



A Review of Air Quality in Southampton

Scrutiny Panel



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Chair's Introduction



Councillor Christopher Hammond Chair of the Air Quality Inquiry Panel (2014/15)

This Inquiry's remit was established soon after the World Health Organisation (WHO) published an update of its Ambient Air Pollution in cities report. It named Southampton as one of the worst cities in the UK to be breaching air pollution safety guidelines.

The Department of Transport estimates that the health impact from motorised transport costs £50 million in Southampton alone, with long-term exposure to polluted air causing 110 deaths a year in our city. The main cause of pollution is from a variety of motorised transport.

Evidence to this panel showed that pollution levels of just 18µg /m³ takes on average of 7-8 months off our average life expectancy. It comes as no surprise that Public Health England, is urging local authorities to do more to protect people from harmful air pollution.

Throughout the Inquiry, we've heard evidence from various departments within the council, the two main bus operators, two port companies, resident groups and an independent air quality expert who has advised Defra and the EU. We found evidence of good schemes initiated by the council such as; My Journey, Air Alert Service and the Gyrodrive 'fly-wheel' technology.

Our partners have also made positive steps to lessen the environmental impact of their activities. The bus companies have introduced telematic computers to help operators drive the buses more efficiently and cutting out the engine to reduce vehicle idling. DP World has a strict booking system for HGV's which are given a dedicated time slot to reduce vehicles waiting around.

These are all positive first steps, but that is all they are. It won't make the kind of difference that we need to tackle some of the problems outlined above. We are going to have more vehicles on the road and although the fleet is gradually being greened, there is still a preference for harmful diesel engines.

To tackle and improve the quality of air in our city, will be an enormous challenge which not one party can do alone. We are an industrial maritime port city with a rich history, but we need to become a low emission city, which puts sustainability at the heart of everything we do. This is not at odds with having a thriving local economy.

Independent experts told us that planting certain types of trees, green walls and foliage is the cheapest and most effective way to reduce air pollution. We need to make sure we are planting the right types of trees, but also make sure we tie this to an educational programme in schools, so that our youngest citizens understand the importance of the environment.

The panel recognised that we need to continue to promote modal shift and that our residents need to play their part. We appreciate that this is not an easy thing to do, but it's imperative that we are proactive to stop gridlock and the deterioration in our already polluted air. Residents told us that Southampton isn't a good city to cycle in. This needs to change.

Just under 300 residents responded to our survey about Air Quality in the city, which exceeded our expectations. I would like to thank everyone who took the time to respond, but also to the members of the public who regularly came to the evidence gathering sessions.

We have come up with a set of ambitious, yet realistic recommendations, which will take us further along the road to cleaning up our air. We all need to play our part and work in partnership, otherwise the situation won't change enough. The fact remains; we are breathing in polluted air everyday and it's killing us.

Air Quality in Southampton

Introduction

1. Every year in the UK it is estimated that 29,000 premature deaths are caused by poor air quality¹. Air pollution and its associated effects on society cost England £10 billion per year. This is expected to rise in future years as the number of cars on the roads increases.
2. Data published by Public Health England (PHE)² suggest that in Southampton 6.2% of deaths in 2010 were attributable to air pollution, with long-term exposure contributing 110 deaths amongst those aged 25 years and over 1,280 life years lost. In addition in May 2014, the World Health Organisation (WHO) published an update of its Ambient Air Pollution in Cities report, which named Southampton as one of the worst cities in the UK to be breaching air pollution safety guidelines (specifically for PM 10 – particulate matter).
3. Recognising the importance of air quality in Southampton the Overview and Scrutiny Management Committee (OSMC), at its meeting on 10th July 2014, requested that the Scrutiny Panel undertake an inquiry looking at air quality in Southampton.
4. The OSMC agreed that the inquiry should focus on developing understanding of the issue of air quality in the city and to identify what additional steps can be taken, if necessary, to improve it.
5. The set objectives of the Inquiry were:
 - a. To increase understanding of air quality issues within Southampton.
 - b. To examine the causes and impacts of air pollution.
 - c. To understand the actions being taken to reduce air pollution in Southampton.
 - d. Learning from best practise, to identify ways of improving air quality in the city now and for future generations.
6. The full terms of reference for the Inquiry, agreed by the OSMC, are shown in Appendix 1.

¹ The Healthy Air Campaign <http://healthyair.org.uk/the-problem/>

² Public Health England – Estimates of mortality in local authority areas associated with air pollution <https://www.gov.uk/government/news/estimates-of-mortality-in-local-authority-areas-associated-with-air-pollution>

Consultation

7. The Scrutiny Panel undertook the inquiry over 6 evidence gathering meetings and received information from a wide variety of organisations to meet the agreed objectives. This included experts in public health, air quality, representatives from transport providers, key business partners in the city as well as council officers. A list of witnesses that provided evidence to the Inquiry is detailed in Appendix 2. Members of the Scrutiny Panel would like to thank all those who have assisted with the development of this review.

8. To ensure that resident's views were reflected in the discussions a survey canvassing views was undertaken for the inquiry. The survey ran from 7th August 2014 to 5th September 2014 and received 298 responses from across the city. The number of responses received was in excess of expectations and gives a clear indication of the level of interest in air quality in Southampton.

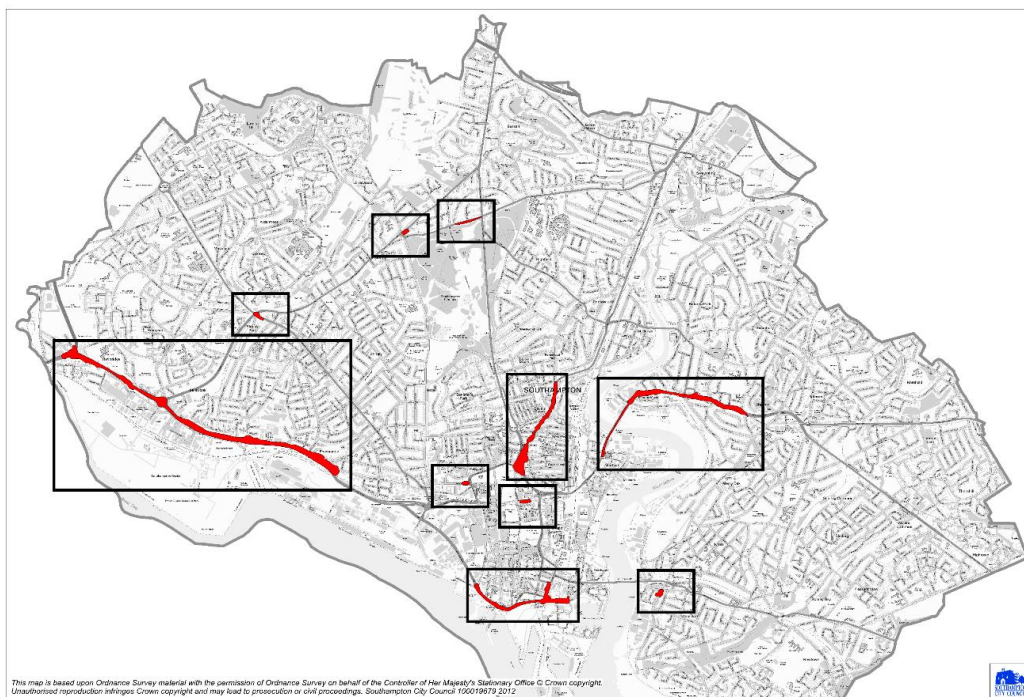
Findings

9. This section of the report will provide an overview of the key findings generated by the inquiry. The key evidence presented at the 6 evidence gathering meetings is attached as Appendix 3. All of the reports and minutes from the inquiry meetings can be found here:
<http://www.southampton.gov.uk/modernGov/ieListMeetings.aspx?CId=595&Year=0>

Air Quality in Southampton

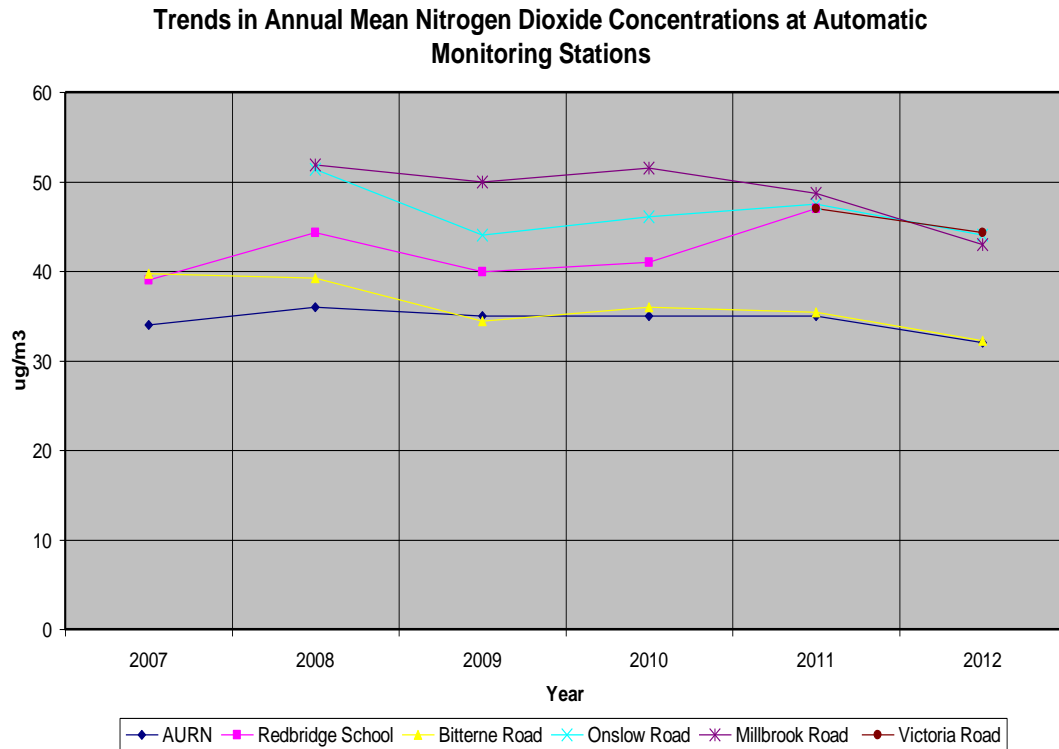
10. Southampton City Council's Regulatory Services monitor air quality at key locations across the city in order to fulfil the council's Local Air Quality Management (LAQM) duties as set out in Part IV of the Environment Act 1995.
11. The LAQM process requires all local authorities to regularly review and assess air quality in their areas, and to determine whether or not air quality objectives are likely to be achieved. Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.
12. Over 200 local authorities have declared AQMAs in the UK. Southampton currently has ten AQMAs declared, each one as a result of the annual mean for nitrogen dioxide (NO₂) exceeding the EU limit value of 40 µg /m³. A map highlighting the AQMAs in Southampton is shown in Figure 1 below.

Figure 1 – Air Quality Management Areas in Southampton



13. Nitrogen dioxide levels in Southampton are broadly comparable to similar cities. Within the AQMA's levels range from 40 ug/m³ to 51 ug/m³ annual average. Levels have been steady with some evidence of a decline in recent years, as shown in Figure 2 below, but expected reductions in NO₂ levels following the introduction of new engine technology have not been realised and levels remain above the EU objective within the recognised AQMAs. For comparison data collated by European Environment Agency (EEA) from Member States reports the highest UK levels at Marylebone Road in London at 98 ug/m³.

Figure 2



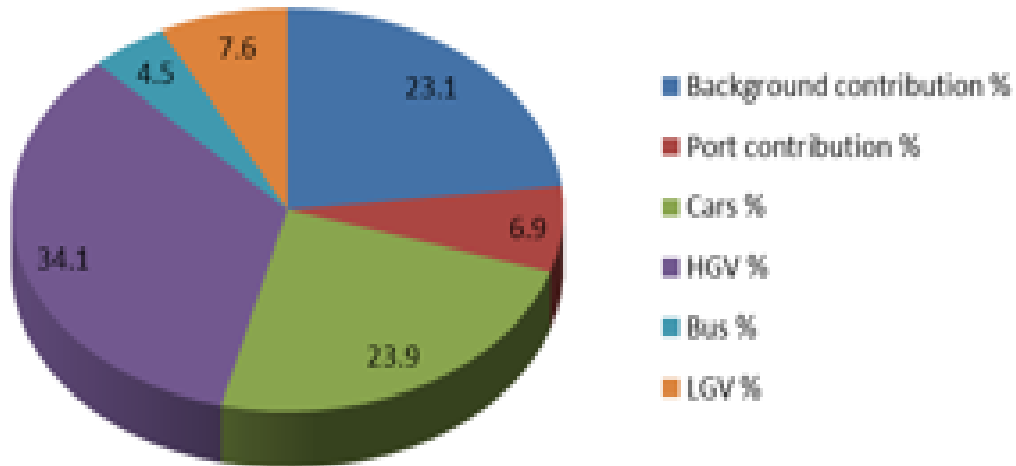
14. In March 2014 the World Health Organisation (WHO) published an update of its Ambient Air Pollution in Cities Database. From this it was reported that Southampton ranked amongst the most polluted cities in the UK and PM₁₀ (Particulate Matter) levels exceeded the WHO guideline of 20 µg/m³ annual average. The WHO guideline level is aspirational. The EU limit value is set at 40 µg/m³ annual average and levels in Southampton fall below this statutory level and well below the European average of 49 µg/m³ and world average of 71 µg/m³. The WHO report used data from a limited number of monitoring sites in varied locations. Pollution levels vary significantly across a city but generally pollution levels in Southampton are similar to other cities in the South of England.

What are the main causes of air pollution in Southampton?

15. As identified within the previous sections Southampton currently has 10 AQMAs declared, each one as a result of the annual mean for nitrogen dioxide (NO₂) exceeding the limit value of 40 µg /m³. As shown in Figure

3, at each AQMA emissions from road transport are the main contributor of the exceedance and the AQMA's capture some of the city's busiest roads and junctions.

Figure 3 - Source apportionment for % of Modelled NOx



16. Over the past decade diesel vehicles have grown from 18% of new cars sold in 2001 to reach 50% of the market in 2012 as successive government schemes have incentivised drivers to buy diesel cars, principally to tackle CO₂ emissions. Diesel vehicles are responsible for significantly higher levels of NO₂ emissions compared to petrol vehicles producing 22 times more particulate matter and 4 times as much NOx than their petrol counterparts³. It is generally recognised that if the proportion of petrol and diesel vehicles remained at 2001 levels the limit value for NO₂ would have been achieved in many of the current AQMA's.
17. Pollution levels vary significantly across Southampton. In 2013 AEA Ricardo were commissioned by Regulatory Services to undertake a study of the city's Western approach, which includes the largest of the AQMA's declared. The study was financed by a grant from DEFRA and was to identify interventions which might be effective in achieving the limit value for NO₂.
18. The report was published in August 2014 and it identified emissions from the Port of Southampton to be far more significant than previously understood. This is shown in Figure 4.

³ [House of Commons Environmental Audit Committee: Action on Air Quality](#) Sixth report 2014-15, para 23

Auto site Millbrook Road % of total modelled NOx

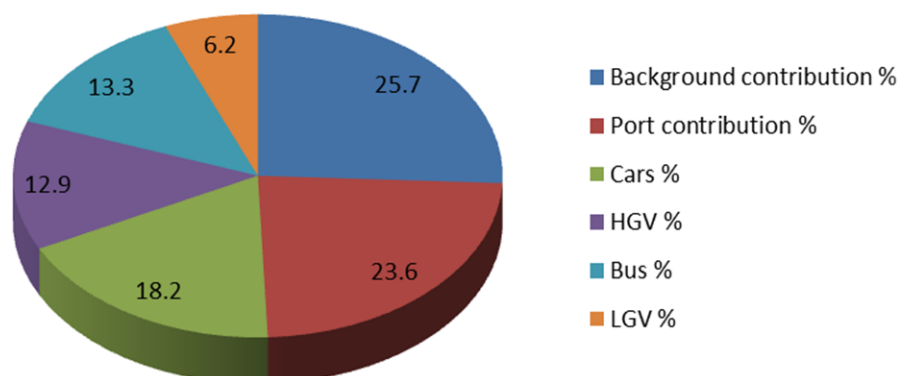


Figure 4

What is the impact of air pollution in Southampton?

Health

19. A recently published Public Health Southampton Intelligence Briefing on air quality and health provides a detailed analysis of the impact that air pollution has on health in Southampton. The briefing reflects information presented to the Panel and has been appended to this report as Appendix 4.
20. Key findings included within the briefing include the following statements:
 - Air pollution is a significant health issue for Southampton, disproportionately affecting our most vulnerable members of society.
 - For NO₂, studies have shown that both day to day variations and long term exposure to NO₂ are associated with mortality and morbidity. Pollutants known to have effects on health are particles, sulphur dioxide, oxides of nitrogen, carbon monoxide and ozone.
 - In a good state of health, short term exposure to moderate levels of air pollution is unlikely to have any serious short term effects.
 - Long term exposure to air pollution does increase the risk of deaths from cardiovascular and respiratory conditions, including lung cancer and existing lung and heart conditions.
 - Evidence of the long term effects of air pollution are most closely associated with levels of fine particulate matter (PM_{2.5}).
 - Department of Transport estimate that health impact from motorised transport for the UK is estimated at £10 billion. The cost to Southampton is estimated at £50 million.

- Modelled estimates of mortality attributable to long term exposure to air pollution suggests that 6.2% of deaths in Southampton in 2010 were attributable to air pollution, with long-term exposure contributing 110 deaths amongst those aged 25 years and over and 1,280 life years lost.
 - Since 2010, Southampton's estimated fraction of mortality attributable to particulate air pollution has declined, from 6.2% to 5.7%. This is in line with a national decrease. 2012 figures show that Southampton's fraction of mortality attributable to particulate air pollution is worse than both the England and South East average of 5.1%. Local cities are also rated better than Southampton, for example Portsmouth 5.3%, Brighton and Hove 5.0%, Bristol 5.2% and Bournemouth 4.1%.
 - Mapping of Chronic Obstructive Pulmonary Disease hospital admissions, asthma hospital admissions and cardiovascular hospital admissions against air quality management areas in Southampton City show close correlation. Those areas in Southampton with the highest pollution levels are also areas where hospital admissions for these indications are highest. These are also areas of significant deprivation and where we would expect health outcomes to be worse.
21. Reflecting the issues identified above Public Health England is now urging local authorities to do more to protect people from harmful air pollution.

Financial Implications

22. In addition to the £50m health costs identified above, UK policy is driven by the European Air Quality Directive which requires Member states to meet limit values for key air pollutants which are known to cause human health effects. Air quality is reported to the European Commission in terms of 43 zones and urban agglomerations. This is handled by DEFRA on behalf of the government and local authority reporting of air quality under LAQM feeds into this.
23. In February 2014 the European Commission started infraction proceedings against the UK for breaching nitrogen dioxide (NO₂) limit values in 16 of its 43 zones. The Southampton agglomeration is one of these recognized zones and the council has received written notification from DEFRA informing them of the infraction process and the potential financial risks this presents. The letter reminds the responsible authorities of the discretionary power in Part 2 of the Localism Act under which the government could require them to pay all or part of an infraction fine if they have not taken reasonable actions to achieve the air quality objectives.
24. The letter indicates that the legal process could take several years to complete and that the Commission has stated that regardless of this it would like to "to achieve full compliance with existing air quality standards by 2020 at the latest."

What action has been taken, or is planned to improve air quality in Southampton?

25. Southampton has a strong track record in delivering innovative approaches to addressing air quality issues in the city. Underpinning the action is a strong evidence base and the Panel were informed by Dr Beth Conlan, Managing Consultant at Ricardo AEA, that the council is good at reviewing and assessing air quality and is aware where hotspots are and what the major sources of pollution are.
26. Southampton's first Air Quality Action Plan (AQAP) was introduced in 2007 and includes measures aimed at improving air quality in the city. The plan has been integrated with the Local Transport Plan and the Local Sustainable Transport Fund (LSTF). To date the Action Plan, containing 48 individual schemes, has focused on transport related projects that will improve the efficiency of the road network and reduce congestion or reduce the burden on the existing road network by promoting a shift to more sustainable forms of transport.
27. The Panel were informed of numerous initiatives led by the council, private sector organisations, and in partnership that should contribute to improving air quality in Southampton. Details of the various approaches are outlined in Appendix 3 and include the following:
 - My Journey – Award winning smarter travel campaign, funded through the LSTF, to encourage modal shift away from the private car towards healthier and more environmentally friendly alternatives. This is essential given the link between air quality and motor vehicles in Southampton. The campaigns Sustainable Travel Programme, has seen a 12% increase in the number of daily cycling trips and reduced daily vehicle traffic by over 3%
 - Air Alert – This service, funded by DEFRA until 2016, enables people who are more vulnerable to air pollution to receive alerts when pollution levels are high in Southampton. Currently there are 201 subscribers to this free council provided service.
 - Sustainable Distribution Centre (SDC) – This facility enables goods to be stored at a distribution centre before being delivered to sites across Southampton.
 - The SDC is forecast to reduce the number of HGV travelling into Southampton City Centre by up to 75%, (potentially 6,900 vehicle movements per annum - excludes HGV travelling to the port).
 - It is hoped that the SDC will reduce Southampton's Carbon footprint by up to 75% and decrease the output of other harmful gases caused by HGVs.
 - The SDC will also reduce congestion in and is not operating at full capacity yet.
 - Travel Plans have been developed for schools and employers in Southampton.

- Road Improvement Schemes – Platform Road and the planned Redbridge Roundabout scheme should help ease congestion.
 - Southampton City Council’s new light goods vehicles and refuse vehicles are fitted with driver monitoring equipment to reduce fuel consumption. They are not currently switched on.
 - Significant investment in new, more efficient bus fleet in Southampton fitted with driver monitoring equipment.
 - 37 buses operating within the city will receive Gyrodrive ‘Fly-wheel’ technology to improve fuel efficiency as a result of partnership working between Southampton City Council, Go South Coast Buses and the Department for Transport.
 - DP World Southampton was the first terminal in Europe to introduce a Vehicle Booking System to help manage the flow of vehicles visiting the port.
 - 36% of containers from the port move inland by rail now. In 2007 this figure was 28%, equivalent to 80,000 less HGVs on the roads.
 - £50,000 funding from Defra has been secured to convert container stacking machines in the Port of Southampton from diesel to natural gas.
 - More efficient cruise liners visiting Southampton.
 - A major taxi firm in Southampton is introducing 15 new hybrid vehicles into its fleet.
28. Despite the innovative initiatives and the new clean engine technology being introduced within the national fleet, the Panel were informed that the 2014 Ricardo-AEA study of the city’s Western approach identified that there were concerns that compliance with NO₂ limits may not be achieved within the 2020 timeframe.
29. The Ricardo-AEA study considered interventions which might be effective in achieving the limit value for NO₂. The study evaluated the potential benefits of establishing a Low Emission Zone (LEZ) to promote the introduction of low emission technology through penalties and enforcement cameras (as operating in Greater London). The study identified that a LEZ could bring compliance dates forward by a few years but would require significant capital investment. Over a ten year period costs would still outweigh benefits by approximately £2M and further economic impacts would be difficult to predict. Again, success would be dependent upon cleaner engine technology delivering the benefits predicted.
30. The study recommended developing and implementing a city wide Low Emissions Strategy (LES) that could be an effective means of promoting low emission technologies, delivering public health benefits and achieving compliance by 2019 without introducing a LEZ. An effective LES could include the following objectives:
- Develop emission reduction strategies for passenger cars, freight, buses and taxis.
 - Develop further innovative retrofit technologies to bus fleets.

- Explore a voluntary 'Low Emission' badge scheme for taxi operators.
 - Build on existing private sector partnerships to achieve shared emission reduction goals.
 - Explore alternative fuel infrastructures for commercial vehicles including LNG.
 - Provide a platform for inward investment for air quality mitigation.
31. Further funding has been obtained from Defra to develop a city wide LES that would sit within the Air Quality Action Plan. It is proposed to deliver the project through a cross-departmental project team sponsored by Regulatory Services over a 24 month period.

What areas need to be addressed or improved?

32. Whilst the Panel recognised the good practice being demonstrated in Southampton to address the causes of air pollution in the city, Members identified a number of areas where improvements can be made.
33. Ambition – The city has a good reputation for delivering innovative initiatives and has been successful in obtaining substantial government funding. The Panel believe that there is an opportunity for the city to be more ambitious in its approach, building on existing partnerships to strive to become a low emissions city. This ambitious goal was widely supported by key partners who were consulted during the inquiry and will strengthen the chances of future transformational funding bids being successful.
34. Co-ordination - It is clear there are more opportunities to raise the profile of air quality even further in council decision making and ensure it is afforded sufficient priority to assist effective cross-departmental working. This will clearly be enhanced by an influential Low Emissions Strategy. The Panel identified Planning, Procurement and Fleet Management as areas where more can be done to support emission reductions.
35. Traffic congestion / idling vehicles – Road transport is the single biggest cause of air pollution in Southampton and despite efforts traffic levels in the city are expected to rise with population and economic growth. The resident's survey identified widespread support for park and ride schemes, investment in cycleways, as well as limiting the idling of HGVs and trains, and ships hotelling (running auxiliary generators when docked at the port) to improve air quality. The Panel also believe that traffic flows in the city, and the corresponding pollution levels, could be improved.

Conclusions and Recommendations

Conclusions

36. After consideration of the evidence presented to them the Panel have reached the following conclusions:
- Air quality is a significant issue in Southampton that has a detrimental impact on health and wellbeing and the environment.
 - A lot of good practice and innovative approaches have been employed in Southampton to address air pollution.
 - Despite technological advances and good practice it is likely that with increased traffic levels, population growth and economic development, including increased activity within the Port, air quality will remain a significant problem in Southampton with associated health and environmental impacts unless more is done to tackle the issue.
 - Southampton can and must do more, taking advantage of the opportunities available, to improve air quality in the city.

Recommendations

37. The Panel have identified a number of recommendations that they believe will, if fully implemented, help reduce harmful air pollution in Southampton and limit the impact on vulnerable members of society. The recommendations have been categorised under the following headings:
- Building on success – Ambition and vision
 - Leading by example
 - Traffic
 - Partnership working
 - Communication

Building on success – Ambition and vision

38. This report outlines a few of the numerous measures that have been employed or are planned to reduce emissions in Southampton. The city needs to build on the successes, deliver the proposed improvements and collectively be more ambitious, seeking funding opportunities where available to achieve the vision of a low emissions city. In support of this the following recommendations are proposed:
- In recognition that road vehicles are the primary source of NO₂ emissions and particulate matter in the city the Panel recognised the importance of encouraging behaviour change towards healthier and more environmentally friendly alternatives. The Panel therefore recommend that:

- (i) ***The Council continues to fully support modal shift initiatives through the My Journey campaign and related initiatives encouraging people to use alternative modes of transport.***
- The Panel reviewed the evidence related to interventions which might be effective in achieving the limit value for NO₂. The Panel agreed that the Low Emission Zone was at this stage not the preferred option and recommend that:
- (ii) ***The Council, learning from best practice, develops a Low Emissions Strategy that articulates the vision for a low emissions city and provides strategic focus to the promotion of low emission technologies and improving air quality across Southampton. This should be overseen by the Health and Wellbeing Board.***
- Funding opportunities are available to areas that have a track record in delivering agreed outcomes and have ambition and vision that supports lowering emissions. Southampton has been successful in securing external funding and, supported by a developing Low Emissions Strategy, should continue to seek grant funding, matched by council resources if required. Therefore, following the canvassing of support from key partners during the inquiry, the Panel recommend that:
- (iii) ***The Council is to continue to seek funding opportunities and submit bids reflecting commitment to a step change in adopting ultra-low emission vehicles, alternative fuels and technologies that will be delivered alongside sustainable transport choices.***
- Evidence to the Panel suggested that the cheapest yet most effective measures for combatting pollutants in the air was by green infrastructure. Southampton should consider a tree planting project similar to what is being undertaken in [Bristol](#), where every primary school child (36,000) has the chance to plant a tree in their city.
- Funding could be explored, and would help alleviate air pollution levels but also give the city a great legacy. Our youngest citizens would learn about the importance of wildlife but also have a physical link to a personal piece of Southampton.
- A less ambitious (and cheaper) option would be to start a tree planting project around Air Quality Management Areas and schools located near these. The Council could source European funding or other funding opportunities.
- (iv) ***The City Council adopts an ambitious green infrastructure planting programme, which is tied in with primary schools to teach children the importance of their environment.***

- (v) ***The Councils Tree Team are to prioritise the re-planting/ planting of trees and other green infrastructure which are known for their pollutant absorbing capabilities.***

Leading by example

39. Local authorities have an important role to play in helping to improve air quality. The Panel recognise the strong working relationships between different council services but consider that opportunities exist for the council to lead by example and ensure that reducing emissions is at the forefront of council decision making. It is therefore recommended that:

- (vi) ***The Council ensures that the aims and objectives within the developing Low Emissions Strategy permeates into the decision making processes so that all relevant plans, policies and strategies give due consideration to air quality.***

- Planning Policy can help to improve air quality by reducing emissions through guiding patterns of development to locations served by public transport, and by mitigating emissions through 'on site' measures such as building layout, ventilation and types of building material; and 'off site' measures such as landscaping and green infrastructure. The Panel were informed of the approach followed by Bradford MDC where planning policy is a key component of their Low Emission Strategy and of examples of 'green landscaping' that can help improve air quality with little expenditure. To ensure that planning policy supports and drives reducing emissions in Southampton it is recommended that:

- (vii) ***The Council use the review of the Local Plan and the development of the Low Emissions Strategy to evaluate how planning policy can be more effective at reducing and mitigating emissions. To include working with Council's Tree Team, the Woodland Trust and others to identify preferred species of trees to absorb pollution, and with developers and partners to prioritise green infrastructure especially near pollution hotspots and green routes.***

- The Council's Fleet Management Service sources vehicles for business units across the Council and spends more than £1m annually on fuel. To reduce fuel consumption and emissions the Panel recommends that:

- (viii) ***The Council follows the lead set by the bus companies and implements the driver monitoring equipment fitted to any light goods and refuse vehicles and recognises drivers who drive efficiently. This is to happen as soon as possible.***

- (ix) ***Eco-Driver training is made mandatory for all employees who drive Council vehicles and existing staff members are to be trained as soon as possible.***
- (x) ***The impact on air quality is factored into the procurement decisions made by Fleet Management Services and the council looks at sourcing ultra-low emission Electric/ Hybrid Vehicles and retrofitting existing petrol and especially diesel vehicles with low-emission technologies. The default position being an ultra-low emission vehicle unless a business case shows otherwise.***
- As the report highlights electric vehicle provision is pretty woeful in the council, both in the respect of internal adoption (fleet operations) and encouraging our residents to consider this option as opposed to polluting diesels and petrol. The public health benefits of Electric car ownership benefit everybody in the city with zero exhaust emissions from the car. The Council should recognise the current high cost of Electric Vehicles and help adoption by granting 2 hour free on street car parking throughout the city. This could easily be adopted by issuing a special coloured parking disk which would have to be displayed:
- (xi) ***To help encourage the adoption of zero emission vehicles in the city the Council should offer free 2 hour on-street parking to vehicles which emit zero emissions i.e. electric vehicles.***

Traffic

40. As a general rule vehicles in free flowing traffic emit less pollution than those in stop-start traffic jams. To improve the flow of traffic in the city the Panel recommend that the Council:
- (xii) ***Ensure that air quality is given due consideration during the current review of the ITS Strategy, (delivered by the Integrated Transport Board). As well as optimising traffic movements, traffic light signal plans, speed limits (including 20mph in areas where stop-start traffic is a problem) and other traffic management applications should be used to deliver improvements in air quality wherever possible.***
 - (xiii) ***Re-evaluates the potential for Park and Ride sites for the city, factoring the public health costs of air pollution into the decision making process. To investigate with partners the ability to develop future sites through the Local Plan process identifying potential capital funding sources as well as commercially viable operation through partnerships with transport operators.***

- (xiv) Prioritise the re-surfacing of cycle routes across the city, starting with main commuting routes, making cycling safer and more appealing through the revision of the Transport Assets Management Plan (TAMP) including seeking external funding to increase the scale and viability of such a programme. Consulting with cycling groups on new and existing routes.**
- (xv) Seek to influence the idling policies of key transport operators within the city, including port activity, trains, buses, taxis and HGVs, to minimise emissions caused by engines idling.**

Partnership Working

41. It is clear the city has benefited from additional funding as a result of good partnership working taking place across the city between the Council and other key stakeholders including ABP, DWP and bus companies. Evidence presented to the Panel highlighted the need to focus on port activities to reduce emissions from actions such as ship hotelling, identified as a major polluter in the Ricardo-AEA Western Docks study. The Panel were informed that ports in Germany and California use shore power technology to power ships when in port, thereby removing the emissions caused by ship generators. The Panel recommend that:

(xvi) The Council work in partnership with key stakeholders to assess the feasibility and eventual introduction of shore power technology at the Port of Southampton.

(xvii) The Council is to, with support from other Port cities, write to the MPs of the City and the DfT to encourage the adoption of shore power across the UK.

- Use of the Sustainable Distribution Centre can reduce the number HGVs coming into the city, relieve congestion and lower emissions. It is recommended that:

(xviii) The Council encourages partners to make greater use of the Sustainable Distribution Centre.

Communications

42. The results of the Air Quality survey demonstrated that people are interested in receiving information on air quality in the city. The Air Alert service enables people who are more vulnerable to air pollution to receive alerts when pollution levels are high in Southampton. Currently there are 201 subscribers to this free service and 75% of subscribers felt that the service improves their wellbeing. However, funding from DEFRA for this service is due to cease in 2016. The Panel recommend that:

(xix) The Council explore opportunities to integrate the Air Alert service with other information/messaging and health alert

services, such as cold and heat alerts, and consider how user friendly air quality information can be communicated to a wider audience through existing channels such as Stay Connected.

(xx) The Council looks at innovative ways to measure air quality across the city.

43. Finally, Members of the Panel recognise that whilst the Council has an important role to play in improving quality in the city, it is clear this cannot be done in isolation. A change of mind-set for all is needed.

Appendices

Appendix 1 – Inquiry Terms of Reference

Appendix 2 – Inquiry Plan

Appendix 3 – Summary of Key Evidence

Appendix 4 – Public Health Southampton – Intelligence briefing on Air Quality and
Health

Appendix 1 – Terms of Reference

Air Quality in Southampton

Terms of Reference and Inquiry Plan

1. Scrutiny Panel membership:

- a. Councillor Christopher Hammond
- b. Councillor Hannah Coombs
- c. Councillor Steven Galton
- d. Councillor Cathie McEwing
- e. Councillor Brian Parnell
- f. Councillor Asa Thorpe
- g. Councillor Paul O’Neil

2. Purpose:

To develop understanding of the issue of air quality in Southampton and to identify what additional steps can be taken, if necessary, to improve it.

44. Background:

- In May 2014 the World Health Organisation (WHO) released a report, which named Southampton as one of the worst cities in the UK to be breaching air pollution safety guidelines (specifically for PM 10 – particulate matter).
- The main cause of air pollution in the UK is emissions from motor vehicles. In Southampton additional sources of air pollution include industrial emissions, shipping emissions as well as airflow from the continent.
- Local authorities have an important part to play in helping to improve air quality. This includes coordinating local assessment and action; taking air quality into account when undertaking transport functions, ensuring the planning system is deployed to limit deterioration of air quality (or exposure) and where possible to improve air quality and promote the public health benefits of good air quality.
- Provisions in the Localism Act allow the Government to pass down fines from the EU to a local level. Defra has indicated that it intends to do this if Air Pollution targets are not met. In addition Public Health England (PHE) is now urging local authorities to do more to protect people from harmful air pollution.

45. Objectives:

- To increase understanding of air quality issues within Southampton

- To examine the causes and impacts of air pollution
- To understand the actions being taken to reduce air pollution in Southampton
- Learning from best practice, to identify ways of improving air quality in the city now and for future generations.

46. **Methodology:**

- Undertake desktop research
- Seek stakeholder views, including through use of social media
- Identify best practice

47. **Proposed Timetable:**

Six meetings July/August 2014 – December 2014/January 2015

48. **Inquiry Plan** (subject to the availability of speakers)

Meeting 1: Thursday 31st July

- Introduction, context and background – Overview of air quality in Southampton and national comparison.

To be invited:

- Lead Cabinet Member
- Independent expert
- Environmental Health

Meeting 2: Thursday 18th September

To examine the impact of poor air quality.

- Public Health
- Residents perspective

To be invited:

- Public Health
- Residents Groups, including Western Docks Consultative Forum

Meetings 3 & 4: Thursday 23rd October and Thursday 20th November

- To identify the causes of air pollution in Southampton, the areas worst affected, and the actions that are being taken, or are planned to address air quality in Southampton.

To be invited:

- Transport for South Hampshire (TfSH)

- ABP
- DP World
- Bus Companies
- Meechers Global Logistics (Sustainable Distribution Centre)
- Council Officers from Transport, Environmental Health, Sustainability, Planning, Licensing

Meeting 5: Thursday 18th December

To identify best practice

To be invited:

- Defra
- SusTrans
- Other local authorities

Meeting 6: Thursday 22nd January

- To approve the final report of the inquiry and recommendations

Appendix 2 - Inquiry Plan – Air Quality (July 2014 – March 2015)

DATE	MEETING THEME	TOPIC DETAIL	EVIDENCE PROVIDED BY
31/07/13	<p>Agree Terms of Reference</p> <p>and</p> <p>Introduction to the Inquiry</p>	<p>Introduction, context and background – Overview of air quality in Southampton, the causes and a national comparison.</p>	<ul style="list-style-type: none"> • Councillor Jacque Rayment (Cabinet Member for Environment and Transport) • Steve Guppy, (Scientific Team Leader, SCC) <p>Items appended to reports:-</p> <ul style="list-style-type: none"> • Inquiry draft Terms of Reference • Background information
18/09/14	<p>Public Health and a residents perspective</p>	<p>To examine the impact of poor air quality.</p>	<ul style="list-style-type: none"> • Debbie Chase (Consultant in Public Health, SCC) • Fiona Davey (MSc student, University of Southampton) • Chris Hinds and Michael Clark (Western Docks Consultative Forum – Residents group) • Residents survey results (Transformation and Performance, SCC) <p>Items appended to report:-</p> <ul style="list-style-type: none"> ○ Air Quality in Southampton – Public Health background information ○ A Health Impact Assessment of Air Pollution in Southampton: Dissertation summary ○ Residents survey results (conducted by SCC)
23/10/14	<p>The Port of Southampton and the</p>	<p>Action being taken by the Port of Southampton, Go</p>	<ul style="list-style-type: none"> • Aart Hille Ris Lambers (Head of Commercial, DP World Southampton)

DATE	MEETING THEME	TOPIC DETAIL	EVIDENCE PROVIDED BY
	bus companies	South Coast and First Bus or that are planned to improve air quality.	<ul style="list-style-type: none"> • Rod Figg (Compliance Officer, DP World Southampton) • Andrew Wickham (Managing Director, Go South Coast – Blue Star and Uni Link buses) • Marc Reddy (Managing Director, First Bus Hampshire, Berkshire and Dorset) <p>Written information provided by: -</p> <ul style="list-style-type: none"> ○ Sue Simmonite (Development and Environment Manager, Associated British Ports) and DP World Southampton – joint paper ○ Gary Whittle, Commercial Director - Meachers Global Logistics – Sustainable Distribution Centre
20/11/14	Southampton City Council	The Panel will consider how effective the council is working together to address air quality in Southampton.	<ul style="list-style-type: none"> • Graham Tuck, (Regional and Strategic Planning Co-ordinator, SCC) • Colin Rowland, (Waste, Fleet and Sustainability Manager, SCC) • Steve Guppy, (Team Leader, Scientific Service, Environmental Health, SCC) • Neil Tuck, Local Sustainable Transport Fund Programme Manager, SCC) • Philip Marshall, Solent Transport <p>Written information provided by:-</p> <ul style="list-style-type: none"> ○ Submission to Air Quality Scrutiny Panel: Planning Policy – Graham Tuck ○ Submission to Air Quality Scrutiny Panel: Fleet Services (Sustainability) – Colin Rowland ○ Solent Transport – Air Quality ○ Air Quality in Southampton – Background information

DATE	MEETING THEME	TOPIC DETAIL	EVIDENCE PROVIDED BY
			<p>(re-submitted from mtg 1) – Steve Guppy</p> <ul style="list-style-type: none"> ○ Submission to Air Quality Panel: Licensing – Phil Bates, Licensing Manager, SCC <p>Other items appended to the report:-</p> <ul style="list-style-type: none"> ○ Air Quality in Southampton – Ricardo AEA – Dr Beth Conlan ○ Western Approach AQMA air quality assessment– a baseline study to support the Low Emission Zone feasibility assessment and development of mitigation measures
18/12/14	To identify best practice	Independent air quality expert invited to give overview of Western Approach Study and comment on possible areas the Panel may wish to address	<ul style="list-style-type: none"> • Dr Beth Conlan (Managing Consultant, Ricardo-AEA) – independent air quality expert <p>Other Items appended to report:-</p> <ul style="list-style-type: none"> • The Woodland Trust – Urban Air Quality report
22/01/15	Review additional written evidence and to summarise the inquiry's evidence and highlight emerging recommendations.	The Panel will discuss written information provided by other stakeholders in the city.	<p>Written information provided by: -</p> <ul style="list-style-type: none"> ○ Freightliner – Hans Clemens, Group Environment Manager ○ South West Trains – Phil Dominey, Stakeholder Manager ○ Royal Caribbean – Tavia Robb, Corporate Responsibility and Sustainability Communications Department

DATE	MEETING THEME	TOPIC DETAIL	EVIDENCE PROVIDED BY
			<ul style="list-style-type: none"> ○ Carnival UK – Dave Smith, Deputy Environment Manager <p>Other items appended to the report: -</p> <ul style="list-style-type: none"> ● Dr Alan Whitehead MP – Southampton Test MP & Member of House of Commons Environmental Audit Committee – written evidence
19/03/15	Agree final report.	Approve report for submission to Overview and Scrutiny Management Committee	N/A

The minutes for each meeting and the evidence submitted to the Scrutiny Panel is available at: - <http://www.southampton.gov.uk/modernGov/ieListMeetings.aspx?CommitteeId=595>

Appendix 3 – Summary of Key Evidence

Scrutiny Panel – Air Quality

Inquiry Meeting – 31 July 2014

Introduction, context and background – Overview of air quality in Southampton.

Summary of information provided:

Cabinet Member for Environment and Transport, SCC – Councillor Jacque Rayment

- Corporate responsibility for Air Quality with Cabinet welcoming the inquiry.
- Have been working on Air Quality for some years now, it is not new.
- Air Quality cuts across a number of Portfolios, including Planning, Sustainability and Public Health. Cabinet Members work together to see what can be achieved collectively as they see Air Quality weaved into a number of priorities.
- Have been recently discussing the Air Quality Action Plan. This included having discussions around a Low Emissions Strategy (LES) and a Low Emission Zone (LEZ).
- The City has a vibrant Port, the City needs this. – Would like the Panel to find solutions to any problems, by finding a good balance between Air Quality and the Ports.
- SCC has a good working relationship with the bus companies, with First Bus bringing real improvement to their fleet and Uni Link / Bluestar in the process of introducing the new fly-wheel technology to their fleet – true partnership working.
- Hopes the Panel can recognise some of the good work that is already happening.

Scientific Team Leader, Environmental Health, SCC – Steve Guppy

- The Regulatory context includes EU Air Quality Directive 2008/50/EC, The Environment Act 1995 and The Air Quality (England) Regulations 2000.
- LAs have to make reasonable efforts to achieve limits set under the EU Air Quality Directive, the Government are required to ensure that objectives are met. Fines can now be passed down from Government to LAs breaching limits.
- The main driver when setting limits is to prevent harm to public health.
- The Local Air Quality Management regime (LAQM) dictates how LA's assess air quality.
- LAQM describes a rigorous assessment process, operating on a 3 year cycle since 2000. Currently in 5th round. Identifies areas where air quality may be an issue then focuses on these geographical areas with more detailed assessments.

- Over the past 15 years, monitoring has included a network of diffusion tubes (equipment used to record monthly averages of nitrogen oxides) at various changing locations in the city.
- Currently there are 4 monitoring stations operating across the City measuring real time data for a range of pollutants. Four further sites have been subject to continuous monitoring since 1999.
- Stations have previously closed, as SCC is constantly refining the monitoring process. If residents groups were to take on the monitoring equipment at closed stations the cost of annual monitoring would be in excess of £10k plus officer time.
- The EU limit for maximum levels of NO_x is 40ug / m³ annual average. The world average has been reported as being as high as 71ug / m³ mg.
- Southampton is currently exceeding the annual average of pollutant, NO_x, with HGVs, cars and Port activity all being contributors. The apportionment for % of modelled NO_x will vary at each monitoring station across the city.
- Trends since 2007 were averaging 45mg- this has dropped and is now a little over 40mg. Improved vehicle engine standards have helped decrease levels but not as good as initially expected. Diesel vehicles have significant more harmful pollutants than their petrol counterparts.
- Monitoring Station data has historically focused on NO_x as the LAQM regime is driven by public health matters. SCC has good baseline data and is pretty confident that other pollutants such as sulphur dioxide and PM (Particulate Matter) are not presenting major problems.
- Funding received with DEFRA working with SCC to conduct a feasibility study that looked into introducing a LEZ near the Western Approach - it generally looks unfeasible because it could well bring a loss circa £2million.
- The Western Approach modelling does take into account the rail road in addition to the HGVs/ transport and dock activity.
- Modelling suggests that data with new technology being introduced the city *could* potentially achieve the EU directive limit by 2019.
- It must be noted with caution when comparing levels other LAs, because all areas contain different data for different reasons. Cannot compare like for like but levels in Southampton are considered to be typical for similar cities.
- The dangerous air pollutant PM (2.5) can contribute to premature deaths. Road transport does impact on Public Health. Southampton has an industrial past, and general respiratory and poor air quality will also contribute to figures.
- The Panel felt they would need to know the number of total deaths in Southampton to be able to gain a better understanding of the impact. Public Health are invited to a future inquiry meeting.
- SCCs Air Quality Action Plan (AQAP) has been established and has a main focus of addressing the pollutant levels. With 48 individual schemes being recognised with the AQAP including aiming to address sustainable transport via modal shift projects such as My Journey, road improvement schemes (Platform Road), Port Masterplan Actions (e.g. HGV booking system) and Private Sector Partnership (e.g. Freight Consolidation Project – ensuring movement of goods).
- The AQAP has also introduced Air Alert – communicates incidences of poor air quality in the city with 220 subscribers. 75% of Air alert subscribers felt that the service does improve their wellbeing.

- The AQAP recognises fleet improvements and the city has recently been successful in funding from the Clean Vehicle Technology fund.
- Proposing the need for a Low Emission Strategy (LES) – city wide. To help deliver public health benefits across the city and assist with ensuring the EU limit values are achieved within an acceptable time frame.
- The Government are promoting various funding programmes. This include the Ultra-Low Emission City Status where 2 – 4 cities in the UK will benefit from significant investment. It will be competitive and LAs with an existing LES stand a better chance. Southampton already has good working relationship with DEFRA, SCC would be a good position to apply.
- As part of the Red Tape Challenge government are assessing the LAQM regime. The outcome of a recent consultation is expected this summer. Expecting that changes will relieve the burden on review and assess (monitoring and reporting) and focus on action planning to deliver improvements.

Conclusions from meeting:

- SCC is delivering its statutory requirements with regard to the Local Air Quality regime i.e. reviewing and assessing key pollutant levels within its area.
- SCC has identified 10 AQMA's as part of this process and has an active and comprehensive Air Quality Action Plan.
- Air quality is improving but there is scope to improve further. A Low Emission Strategy is considered by Regulatory Services as the most effective way to deliver further improvements.
- Continuous improvements (beyond statutory requirements) will deliver public health benefits.

Inquiry Meeting – 18 September 2014

To examine the impact of poor air quality.

Summary of information provided:

Consultant in Public Health, SCC – Debbie Chase

- Public Health England and local respiratory expert contributed to the Public Health background paper submitted as evidence for the inquiry.
- Nitrogen Dioxide (NO₂) contributes to respiratory and cardiovascular diseases, with children, elderly and those with existing conditions being most at risk of poor air quality.
- No currently available evidence of a threshold where air pollution has no effect on health and only starting to learn to evidence the impact. Evidence on health impact is increasing.
- Public Health England estimates that 6% of deaths in Southampton (2011) are attributable to long term exposure to air pollution, with approximately 1,280 associated years of life lost. This level is worse than both the England and South East average (5.1%)
- Evidence is building worldwide that Chronic Obstructive Pulmonary Disease (COPD) is expected to increase over coming years. 2% of residents in Southampton sufferer from COPD.
- The number of Asthma sufferers in Southampton (6.1%) is similar to England figures (6%).
- Cross analysis of Air Quality Management Areas and areas of social deprivation show a higher number of hospital admissions related to respiratory conditions in areas of social deprivation.
- Department of Transport estimate that air pollution and its associated effects on society cost England an estimated £10 billion per year. The cost to Southampton is estimated at £50 million.
- Public Health praised the councils ongoing work with schemes such as My Journey and the Air Alert system both helping towards a healthier Southampton. The promotion of walking and cycling has additional health benefits.
- Improving air quality is considered a priority, heart and lung disease are significant health issues in Southampton with air pollution causing 1 in 15 deaths.
- Important that any future work is joined up and key partners, internal and external work closely together. A Low Emission Strategy could help deliver this vision.

MSc Public Health course student, University of Southampton – Fiona Davey

- Conducting research into the health impacts of air pollution in Southampton and will share final report when complete.
- Preliminary findings recommend a number of interventions to improve air quality.

- Planting of Silver Birch trees could reduce NO₂ by 40% through absorption of the pollutant through its leaves. Partnership working could be done with schools community groups to promote National Tree Week and plant more trees.
- Literature review has evidenced that exposure to poor air quality impacts on various serious health conditions and even loss of life.
- Focus group results evidenced that cycling safety was important for modal shift to take place. The need for cycle lanes on all new roads and possible use of NO₂ absorbing materials should be embedded within Planning policy.

Resident feedback - Western Docks Consultative Forum (WDCF) – Chris Hinds and Michael Clarke

- WDCF represent residents living or working in the vicinity of the Western Docks. The group have expressed concern about the high level of pollutants, which have been heightened by recent press reports.
- Residents felt that road vehicles are major causes of air pollution, and significant contributors are diesel engines.
- The M271 leading to Redbridge roundabout and the Redbridge to Millbrook road is of concern. Both roads have the majority of Heavy Goods Vehicles (HGVs) accessing the docks and are heavily congested during peak times.
- Ministry of Transport data shows a 61% increase in HGV traffic on the M271 to Redbridge roundabout over the past 14 years with the largest increase over the past 3 years.
- Growing concerns around developments concentrated in one area and their impact on air quality.
- There is a need to reduce pollution created by ships in port. Many ships in port at any one time with engines running has a cumulative effect on air quality.

Ways to improve air quality

- To improve the control of HGV on roads leading to docks and encourage HGVs, buses, taxis and coaches not to idle when stationary for an extended period.
- To introduce a Park & Ride service, possibly serving both Eastleigh and Southampton.
- Encourage the use of low emission transport and the improve cycle lanes making it more appealing and safer for commuters.
- Reduce speed limits within the city, especially on Millbrook Road and side streets.

Residents Air Quality survey feedback

- A survey created to canvass resident's views on air quality in Southampton.
- Ran from 7th August 2014 – 5th September 2014. 298 responses received, from residents across the city. This was in excess of expectations and shows that air quality is important to Southampton residents. Limitations of the survey must be noted due to its self-selecting nature.
- More than half (59%) of respondents felt that air quality in Southampton was quite a significant issues to them.
- Cars, HGVs, buses and shipping and other port based activities were the most popular choices when respondents identified contributors to the city's air

quality. Sewage works, bonfires, airport and associated air craft were also highlighted as contributors. 44% respondents felt that cars are the main contributor to air quality, with HGVs (20%) second most popular and industry, including shipping/ ports (10%) third most popular.

- There was a correlation between concerns about levels of pollution from the ports and sewage works and the views of those living nearest these locations.
- 59% of 294 respondents felt air quality in the city has worsened in recent years, whereas in contrast 4% felt it had improved. With 19% feeling it had remained the same and 18% simply not knowing.
- Residents suggested a number of ideas on ways to improve air quality in Southampton, which included –
 - Introduce 20mph across city in residential areas
 - Public transport – review fares, networks and introduce eco-friendly buses
 - Introduce 'No idling zones' - other LAs have done this.
 - Increase planning controls on high polluting industries
 - Introduce a Park & Ride service
 - Air quality data needs to be more accessible
 - Improve green infrastructure across city to help absorb harmful pollutants
 - Encourage cycling – improve routes/ introduce cycle hire scheme

Conclusions from meeting:

- Whilst the evidence base is still building, it is clear that poor air quality does have an impact on public health with the elderly, children and those with pre-existing respiratory conditions being most at risk.
- Public Health recognise the importance of future joined up working across the council, to help address air pollution. Implementing a Low Emission Strategy could be the way to achieve this.
- It is evident that residents have an interest in air quality in Southampton and there have been some innovative ideas on ways air quality could be improved. Whilst some ideas would need further exploration, others could potentially be effective low cost effective in tackling air pollution and the way residents receive information on air quality in their area.

Scrutiny Panel – Air Quality

Inquiry Meeting – 23 October 2014

Summary of information provided:

The Port of Southampton

Commercial Director, DP World Southampton – Aart Hille Ris Lambers and

Compliance Officer, DP World Southampton – Rod Figg

- Operate the container terminal at the port and see on average 75 trucks per hour. With peak times at 1pm-4pm these differ from the usual commuting traffic.
- 36% of containers move inland by rail. In 2007 this figure was 28% - equivalent to 80,000 less trucks on the roads. DPWS are keen to develop the rail as it has less impact on the environment. Customers choose how they would like their goods transported (HGV or rail).
- Freightliner has invested in new cranes and are looking at trials with straddle carriers supported by SCC. Hybrid carriers in the past have not been economically viable.
- Ship companies are investing in bigger and more fuel efficient ships – 50% of the volume imported/ exported is carried out by large ships less than 2 years old.
- Sulphur Emission Control Areas (SECA) are introducing stricter guidelines throughout the English Channel. Marine gas oil has less polluting factors.
- Southampton is visited by cleaner vehicles as the Low Emission Zones in London are having a knock on affect.
- Have previously explored ship-to-shore power, but it was not possible because there is no standards. Meaning that there is no one specific connector – there is no clear solution and it is not likely to happen in the near future.
- Vehicle Booking System- Hauliers book a time slot for loading/ unloading. If a vehicle is not booked in them they cannot deliver/ unload.
- When vehicles arrive early at Dock Gate 20, drivers can phone/ go online to see if there are early appointments available but the onus is very much on the driver to be proactive.
- Idling Zones – HGV drivers are strictly monitored by the haulage companies – as it is not economically viable to leave engines running. It could be a perception that vehicles are idling when queuing.
- HGV parking outside docks waiting is an issue – need an alternative to park. Space is limited on the perimeter of the docks.
- In principle, DPWS are keen to support SCC in a bid for ‘Ultra-low Emission Status’ – this would need further exploration in the future.
- The support of community projects, or possible funding of Air Quality Monitoring Stations would need further exploration and would need to be viable for the business.
- Howard Tenens are working on the LNG (Liquid Nitrogen Gas) for HGVs.

Bus companies

Managing Director, Go South Coast (Blue Star and Uni Link) - Andrew Wickham

- Vehicle engine emission standards are becoming stricter. Euro VI will be introduced in the near future. Go South Coast (GSC) fleet currently has Euro

III (62%), Euro IV (6%) and Euro V (32%), this will soon be improved so that 60% meet the Euro V standard.

- GSC are aiming for all of its fleet to meet the new Euro VI standard by end of 2015.
- Newer buses are more efficient and environmentally friendly, they release significantly less harmful pollutants (NOx and PM).
- GSC invest in approximately 50 new buses a year – costing £10m. In 2013/14 Southampton received 35 new buses.
- Gyrodrive hybrid project (fly-wheel technology) – 37 Buses in city to receive technology, focusing on older buses first, first buses soon to be introduced. Total cost of project £1,265,400 (50% GSC, 45% Dept of Transport) and 5% SCC. GSC recognised the good work that SCC has contributed.
- Technology pioneered by Williams F1 Team, buses fitted with new technology are better on fuel consumption when carrying more passengers. The technology works by receiving energy through the bus braking and the energy is then redistributed back into accelerating.
- Telematics fitted to all of Southampton fleet. Staff apprehensive at first but now fully supported by staff and the Unions. Staff recognise the importance of saving on fuel and creates healthy competition between drivers. Since the introduction of the Telematics system GSC have recognised a 3.8% fuel saving.
- Fleet shut down after idling for approx. 4-5mins. This could be programmed to be less time, however this would not be practical.
- Fleet use 10% bio fuel mix and are maintained every 28 days, this includes a calibrated emissions check.
- Introduced a variety of changes to encourage more bus use. These include online ticket sales, a mobile ticket app and inter available ticketing (Solent travel card).
- Have been innovative in the way they attract their customers and they have seen a 7% passenger growth in the past year. GSC has seen a 23% reduction in CO2 per passenger journey since 2008 (for the wider GSC area-not exclusive to Southampton).
- More bus use and less car use is essential. A city centre is good business for buses. Shopping centres based out of the city are not.
- The cheaper the car parking, the less likely people are to use buses.
- There is a need to keep buses moving. Bus lanes and priority at junctions are welcomed.

Managing Director, First Hampshire, Dorset and Berkshire – Marc Reddy

- 111 buses covering Southampton, employing 265 staff and new £14 purpose build depot in Southampton.
- Major investment in fleet – within past two years all meet Euro V engine emission standards. 18 are micro hybrid buses (breaking regenerative energy), and 10 more being introduced soon (subject to Clean Vehicle Technology Fund).
- All buses are fit with free passenger Wi-Fi and have efficient internal LED lighting.
- Average fleet age is 5.6 years, which is better than the Government target (8%).

- Various products created to encourage more bus use, Mobile ticketing, Smartcard and a simplified fare structure has been launched.
 - Have increase frequencies in areas where demand has risen (Millbrook, Townhill Park, Thornhill and Weston).
 - New 'Drive Green' technology assists drivers in improving their driving using a traffic light type system. Drivers get a score at the end of each shift and can see where improvements can be made. This improves driving standards and the Managing Director receives a fleet idling report every week.
 - Each bus seats a minimum of 37 people, could result in 30-37 cars off the road.
 - Partnership working is key and have a good working relationship with SCC.
 - The Council could help by restricting certain types of land use – for example 'pop-up car parks' that appear across the city on land waiting to be developed. These are not helpful as they undermine Council car parks and bus companies.
 - Research has proven that bus users spend money in retail – but these are smaller more frequent spends as opposed to their car driving counterparts who would visit the centre less frequently.
-
- Both Go South and First Hampshire have no plans to introduce electric powered buses any time soon. There are queries around charging and the range. However, there are experiments happening in York.
-
- In principle, both bus companies are keen to support SCC in a bid for 'Ultra-low Emission City status' – this would need further exploration in the future.

Conclusions from meeting:

- It is evident that there are already good effective working relationships between SCC and the Ports and bus companies this has resulted in attracting funding to fund innovative projects/ technologies.
- The Port of Southampton have a high turnover of vehicles visiting the port where their new Vehicle Booking System is helping manage the flow of vehicles. DPWS are keen to develop the rail routes which has already seen an increase in goods moving inland via rail. Shipping companies are investing in newer cleaner ships.
- It is clear that buses serving Southampton are benefiting from advancing technologies aimed at reducing emissions which as a result will have a better overall impact on air quality in the city. Bus companies are constantly improving their fleet and are focused on giving customers good customer service and giving value for money – all of which aims to drive more people to use buses.
- In principle, DPWS, Go South Coast and First Hampshire, Dorset and Berkshire are keen to support SCC in submitting a bid for Ultra-Low Emission City status.

Scrutiny Panel – Air Quality

Inquiry Meeting – 20 November 2014

Summary of information provided:

- 1. Local Sustainable Transport Fund Programme Manager (LSTF), SCC - Neil Tuck**
 - LSTF have two funds: - A Better Connected South Hampshire (Lead Solent Transport) - £24.17M with match funding and Southampton Sustainable Travel City (Lead SCC) – £7.28M with match funding.
 - MyJourney is a smarter travel campaign with friendly and simple branding to encourage local residents cycle, walk or use public transport more often to benefit their health and the environment and reduce local congestion.
 - Evidence based programme using MOSAIC data with an overall aim to increase modal shift by 12%.
 - Projects include free bus passes to help young people attend interviews. 44% are now in employment.
 - Legible networks project - consistent approach across city using easy to navigate signage and information to promote walking and public transport use.
 - Sustainable Distribution Centre project is also part of the programme.
 - Sky Ride is a popular annual event, with 30 local guided road tours over summer.
 - Work ongoing with Sustrans and The University of Southampton and having dialogue with Travel Plan.

- 2. Scientific Service, Team Leader, SCC – Steve Guppy**
 - The Government plan to reach an ultra-low emission vehicle (ULEV) majority by 2050 and have announced a £200M minimum commitment to promote ULEV's over the next 5 years.
 - £35M to be made available to 2-4 cities that commit and agree to a step change in ULEV adoption.
 - Local air quality will be important when evaluating bids.
 - Any bids would need to show real ambition and innovation – potential to become international exemplars and suggested measures could include a ULEV car club, infrastructure for residents and fleet improvements.
 - Further details to be announced imminently.

- 3. Summary of evidence from round table discussion with officers from: -**
 - **Waste, Fleet and Sustainability Manager, SCC – Colin Rowland**
 - **Planning Policy Group Leader, SCC – Graham Tuck**
 - **Scientific Service, Team Leader, SCC – Steve Guppy**
 - **Local Sustainable Transport Fund Programme Manager, SCC -Neil Tuck**
 - **Principle Transport Planner, Solent Transport – Philip Marshall**

Fleet

- The Fleet Management Service (FMS) source vehicles for business units across the council for their required use (i.e. Housing)
- It would be ideal if the FMS could, when sourcing vehicles, give more opportunity for advancing technologies.
- The Council spends over £1M a year on fuel costs.
- The Fleet Management Service are developing a strategy for Fleet.
- Currently the council have one electric vehicle in its fleet – difficulties in implementing the use of vehicles – as requires installing charging points (infrastructure), resource needed to manage bookings and to upscale would need resources.
- New Light Good Vehicles and refuse vehicles are fitted with driver monitoring. Equipment – though not yet switched on – ongoing discussions with Unions. Dialogue needed and is a debate to be had corporately presenting a business case with options.
- Eco-Driver training programme is available for staff who drive SCC vehicles through the My Journey programme – however this is voluntary and is promoted via managers.

Sustainability

- Thornhill District Heating scheme will allow residents to save money on their current energy costs.

Planning

Planning Policy can potentially help to improve air quality in two ways:

- By reducing emissions: Reducing vehicular traffic / encouraging the use of public transport, walking and cycling; by guiding patterns of development, and including policies to support travel plans and appropriate provision for low emission vehicles
- By mitigating emissions: This would include ‘on site’ measures such as building layout and aspect, ventilation and types of building material; and ‘off site’ measures such as landscaping and green infrastructure.
- *Site specific measures* - involve detailed discussions on the design of buildings, the use of planning conditions and ‘s106’ developer contributions. Process of negotiation to determine what is viable, practical and appropriate (eg in design terms) on a specific site. The Local Plan would not set detailed requirements (eg for a particular type of material), as this may vary from case to case. However the Local Plan should set an overall policy requirement to mitigate the effects of air quality to an appropriate level, and could list a variety of ways in which this could be done.
- *Offsite measures* - The Council has set a Community Infrastructure Levy (CIL) whereby residential developers make a contribution of £70 / sq m to fund strategic city wide infrastructure. This rate cannot be varied in the short to medium term and so the Council must determine its spending priorities within this. The Council must also spend the CIL in accordance with a list of types of infrastructure it has specified. However, the existing rate is forecast to generate significant funding over the medium to longer term; the Council can change its list within this rate as it wishes; and in any case the current list

already includes the key strategic measures which would benefit air quality: transport measures and green infrastructure.

- Imminent review of the Local Plan – provides an opportunity to update and strengthen the policies to address air quality.
- Green Space Factor - designed to calculate the 'greenness' of a site.

Air Alert

- Southamptons Air Alert Service is currently funded by Defra until 2016.
- Neighbouring Local Authorities have approached their Public Health colleagues to seek support in funding such schemes.

Conclusions from meeting:

- There is an opportunity on the horizon for Southampton to show its commitment to improving local air quality through submitting a bid to the government's Ultra-low city scheme.
- There are some synergies across departments at Southampton City Council when aiming to reduce emissions and improve air quality. However, it is clear there are more opportunities to raise the profile of air quality even further in council decision making and ensure it is afforded sufficient priority to assist effective cross-departmental working.

Inquiry Meeting – 18 December 2014

Summary of information provided:

Managing Consultant, Ricardo-AEA –Dr Beth Conlan

Low Emission Zone (LEZ) Feasibility Study, Western Approach, Southampton

- Defra encouraged LA's to examine LEZ and Low Emission Strategy's (LES).
- The study looked at 3 possible LEZ scenarios and also a LES.
- Similar studies have been undertaken in other LA areas, though Southampton is slightly different because of its Port activity – dual emissions identified (port and road traffic).
- The study was an economic assessment based on generic government costs which give a way to estimate the damage costs (economic health impact e.g. costs to NHS). In a 'do nothing' scenario it is thought Southampton would comply with targets by 2019.
- There are a number of LEZ models e.g. London model is enforced by cameras – vehicles must be registered. Germany have a national LEZ standard – all cities have to comply to the 'sticker – scheme' model. The UK does not have a national framework.
- A successful LEZ scheme could present costs to the council.
- A LES is an effective route to improve air quality – which could include a number of measures and policies.

Other points from discussion:-

- Bradford Metropolitan District Council is at the forefront of planning guidance for new developments and air quality.
- Oxford limit their LEZ to buses – though in Southampton there is not one outstanding source to target.
- York City Council are advancing with their Low Emission Strategy.
- Southampton is good at the review and assessment process of air quality information. It is clear where the hotspots are and what the sources are and are good at applying for grant funding.
- Speed limits – do have an impact on air quality, though lowering speed limits could have a negative impact.
- New, cleaner, greener fleet? – Bus Quality Partnership have a voluntary scheme – though no national policy regulating buses or HGVs.
- Understanding has increased around green infrastructure. It is clear it can act as a physical barrier and certain species of trees are better for improving air quality –this is not the only answer to improving air quality – need to lower the emissions coming out of vehicle tail pipes.
- Potential for Section 106 funds could support the work within an LES.
- Petrol hybrid vehicles lower NOx and LPG is also an attractive way forward.
- Target cars in LES – incorporate a public campaign to inform residents what vehicles are best to improve air quality etc.
- Ultra- Low Emission City Status? – Partnership is key. Also working with own economic and regeneration team to ensure council 'buy-in' is also fundamental.

- Tackling key sources of emissions from HGVs, Port activity and buses should be a focus for Southampton.
- Focus on partnership working with Public Health colleagues to build relationships internally to allow the message of improving air quality to be communicated effectively.

Conclusions from meeting:

- In conclusion Southampton is recognised as being good at reviewing and assessing air quality information. It is also recognised as having an awareness of its pollution hotspots. In addition, Southampton has a proven track record at applying for grant funding – funding new initiatives aimed at improving air quality.
- A well designed and successful Low Emission Zone could result in costs to the council. A Low Emission Strategy would be an effective way to influence and drive forward city wide policies to improving air quality.
- Finally, focusing on lowering emissions from tailpipes is key and partnership working would be important in a bid for Ultra-Low City Status.

Scrutiny Panel – Air Quality

Inquiry Meeting – 22 January 2015

Summary of Witten information provided:

Deputy Environment Manager, Carnival UK (CUK) –David Smith

- CUK are committed to reducing its environmental footprint and recognise ships visiting the city contribute to the city's economy.
- Exhaust gas cleaner being fitted to many ships – low sulphur or cleaner fuel is used – Southampton is covered by the North Sea Emission Control Area limiting amount of sulphur used in fuel.
- Recently conducted reviews into the use of LNG for ships in port (shore power) as this would be an obvious scheme to help reduce a ships emissions whilst in port.
- Operate an active car share scheme for staff and an accredited cycle to work scheme – offer season ticket loans for staff to encourage use of public transport.
- Meachers Global Logistics provide consolidated ship deliveries on turn around days to reduce number of delivery vehicle movements.
- Will continue to roll out scrubber technologies and Ship Energy Efficiency Management Plans (SEEMP) – to reduce on board energy demands i.e. changing to LED bulbs.
- Dialogue with SCC exists through a forum and in principle would support Ultra-Low Emission City bid.
- Incentive driven car share schemes and encouraging drivers to use public transport and cycle (by improving cycle links) would all help improve air quality in the city.
- Reduce idling time by improving traffic flow – especially out of major dock gates out to M271.

Corporate Responsibility and Sustainability Communications Department, Royal Caribbean Cruises Limited (RCCL) – Tavia Robb

- RCCL ships have been calling at Southampton since 1997.
- In 2015 summer season – 3 RCCL ships will homeport in Southampton.
- Since 2005 progress has been made to reduce overall emissions across fleet. Newer ships are 30-40% more efficient than before 2005.
- Plan to install Advance Emissions Purification (AEP) system (scrubber) technology on Celebrity Eclipse as part of major retrofit programme to 19 ships (between 2015-2017).
- Scrubber technologies remove over 97% of sulphur dioxide emissions generated by a ships diesel engine.
- Operate a 100% waste-repurposing initiative – all solid operational waste offloaded in Southampton is recycled, reused, donated or converted to energy.
- LNG would be beneficial to harbour craft and ferries.

- The use of public transport, coaches, park and ride facilities should be explored and promoted as alternative ways to start/ end cruise experiences.
- At this moment in time not all ships are equipped to use shore-power.
- Shore Power source must be largely emission free – i.e. wind power or thermal power.

Environment Manager, Freightliner Group - Hans Clemens

- Main transport to and from Port is rail – decreasing the number of lorries on the road and scoring 3 – 6 times better than HGVs.
- Freightliner deliver Eco-driving training for train drivers and lorry drivers
- Freightliner operates a 30 min idling policy on its diesel freight trains – policy dated 2007 – and enforced by local terminal manager and Winterisation Policy supersedes.
- Reduced idling is in the interest of Freightliner – reduces footprint on environment and keeps fuel costs down.
- HGV fleet have Euro 5 engines.
- Corporate Social Responsibility Policy highlights their commitment to promote employee wellbeing and support to charities and communities.

Stakeholder Manager, South West Trains – Phil Dominey

- Ongoing trial for new diesel transmission system on one diesel unit – hoped to save 10% on fuel consumption, resulting a reduction on emissions.
- Trains use low sulphur diesel which are appropriately maintained – not practical to shut engines down for stopovers less than 10 minutes – engines shut down after 15 minutes.
- 2015 will see the introduction of the Drivers Advisory System – advises drivers recommended speed to travel.
- Other companies such as First Great Western and Cross Country also operate routes through Southampton.
- There are longer term proposals to electrify the route from Southampton to Midlands allowing freight trains to use electric trains.

Southampton Test MP & Member of House of Commons Environmental Audit Committee - Dr Alan Whitehead MP

- House of Commons Environmental Audit Committee (EAC): Action on Air Quality report has now been published.
- Transport for London state that diesel vehicles produce 22 times as much PM and four times as much NOx as their petrol counterparts.
- Particulate traps on diesel vehicles help reduce pollutants.
- Personal Air Quality monitoring exercise measured black carbon pollution concentrations – journeys on the London Underground and taxi ride in London showed higher pollution levels.
- Many German ports use Shore Power technology – does require ship based technologies but is not useable in Southampton because of lack of equipment Port side.

- If firms and companies were to divert from using diesel main or standby generators this could help improve air quality.
- The effectiveness of Low Emission Zones depends upon limits and conditions put on their implementation.

Conclusions from meeting:

- In conclusion, it can be said that Southampton is benefiting from greener cruise ships visiting its Port. Advancing technologies on board now and those planned will continue to help improve a ships impact on its environment. The city's distribution centre is being utilised for ship deliveries and it has been recognised that shore power would be an obvious scheme to help reduce a ships emissions whilst in port.
- Rail operators impose idling times on their trains aimed at reducing fuel costs, minimising impact on the environment with further eco-trials pending. With long term proposals to electrify the route from Southampton to the midlands this could allow freight trains to use electric trains in this area.

1. Why is this issue important?

Air pollution is a significant health issue for Southampton City, disproportionately affecting our most vulnerable members of society. European legislation sets out a number of requirements to control outdoor levels of pollutants and Local Authorities have a responsibility under Local Air Quality Management legislation to review air quality. Southampton currently has ten Air Quality Management Areas declared, each one as a result of the annual mean for nitrogen dioxide (NO₂) exceeding the limit value of 40 µg/m³.

1.1 What is air pollution and what is its effect on health?

In UK Cities, air pollutants are mainly products of motor vehicle traffic combustion especially from diesel vehicles. Pollutants known to have effects on health are particles, sulphur dioxide, oxides of nitrogen, carbon monoxide and ozone. In a good state of health, short term exposure to moderate levels of air pollution is unlikely to have any serious short term effects. Short term exposure to high levels of air pollutants can cause a range of adverse effects such as exacerbations of asthma, effects on lung function and consequent increases in hospital admissions for respiratory and cardiovascular conditions¹.

Long term exposure to air pollution does increase the risk of deaths from cardiovascular and respiratory conditions, including lung cancer and existing lung and heart conditions. Chronic effects can be triggers of new disease, worsen severity of disease through increase in symptoms or accelerate progression of disease over time. Children, the elderly and people with lung or heart conditions are more susceptible to the health effects of air pollution. People with coronary artery disease are at greater risk of being affected by air pollution, especially particles, than people without such disease. Coronary artery disease, which can remain undetected, is common in older people¹.

Evidence of the long term effects of air pollution are most closely associated with levels of fine particulate matter (PM2.5). Just 18 µg/m³ PM2.5 could be responsible for an average loss of life expectancy from birth of around 2-20 months (average of 7-8 months). This compares to an estimate of around 7 years if all the population were smokers (Department of Health 2001). There is no evidence for a threshold below which health effects would not be expected. For NO₂, studies have shown that both day to day variations and long term exposure to NO₂ are associated with mortality and morbidity.

The public health benefit of a 1µg/m³ reduction in national average PM2.5 concentration is estimated as being an increase in average life-expectancy of around 20 days (range 3 to 40 days)². It is likely that, compared with factors affecting individuals such as smoking, diet and lack of exercise, air pollution has a health impact similar to that of passive smoking. Department of Transport

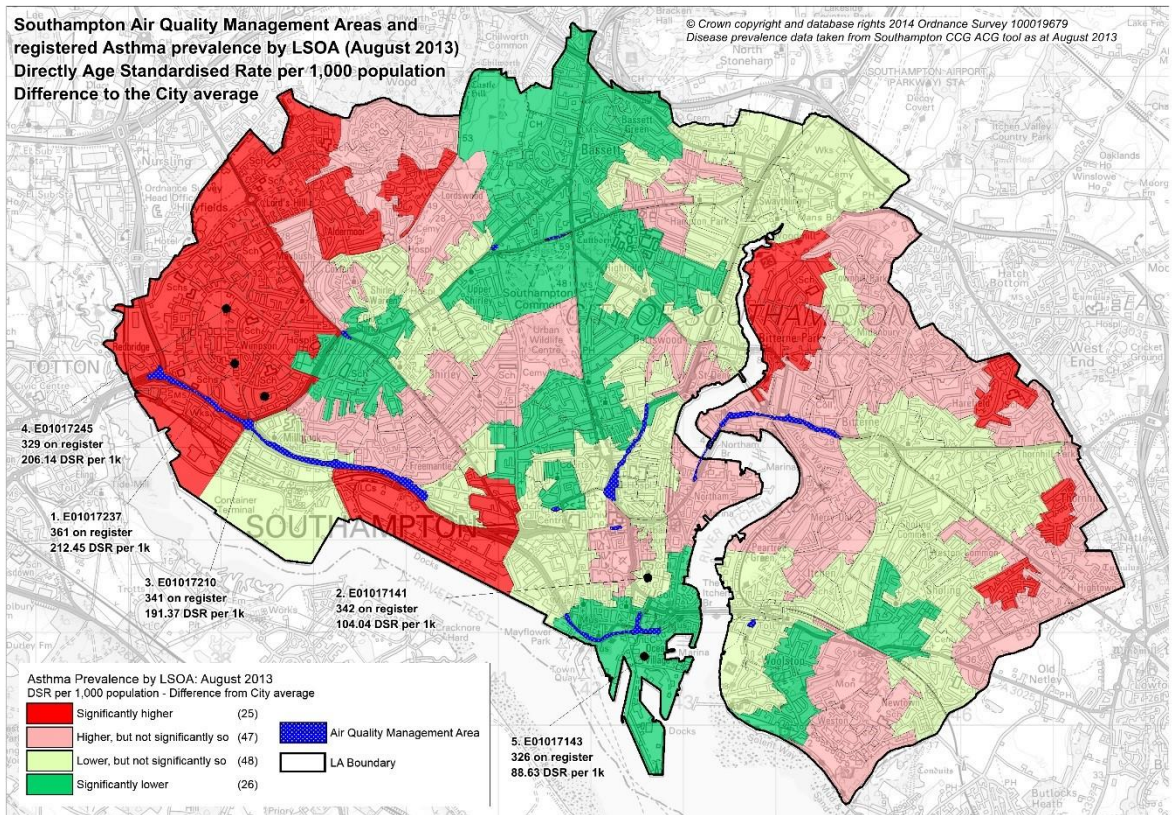
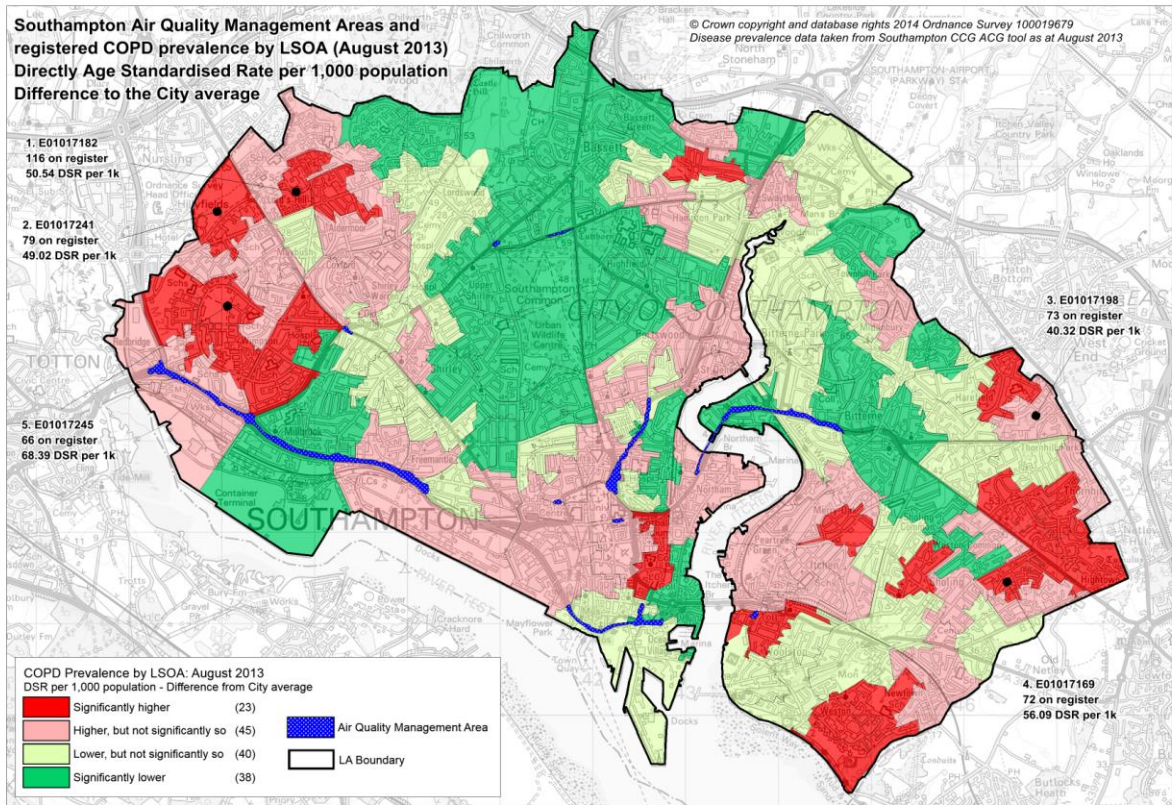
estimate that health impact from motorised transport for the UK is estimated at £10 billion. The cost to Southampton is estimated at £50 million.

What is the situation in our City?

Modelled estimates of mortality attributable to long term exposure to air pollution i.e. annual average concentrations of fine particulate matter (PM2.5) have been published by Public Health England³. These suggests that 6.2% of deaths in 2010 were attributable to air pollution, with long-term exposure contributing 110 deaths amongst those aged 25 years and over and 1,280 life years lost.

Since 2010, Southampton's estimated fraction of mortality attributable to particulate air pollution has declined, from 6.2% to 5.7%. This is in line with a national decrease. 2012 figures show that Southampton's fraction of mortality attributable to particulate air pollution is worse than both the England and South East average of 5.1%. Local cities are also rated better than Southampton, for example Portsmouth 5.3%, Brighton and Hove 5.0%, Oxfordshire 5.1% Bristol 5.2% and Bournemouth 4.1%.

Mapping of Chronic Obstructive Pulmonary Disease hospital admissions, asthma hospital admissions and cardiovascular hospital admissions against air quality management areas in Southampton City show close correlation. Those areas in Southampton with the highest pollution levels are also areas where hospital admissions for these indications are highest. These are also areas of significant deprivation and where we would expect health outcomes to be worse. As previously described, air pollution exacerbates pre-existing conditions. Mapping of Chronic Obstructive Pulmonary Disease and asthma prevalence against air quality management areas also shows some degree of correlation (see below). Opportunities to monitor air quality in areas where respiratory disease prevalence is high would be of benefit.



What can be done?

Public Health England has offered proposals on ways that Local Authorities can improve air quality¹, these are:

- Encouraging schemes like ECOSTARS that recognises excellent levels of environmental and energy saving performance for vehicles that operate within their area
- Introducing intelligent transport systems that maximise efficiency of the highway network and also provide real time information to enable better informed travel choices
- Incorporating air quality into planning considerations for new developments and refurbishments
- Promoting energy efficient and sustainable transport to residents and businesses

What have we done locally?

Work has already been undertaken within the City to raise awareness when air pollution levels are high. The air alert service enables people who are more vulnerable to air pollution to manage the health impact in the event of high pollution levels. This service is free and open to all. There are currently 201 subscribers and 96 air alerts have been issued since June 2010. City air quality actions have focused on transport related projects to improve the efficiency of the road network and reduce congestion.

Recent findings from a study of the City's Western approach suggest that emissions from road transport are the most significant contributor, however emissions from the Port are far more significant than previously understood. A City wide Low Emission Strategy (LES) is being developed. A working group from departments across the council has been established to promote the delivery of existing initiatives and identify new ones. A City-wide emission reduction strategy will be developed for passenger cars, freight, buses and taxis.

What more can we do?

Air pollution is one of a number of risks for heart and lung disease. Stopping smoking has the largest impact on preventing risk and nearly one quarter of people within Southampton still smoke. Increased walking and cycling, and consequent reduced car travel, would not only reduce risk through reduction in air pollution, it would also benefit health through people being more physically active. Reducing road traffic would also reduce the number of road traffic accidents. There were 387 people 'killed and seriously injured on roads' from 2010-2012 (i.e. average of 129 per year) in Southampton City.

Southampton has adopted recommendations from the national Active Travel Strategy published by the Department for Transport and Department of Health through its 'My Journey' initiatives. As an example, 100% of schools in Southampton have school travel plans in place, aided by 'My Journey' including the development of STARS and Bike It programmes. This enables schools to encourage children and their parents to cycle or walk to school instead of driving.

The council's 'Cycle to Prosperity' scheme hopes to increase cycling levels in the population from 3% to 18% within 10 years. A 10 year cycling strategy has been produced in association with Sustrans to increase the provisions for cyclists throughout the city and make it safer to cycle. Cleaner buses are being introduced into Southampton and the city was awarded £632,700 from the Clean Bus Technology Fund to fund 37 buses with Flywheel technology, which will reduce pollution levels coming from buses.

A local Air Quality Scrutiny Inquiry is currently ongoing. Council led approaches and public health impact described above were highlighted as an important part of the Inquiry. In addition, representatives from the Port described the benefits of their vehicle booking system in reducing the number of vehicles entering the Port at unspecified times, the increasing number of containers carried by rail rather than road and trailing of new compressed gas powered straddle carriers. DP world emission targets are driving these initiatives.

The Inquiry has also considered planning decisions. The Local Plan Review policy states that planning permission will be refused: (i) where the effect of the proposal would contribute significantly to the exceedance of the National Air Quality Strategy Standards; or (ii) where the proposal would be materially affected by existing and continuous poor air quality. The Inquiry heard that as part of the planned LES and proposed local plan review, consideration will be given to introduce local guidance that will support the protection of public health. This will include promotion of best practice to mitigate risk and attribution of a damage cost to proposals that increase emission loads.

A residents survey undertaken in August 2014 on air quality showed that air quality is important to Southampton residents (298 responses from across the City). 44% respondents felt that cars are the main contributor to air quality, with HGVs (20%) second most common response and industry (10%) and shipping/ ports (10%) third most common. 59% of 294 respondents felt air quality in the city has worsened in recent years, whereas in contrast 4% felt it had improved. Suggestions for improvement included better public transport, park and ride, improving cycling routes, lowering speed limits, planting more trees, having a low emission zone and redirecting and restricting HGVs.

Recommendations

1. Need for joined up strategic intent on combating air pollution, sustainable development and encouraging people to walk and cycle. The Low Emission Strategy should provide the direction for this vision and be governed by the Health & Wellbeing Board.
2. Support the promotion of low emission vehicles within and around the City boundaries via the Low Emission Strategy and contribution to funding opportunities.
3. Develop stronger links with planning to ensure public health implications are considered in decision-making; providing contribution to the proposed local plan review.
4. Improve the public awareness, a clearer Council webpage should inform on progress since the last Air Quality Action Plan. Stronger promotion of Council's efforts in a more 'public friendly' way to tackle air pollution

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