept as low as possible to safeguard health. In Middlesbrough the main pollutant affecting health is secondary ozone pollution, which is a traditional rural pollutant. In terms of greenhouse gas emissions and global warming, reducing carbon dioxide emissions from fossil fuel burning, as from road transport, is vital. Even though Middlesbrough meets all national air quality health standards, road traffic is a significant source of air pollution locally. Emissions could be reduced further with the introduction of car sharing schemes, lower emission engines, alternative fuels and promoting alternatives to the car, as outlined at 3. above. The working group welcomes that measures such as these are to be progressed and implemented through the Council's One Planet Living Action Plan.

5. Further work is needed to determine the effects of traffic pollution on the health of people who live/work/study near to busy roads. The local health service's assistance with any studies relating to this issue would be welcomed.
6. A possible air quality and health issue identified during the working group's deliberations relates to indoor air quality, particularly the effects of smoking and the use of gas cookers. A study carried out some time ago indicated that indoor air pollution levels could be up to ten times higher than those of outside air, principally as a result of these two sources. While the hazards of smoking are well recognised, it is considered that people are generally unaware of the possible adverse health effects of gas cooking.
7. A further issue identified by the working group, based on evidence contributed by experts from the field of public health, is that the area's industrial past, including associated air quality, will continue to impact on local health for some time in the future. It is probable that levels of some industrial diseases may not yet have peaked. Related to this, however is the fact that the area may not yet have realised the full benefits of improved air quality in public health terms and that, in general, public health is improving.

RECOMMENDATIONS

44. Following the submitted evidence, and based on the conclusions above, the Joint Environment and Health Scrutiny Working Group's recommendations for consideration by the Overview and Scrutiny board and the Executive are as follows:
 1. That, in order to build on the significant improvements made to date, the Council's work to improve air quality is continued through ongoing monitoring, enforcement and education. There should also be a particular emphasis placed on the authority acting as a community leader and continuing to develop examples of good practice, such as use of electric vehicles or promotion of their use. Development of the One Planet Living framework provides the ideal opportunity for progress in this area.
 2. That links between improving air quality and improving health (for example promoting reduced car usage and encouraging more cycling and walking) continue to be developed, including partner working with relevant health bodies. This should aim to ensure that any gap created by the demise of the Healthy Towns Programme can be addressed.
 3. That further publicity is undertaken, including highlighting the working group's findings, to continue to dispel the misconception that Middlesbrough has poor air quality.
 4. That indoor air quality issues around the use of gas cookers are publicised, including what can be done by people to minimise any health risks.
 5. That NHS Middlesbrough is requested to undertake work to assess respiratory health trends in primary school children, particularly in respect of the possible effects of vehicle emissions.

ACKNOWLEDGEMENTS

45. The working group is grateful to the following people, who presented evidence during the course of this investigation:

- A Bolton - Highways and Transportation, Environment Department, Middlesbrough Council.
- J Duffield - Community Protection, Environment Department, Middlesbrough Council.
- Dr P Heywood - Locality Director for Public Health, Middlesbrough PCT/Middlesbrough Council.
- Professor P Kelly - Executive Director of Public Health, NHS Middlesbrough.
- Professor T Pless-Mullooli, Prof. of Environmental Epidemiology, Newcastle University.

BACKGROUND AND REFERENCE MATERIAL

46. The following sources were consulted or referred to in preparing this report:

- Report to, and minutes of, the Joint Environment and Health Scrutiny Working Group meetings held on 20 September and 18 October 2010 and 25 January and 27 April 2011.
- LACORS website www.lacors.gov.uk - Report entitled '*A Clean Bill of Health - How Councils' Environmental Protection Work Improves Health and Well Being.*'

COUNCILLOR BOB KERR

CHAIR OF THE JOINT ENVIRONMENT AND HEALTH SCRUTINY WORKING GROUP

Contact Officer:

Alan Crawford
 Scrutiny Support Officer
 Legal & Democratic Services
 Tel 01642 729707.
 e-mail: alan_crawford@middlesbrough.gov.uk