



# Southend-on-Sea Borough Council Air Quality Action Plan

In fulfilment of Part IV of the  
Environment Act 1995  
Local Air Quality Management

November (2017)

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## Forward by Portfolio Holder

“Everyone has the right to breathe clean air and public interest in air quality has been at an all-time high.

The most immediate air quality challenge is tackling the problem of nitrogen dioxide (NO<sub>2</sub>) around our roads – the only statutory air quality obligation the UK is currently failing to meet.

Southend-On-Sea Borough Council provides a high quality environment for residents, visitors and businesses and generally enjoys good air quality. There are, however, traffic hot-spots giving rise to unacceptable levels of air quality, and this has become a serious public health concern for many Cities and large Towns throughout the UK.

Given that the primary source of the pollutants is vehicle emissions, finding solutions is a challenge for us all to rise to. There are enterprising plans for investment to build and regenerate but this vision needs to be matched with improvements to air quality.

We fundamentally believe that the needs of the local community are at the heart of what we do at the Council. It is our objective to work together with communities to solve problems locally and participate in decisions that affect them and as a result build stronger more resilient communities.

An improvement to air quality requires an integrated and collaborative approach on the part of both internal and external stakeholders including the Community.

In developing this action plan, partnership working will be a key prerequisite. We will need to take an innovative and creative approach. The plan has been structured to incorporate both Borough wide actions and more specific actions aimed at local traffic hot-spots.

Together we shall work towards making the Borough “A Better Place to Live”, to work in and to visit.

On behalf the Council we would like to thank everyone who has been involved in the development of this Air Quality Action Plan which will identify local priorities, deliver improved outcomes and make a real difference to the lives of local people.”

Signed Mam Fawcett Portfolio Holder

## Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in the Borough between 2018 and 2021.

This is the Borough Council's first air quality action plan and has been triggered primarily to address the air quality concerns associated with the Air Quality Management Area (AQMA) declared along a stretch of the A127, Prince Avenue, Southend in November 2016. The AQMA is our first priority. The secondary purpose of the action plan is to address air quality across the whole Borough.

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>. The Council is committed to reducing the exposure of people in the Borough to poor air quality in order to improve health.

We have developed actions that can be considered under the following priority work areas:

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>2</sup> Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

- Southend Intelligence Hub - SMART City Journey and Digital Strategy
- Strategic Planning and Transport Policy
- Public Health and Raising Awareness
- Land Use Planning and Development Control
- Sustainable Innovation
- Low Emission Air Quality Strategy (LEAQS)
- Community Engagement

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond the Borough Council's direct influence.

The emphasis of the plan is to firstly, develop measures that will provide the necessary emissions reductions to achieve the air quality objectives within specified timescales, and, secondly, to act as a live document which can be continually reviewed and developed to ensure current measures are progressing and new measures are brought forward.

## **Responsibilities and Commitment**

This AQAP was prepared by the Regulatory Services section of the Borough Council with the support and agreement mainly of the following departments:

- Public Health
- Strategic Planning and Transport Policy
- ICT
- Energy and Sustainability
- Land Use Planning and Development Control

It has been approved by the Cabinet and Full Council and will be subject to an annual review. Progress each year will be reported in the Annual Status Reports

(ASRs) produced by the Borough Council as part of our statutory Local Air Quality Management duties.

***If you have any comments on this AQAP please send them to Bill Pegram at Southend-on-Sea Borough Council, Civic Centre, Victoria Avenue, Southend SS2 6ER Email: [BillPegram@southend.gov.uk](mailto:BillPegram@southend.gov.uk)***

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## 1. Introduction

This report outlines the actions that Southend-on-Sea Borough Council will deliver between 2018 and 2021 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Borough.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed periodically and progress on measures set out within this Plan will be reported on annually within the Council's air quality Annual Status Report (ASR) submitted to DEFRA.

Taking action to improve air quality is crucial in order to improve the health of the population. There is growing evidence that air pollution is a significant contributor to preventable ill health and early death. These health impacts impose a cost on the economy estimated to run into billions.

The most immediate air quality challenge is tackling the problem of nitrogen dioxide (NO<sub>2</sub>) concentrations around roads – the only statutory air quality obligation the UK is currently failing to meet.

This document has been produced by Southend-on-Sea Borough Council and constitutes our first Air Quality Action Plan (AQAP). It has been triggered primarily to address the air quality concerns associated with the Air Quality Management Area (AQMA) declared along a stretch of the A127, Prince Avenue, Southend in November 2016. Its secondary purpose is to address air quality issues by a wider, cross Borough approach with so-called “soft” indirect actions.

It is a statutory duty for the Council to develop an AQAP following the declaration of an AQMA in response to an identified breach of the annual mean air quality objective for nitrogen dioxide.

The vision of the Council is to ***“Create a Better Southend”*** supported by the five corporate aims of a “Clean, Safe, Healthy and Prosperous Southend, led by an excellent Council”. This vision will be reflected in and provide a clear focus for the actions outlined in this document.

## 1.1 Legislative Background

Air quality limit values for the protection of human health have been set by two EU Air Quality Directives 2008/50/EC and 2004/107/EC. These were transposed into UK Law via the Air Quality Standards Regulations 2010.

Action is then driven by the UK’s Air Quality Strategy which sets out equivalent Air Quality Objectives (AQOs).

Part IV of the Environment Act 1995 places a statutory duty on all local authorities in the UK to periodically review and assess air quality within their areas. This is to determine the likelihood of complying with prevailing health based air quality objectives for a number of pollutants. The UK Air Quality Strategy, Policy and Technical Guidance provide the over-arching themes for local air quality management in the UK.

Local Authorities that identify a breach of any of the air quality objectives in their area are required to formally declare an Air Quality Management Area. Once declared the authority has a duty under Section 84 (2) of the Act to produce an Air Quality Action Plan (AQAP).

Local Authorities are not legally obliged to meet the air quality objectives but they must be able to demonstrate that they are working towards the objectives.

In order to effectively discharge duties under the Local Air Quality Management regime the Council is required to report on air quality throughout the Borough. This function is undertaken by Regulatory Services.

Regulatory Services will continue to ensure that ambient air quality is monitored after the implementation of this AQAP. The team will report regularly on progress, both through the local air quality management reporting schedule to DEFRA and via the Council’s Corporate Priority Actions Protocol: Action 1718 PLACE PPC03.

## 1.2 The Action Planning Process

Action planning is an essential part of the local air quality management process, providing a practical opportunity for improving air quality in areas where review and assessment has shown that national measures will be insufficient to meet one or more the air quality objectives. A suitable air quality action plan should include the following:

1. Quantification of the source contributions to the pollution burden for example by vehicle categories. This allows action plan measures to be targeted more effectively.
2. Evidence that available options have been considered on the grounds of cost, feasibility and potential scale of impact.
3. Quantification of expected improvement in air quality.
4. Confirmation of how the Council will discharge its powers and also work in partnership with other stakeholders in pursuit of the relevant air quality objective.
5. Clear timescales within which the authority and other stakeholders propose to implement the various measures contained in the plan.
6. Quantification of the expected impacts of the proposed measures, and where possible, an indication as to whether these will be sufficient to demonstrate compliance with the objective/s.
7. Identification of how the Council intends to monitor and evaluate the effectiveness of the plan.
8. Prompt the formation of a Steering Group to enable and drive forward all of the above.

*The emphasis of AQAPs should be to firstly, develop measures that will provide the necessary emissions reductions to achieve the air quality objectives within specified timescales, and, secondly, to act as a live document which can be*

*reviewed periodically (at least once a year) and developed to ensure current measures are progressing and new measures are brought forward.*

This AQAP has been written to incorporate the following priority work areas:

1. Southend Intelligence Hub – SMART City Journey and Digital Strategy
2. Strategic Planning and Transport Policy
3. Public Health and Raising Awareness
4. Land Use Planning and Development Control
5. Sustainable Innovation
6. Low Emission Air Quality Strategy (LEAQS)
7. Community Engagement

## 2. Summary of Current Air Quality in Southend-on-Sea Borough Council

The main source of air pollution in the Borough is road traffic emissions from major roads, notably the A13, A127 and A1159. Other pollution sources including commercial, industrial and domestic sources also make a contribution to background pollutant concentrations. Exceedances of the annual mean air quality objective for nitrogen dioxide continue to be observed at three semi-permanent sites in or close to the existing AQMA boundary. One temporary site (of eight) associated with a major improvement scheme at A127 Kent Elms junction also shows an exceedance.

Neighbouring Rochford District Council is home to London Southend Airport which is close to the administrative boundary with Southend. The Council monitors air quality at roadside locations nearby. Airside operations are expected to only make an imperceptible contribution to background pollutant concentrations.

In November 2016 Southend-on-Sea Borough Council declared its first Air Quality Management Areas (AQMA) centred at the junction between Prince Avenue, Hobblythick Lane and Rochford Road (also known as “The Bell Junction”). Here exceedances of the annual mean Air Quality Objectives for nitrogen dioxide were confirmed by a Detailed Assessment completed in July 2016.

Southend-on-Sea Borough Council has 25 semi-permanent and 8 temporary passive diffusion tube sites at which air quality is measured to ensure that the Council remains informed of air quality especially at locations where traffic volumes are high and that if exceedances are recorded, then appropriate measures can be swiftly implemented.

As a Unitary Authority, the Council is responsible for highways, transportation and strategic planning. As a single tier authority, the relevant departments of Environmental Health, Public Health, Strategic Transport Policy, Planning and Sustainability are able to work effectively together to keep air quality a high priority, supported by the same Local Plan and Local Transport Plan objectives

For more information please refer to the latest ASR 2017.

## **3. The Council's Air Quality Corporate Priorities**

### **3.1 Southend Intelligence Hub – SMART CITY Journey**

The connection of the Council's 31 Urban Traffic Control sites to the newly deployed pan borough full fibre network presents the opportunity to monitor a raft of traffic and environmental characteristics simultaneously in real time. The intention is to relay data captured this way back to the Council's Intelligence Hub and host it for analytical purposes within the CISCO City Connected Digital Platform. The provision of the Intelligence Hub and the ability to cross reference data captured in this way is key to Southend's SMART CITY ambitions. As step one, the Intelligence Hub will see the co-location of three core 24/7 services: public space CCTV, traffic management and tele-care. See section 5.1 Southend Intelligence Hub on page 22.

### **3.2 Public Health Context**

Air pollution affects mortality from cardiovascular and respiratory conditions, including lung cancer. In its report on 'The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom', published in 2010, the Committee on the Medical Effects of Air Pollutants<sup>16</sup> (COMEAP) estimated the mortality burden of existing levels of air pollution on the population of the UK as being equivalent to 29,000 deaths and an associated loss to the population of 340,000 life-years. Local authorities, working together with the public, can implement measures to reduce exposure to air pollution as well as reducing polluting emissions through, for instance, active travel plans.

See section 5.3 Public Health and Raising Awareness on page 32.

### **3.3 Transport Planning and Policy Context**

The Council is now working to LTP3 with a current implementation plan covering 2015-2021 reflecting the Government's spending plan.

Local Transport Plans steer the implementation of national transport policies at the local level. As a strategic document the LTP does not contain details of

schemes, but sets out a long term transport strategy, a shorter term implementation plan and a number of supporting strategies.

Transport needs to be linked with wider economic, social and environmental objectives. The LTP3 has therefore been developed within the context provided by a range of policy documents, including the Southend Core Strategy.

The long term transport strategy vision is linked to the Council's long term vision of:

“Creating a better Southend” which is supported by five aims resulting in a Clean, Safe, Healthy and Prosperous Southend Led by an Excellent Council.”

See section 5.2 Strategic Planning and Transport Policy on page 25.

### **3.4 Land Use Planning Context**

A key priority for the Borough Council is to integrate air quality considerations with other policy areas such as Land Use Planning and Development Control. Many developments have the potential to increase the pollution burden and it is appropriate that these developments are required to mitigate or offset this in order to help to achieve an overall reduction in local air pollution. It is therefore essential to identify how we can bring air quality considerations into the planning process at the earliest possible stage. It is no longer satisfactory to simply demonstrate that a development is no worse than the existing or previous land use on a particular site.

See Land Use Planning and Development Control section on page 35.



### 3.5 Source Apportionment of Traffic Emissions in AQMA and Agglomeration Zone

Source apportionment is the process of identifying the contribution each individual source of a pollutant such as nitrogen dioxide makes to the overall level. These consist of background sources and locally generated sources.

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within the Borough which is traffic.

We have assessed the contribution each category of vehicle type makes to the overall pollution burden.

A source apportionment exercise was carried out by external consultants on the Council's behalf in 2016 during completion of the Detailed Assessment. Annual Average Daily Traffic (AADT) flows and queuing data were provided by SBC after traffic counts were carried out across the Borough. Through the use of ADMS-Roads modelling, concentrations at relevant receptors at The Bell junction and Cuckoo Corner were predicted. This identified that the maximum concentration in this area was estimated at Prince Avenue on the approach to Cuckoo Corner. Source contributions to NO<sub>x</sub> concentrations at this receptor were calculated, including regional and local background concentrations and concentrations as a result of traffic sources. Figure 1 shows the percentage contributions to NO<sub>2</sub> concentrations.

**Figure 1. Source Apportionment of NO<sub>2</sub> Concentrations on Prince Avenue, including petrol and diesel contribution**

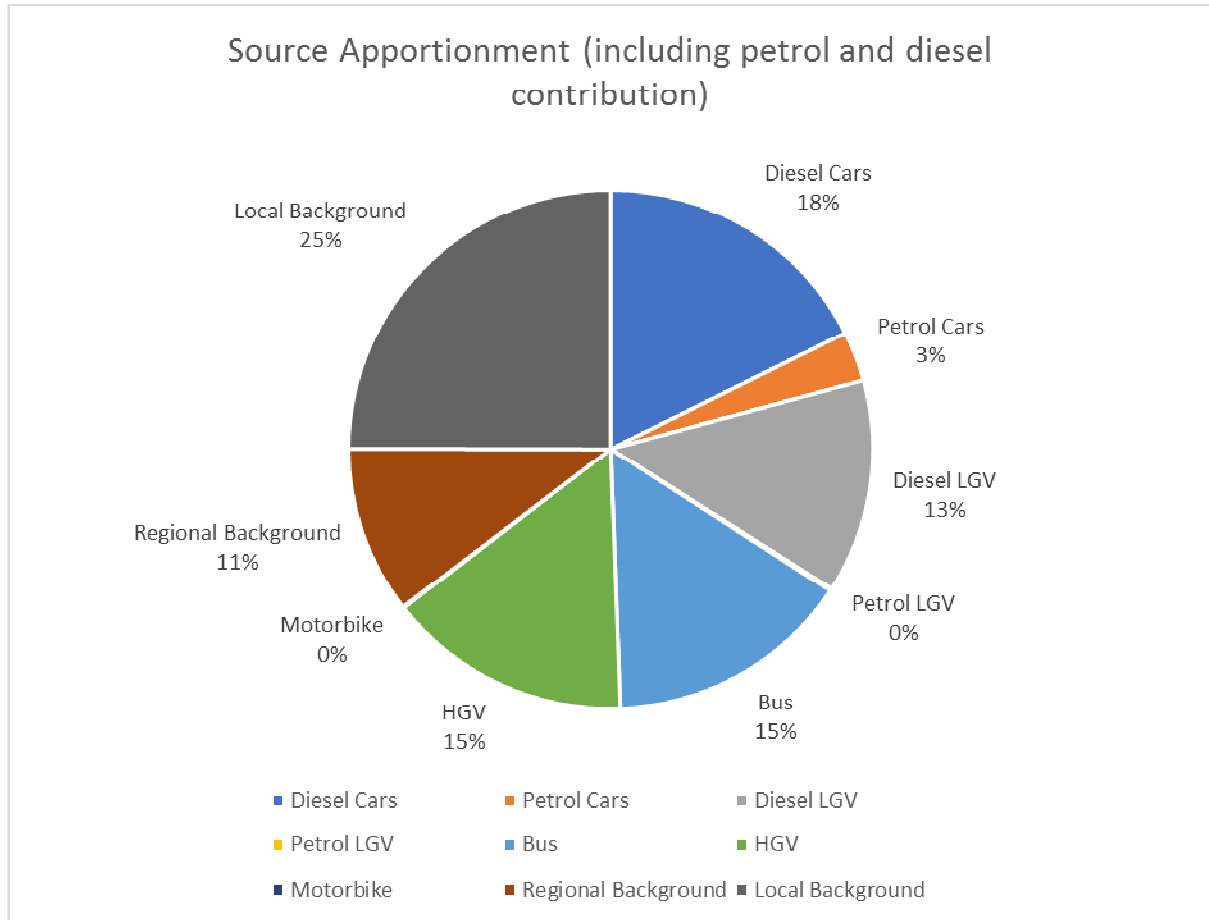


Figure 1 shows that the highest proportion of NO<sub>2</sub> emissions can be attributed to cars (21%), with buses, HGVs and LGVs contributing roughly the same proportion each. Therefore, there is no standout source contribution so measures will be focussed on reducing vehicle emissions as a whole.

Further refinement of the source apportionment calculation showed that diesel vehicles were responsible for a much higher proportion of NO<sub>2</sub> emissions than petrol vehicles.

### 3.6 Estimated Background Concentrations

DEFRA has made estimates of background pollution concentrations on a 1km<sup>2</sup> grid for the UK for seven of the main pollutants including NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. Base year data was for 2011 and projections are made for years 2011 to 2013. Table 1 shows the estimated background values of the pollutants for the year 2015.

**Table 1. DEFRA Mapped Background Annual Mean Pollutant Concentrations (µg/m<sup>3</sup>).**

Grid Square Centre Coordinates 586500, 187500	2015
Nitrogen Dioxide, NO <sub>2</sub>	21.6
Nitrogen Oxides, NO <sub>x</sub>	32.2
Particulate Matter PM <sub>10</sub>	17.6
Particulate Matter PM <sub>2.5</sub>	2.3

The background source component comprises emissions from the following sectors:

- Domestic (including heating and cooking)
- Commercial and Industrial (heating)
- Other transport sources such as railways, airports and shipping
- Small Industrial processes such as those regulated under the environmental permitting regime
- Minor roads.

### **3.7 Southend Urban Area Agglomeration Zone - Source Apportionment**

The Southend Urban Area Agglomeration Zone is made up of Southend-on-Sea Borough Council, Rochford District Council and Castle Point Borough Council. It is one of 28 national zones each with its own DEFRA action plan setting out national, regional and local actions. Locations of EU non-compliance are along the A127.

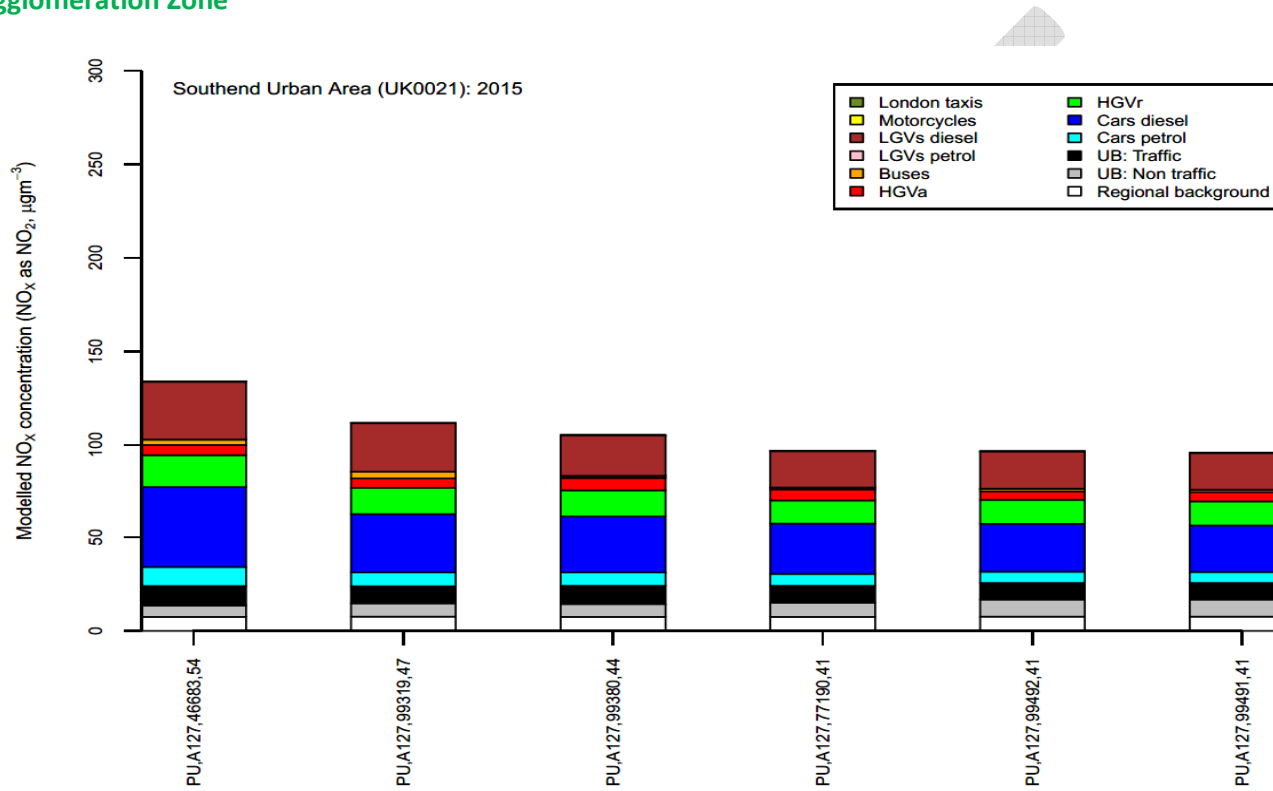
Local road traffic was the dominant source of NO<sub>x</sub> for the reference year of 2015. The largest contribution was from diesel cars and diesel LGVs contributing approximately 32% and 23% respectively to the road link with the highest concentrations. Cars, LGVs, rigid HGVs and articulated HGVs were important sources on the primary roads with the highest concentrations. For all road links concentrations of NO<sub>x</sub> from diesel cars were approximately four times greater than NO<sub>x</sub> emissions from petrol cars. NO<sub>x</sub> concentrations from petrol LGVs are a small component of total NO<sub>x</sub> concentrations and less than 2% of total NO<sub>x</sub> from LGVs.

Data from both source apportionment analyses confirm that diesel vehicles are the main contributor of NO<sub>x</sub> on our roads.

### **3.8 Agglomeration Zone Status**

The assessment undertaken for the Southend Urban Area Agglomeration Zone indicates that the annual limit value was exceeded in 2015 but is likely to be achieved before 2020 through the introduction of national and local measures included in the baseline.

Figure 3. Annual mean roadside NO<sub>x</sub> source apportionment for all roads exceeding the annual mean NO<sub>2</sub> limit value in 2015 in Southend Agglomeration Zone



Road class (MU = motorway, PU = primary road, TU = trunk road), road number, census id 15 and modelled NO<sub>2</sub> concentration (µgm<sup>-3</sup>)

### 3.9 Required Reduction in Emissions

Figure 4 below shows the AQMA boundary. The air quality objective (AQO) being exceeded at this location is the annual mean for nitrogen dioxide (NO<sub>2</sub>) which is 40µg/m<sup>3</sup>.

Real time automatic monitoring as part of the Detailed Assessment undertaken in 2016 confirms an (annualised) annual mean of 44µg/m<sup>3</sup>. In order to calculate the required reduction in emissions, a road NO<sub>x</sub> concentration of 67.5µg/m<sup>3</sup> has been calculated using the NO<sub>x</sub> to NO<sub>2</sub> calculator in line with Box 7.6 in LAQM.TG(16). The road NO<sub>x</sub> concentration required to meet the 40 µg/m<sup>3</sup> AQO is 57.6 µg/m<sup>3</sup>. Therefore, a reduction of 9.9 µg/m<sup>3</sup> of road NO<sub>x</sub> is required to meet the AQO at this location. This equates to a 15% reduction.

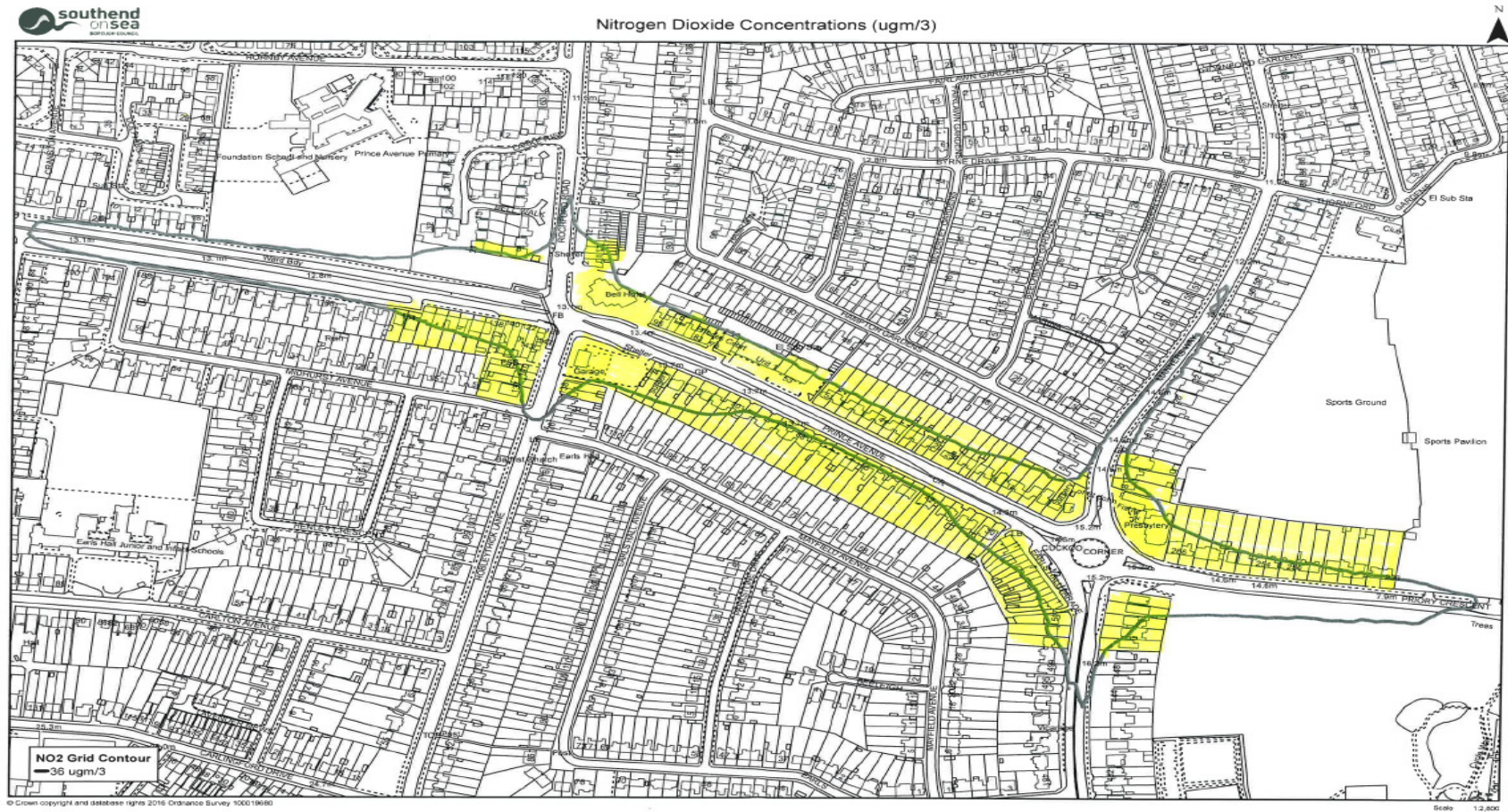
However, as part of the Bell Junction AQMA Strategic Highway Improvement impact assessment, further analysis of the required reductions in traffic emissions from the different vehicle categories will be undertaken. Parameters such as average speed and queue length will also be assessed in order to provide a basis for future monitoring of the effectiveness of the preferred option.

There are c125 residential units included in the AQMA boundary. Based on the Office for National Statistics there were on average 2.4 people per household in the UK in 2015. Therefore it is estimated that there are c300 people living within the AQMA boundary.

This was calculated in line with Technical Guidance LAQM.TG16 Chapter 7.



Figure 4. The A127 Bell Junction AQMA: Boundary in Green; Properties Affected in Yellow



### 3.10 Immediate Key Priorities

Source apportionment has identified the following contributions to the overall NO<sub>2</sub> pollution burden in the AQMA:

Vehicle Type	Percentage Contribution
Diesel Cars	18
LGVs Diesel	13
Buses and Coaches	15
Artic and Rigid HGVs Diesel	15

Emissions from these vehicle categories will be the main focus for priorities 1 and 3 below.

- Priority 1 - Assess the air quality impact of the preferred option (of three) for the Bell Junction AQMA, A127 Strategic Highway Improvement.
- Priority 2 - Assess the air quality impact of the Kent Elms A127 Strategic Highway Improvement at this location, as well as the Bell Junction AQMA further east.
- Priority 3 - Development of a Low Emission Air Quality Strategy (LEAQS) which will attempt to target diesel cars (18%), diesel LGVs(13%) and buses (15%), all of which contribute significantly to the overall NO<sub>2</sub> pollution burden in the AQMA and on our roads generally.
- Priority 4 – Southend Intelligence Hub – SMART CITY Journey.



## 4. Development and Implementation of AQAP

### 4.1 Consultation and Stakeholder Engagement

Stakeholder consultation is a fundamental aspect of Local Air Quality Management, and a legal requirement under Schedule 11 (s90) of the Environment Act 1995.

The consultation process should be collaborative based and provide the way to better prepare and develop the action plan. It provides participants and, importantly, the public, with the information they need to contribute in a meaningful and constructive way.

The public health effects of poor air quality are well documented and DEFRA expect the highest level of support across the local authority (e.g. Chief Executive and Council level) to ensure all parts of the local authority are working effectively together.

#### Internal Stakeholders Consulted:

- Strategic Transport Policy
- Public Health
- Planning and Development Control
- Energy and Sustainability
- Procurement
- Economic Development
- Elected Members

#### External Stakeholders Consulted:

- Transport Companies
- Key Freight Operators
- Key Local Businesses
- Local Environment/Transport Group
- Chambers of Commerce
- Local Community Representatives and Residents especially in the vicinity of the AQMA.

- DEFRA
- Essex LAs

In developing this AQAP, we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 0.1. In addition, we have undertaken the following stakeholder engagement:

- Via the Council's website
- Letters distributed directly to households along the AQMA

The response to our consultation stakeholder engagement is given in Appendix A.

**Table 0.1 – Consultation Undertaken**

Yes/No	Consultee
Yes	the Secretary of State
Yes	the Environment Agency
Yes	the highways authority
Yes	all neighbouring local authorities
Yes	other public authorities as appropriate, such as Public Health officials
Yes	bodies representing local business interests and other organisations as appropriate

## 4.2 Steering Group

*The Steering Group members will be from SBC, chaired by the Director of Public Health and include a Transport Planning Policy Engineer, Air Quality Specialist and a relevant Portfolio Holder. The group will attend quarterly meetings in order to drive forward existing actions and to identify new initiatives as appropriate. As a priority, the steering group will collate and review the responses from internal and external stakeholders to establish suitable action moving forward. Progress will be reported via the Council's Annual Status Reports submitted to DEFRA, the Council's website and internal management team meetings.*

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## 5. Action Plan Measures

The following tables describe the Borough Council's AQAP measures. Details include:

- a list of the actions that form part of the plan
- the responsible organisations who will deliver this action
- Indication of cost of implementing each action: **Low (<£25K), Medium (£25-£100K) or High (>£100K)**. Indication of expected benefit in terms of pollutant emission and/or concentration reduction – **Low (imperceptible reduction), Medium (up to 2µg/m<sup>3</sup> reduction in concentration) or High (greater than 2µg/m<sup>3</sup> reduction in concentration)** – based on the LLAQM Borough Air Quality Action Matrix used by London Authorities<sup>4</sup> and professional experience. Where possible, the percentage reduction modelled in the LAQM Matrix has been applied to the 50.9µg/m<sup>-3</sup> highest modelled concentration in the Detailed Assessment
- the timescale for implementation
- how progress will be monitored

*Note, although the actions are listed in accordance with the work area priorities as described in the main text, the NO<sub>2</sub> source apportionment data shown in Section 3.5-3.7 above will be a key factor in determining specific actions targeted towards certain vehicle categories, especially in the AQMA. More details will be provided in our Low Emission Air Quality Strategy currently in development*

Please see future Air Quality Annual Status Reports for updates on implementation of these measures.

### 5.1 Southend Intelligence Hub - SMART CITY Journey and Digital Strategy

The connection of the Council's 31 Urban Traffic Control sites to the newly deployed pan borough full fibre network presents the opportunity to monitor a raft of traffic and environmental characteristics simultaneously in real time. The intention is to relay data captured this way back to the Council's

<sup>4</sup> [https://www.london.gov.uk/sites/default/files/air\\_quality\\_action\\_matrix.pdf](https://www.london.gov.uk/sites/default/files/air_quality_action_matrix.pdf)

Intelligence Hub and host it for analytical purposes within the CISCO City Connected Digital Platform. The provision of the Intelligence Hub and the ability to cross reference data captured in this way is key to Southend's SMART CITY ambitions. As step one, the Intelligence Hub will see the co-location of three core 24/7 services: public space CCTV, traffic management and telecare.

Funding for the Intelligence Hub has been approved and subject to the final business case the Hub will be built in 2018/19.

The Hub will:

- Act as "eyes and ears" of the Borough, watching and monitoring activity.
- Act as the City Intelligence and Coordination Centre, responding in anticipation of incidents escalation.
- Enable the Council to generate income through the selling of services capable of being delivered through SIH.

SIH will see the upgrade and integration of systems and services provided within a modern environment on a 24/7 basis. It will also have the capability to facilitate an ambitious undertaking and could potentially co-locate key strategic and operational services from a range of partner organisations such as the NHS and Essex Police. It will in essence become a centralised operations suite for delivering borough-wide management via a wide range of partnership responses within Southend and neighbouring boroughs. In the initial formative period however, the focus will be on council services.

The overarching benefits could include:

1. The provision of a strategic and integrated approach to image capture, information dissemination and operational analysis of live incidents.
2. Intelligence-led responses to incidents including major emergencies
3. Delivery of enhanced traffic management on a borough wide basis.
4. Delivery of enhanced environmental monitoring (*including a pilot study of 10 remote air quality sensors*) and ultimately management solutions.
5. Activation of the community to have a healthier life style.
6. More effective and efficient use of available resources.

Whilst the Southend Intelligence Hub will not lead directly to improvements in air quality, it may be used to give a clearer picture of air quality across

Southend as a whole to more accurately target improvement measures. Also, it may be used to monitor the impact of AQAP measures implemented.

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**Table 5.1 Southend Intelligence Hub-SMART City Journey Action Summary**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Intelligence Hub-SMART City	Transport Planning and Infrastructure	Other	ICT, Strategic Transport Policy(SBC)	Aug 2017	Commence Jan 2018		N/A	On-going	Dec 2019	Major IT Infrastructure Up-grade for Southend
1.a	Pilot the CISCO City Connected Digital Platform (CDP) pulling together data sets in respect of traffic and environment. Understanding the relationship and automating predictive and preventative strategies	Transport Planning and Infrastructure	Other	ICT, Strategic Transport Policy(SBC)	..	2017	The identification of predictive and preventative strategies	"	"	Dec 2107	Cost Low Potential AQ Impact Medium to High through identification of possible strategies for further improvement

Southend-on-Sea Borough Council Air Quality Action Plan 2017

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1.b	Provide a business case for the Creation of a Southend Intelligence Hub - SMART CITY	"	"	"	"		Completion	"	"		Cost Low Potential AQ Impact Low
1.c	Build the Intelligence Hub in Southend	"	"	"	"	2018/19	Hub in place, properly staffed and operational	"	"	Dec 2019	Cost High Potential AQ Impact Medium to High Single 24/7 solution for the Borough
1.d	Installation of 10 air quality sensors for UTMC suitability (Pilot)	"	"	"	Completed 2017	Jan 2018	Pilot Completion and review of data collected	"	"	Jan 2019	Pilot study to test reliability, suitability for UTMC  May be used to monitor progress of other identified AQAP measures



## 5.2 Strategic Planning and Transport Policy

### 5.2.1 Local Planning Framework

The Southend Core Strategy (2007) Policy KP2: Development Principles, seeks to ensure that all new development, including transport infrastructure, contributes to economic, social, physical and environmental regeneration in a sustainable way, including reducing the need to travel (KP2.3.c), facilitating the use of travel modes other than the private car (KP2.3.e); respect, conserve and enhance and where necessary adequately mitigate effects on the natural environment, including the Borough's biodiversity and green space resources (KP2.4); promote improved and sustainable modes of travel (KP2.8); including appropriate measure in design, layout, operation and materials to achieve, avoidance or appropriate mitigation of actual and potential pollution impacts of development (KP2.11.c), enhancement to the ecological and amenity value of the environment where appropriate (KP2.11.e).

Policy KP3: Implementation and Resources, sets out that the Council will enter into planning obligations to ensure the provision of infrastructure and transportation measures, including improvements to cycling, walking and passenger transport facilities and services (KP3.2.b) and open spaces and green grid enhancements (KP3.2.f), and to require all development to have regard to, and where appropriate contribute to the delivery of, the Southend Local Transport Plan (KP3.4).

Policy CP3: Transport and Accessibility, makes provision for improvements to transport infrastructure and services, in partnership, to secure a step change in provision to achieve a modern integrated transport system, necessary to unlock key development sites and secure sustainable regeneration and growth. This includes, Policy CP3.6, safeguarding and enhancing the environment of 'Environmental Rooms', as defined in the Local Transport Plan.

Policy CP4: The Environment and Urban Renaissance, requires development proposals to contribute to the creation of a high quality, sustainable urban environment, including creating safe, permeable and accessible development and spaces that encourage walking and cycling within 'Environmental Rooms' (CP4.6); creating and maintaining a 'Green Grid' of high quality, linked and publicly accessible open spaces across the town, contributing to the wider

green grid (CP4.10); and preventing, reducing or remedying all forms of pollution including soil, water, noise and other forms of airborne pollution (CP4.14).

The Development Management DPD (2015) in Policy DM15: Sustainable Transport Management, highlights the role sustainable transport in Southend plays in supporting economic growth, including reducing carbon emissions, improving local air quality, improving health through better air quality and making walking and cycling an attractive and viable alternative.

It references the Southend Local Transport Plan, and highlights the need to locate development in areas that are sustainable, or that it can be demonstrated can be made sustainable and accessible by non-car modes and which reduce the overall need to travel. Developments that generate significant amounts of movement, are required to provide a supporting Transport Statement or Transport Assessment.

Policy DM15 also encourages the provision of facilities for charging electric vehicles and other ultra-low emission vehicles wherever practical and feasible.

### 5.2.2 Local Transport Plan (LTP3)

The Council is now working to LTP3 covering the period 2011-2026 with a current implementation plan covering 2015-2021 reflecting the Governments spending plan.

Local Transport Plans steer the implementation of national transport policies at the local level. As a strategic document the LTP does not contain details of schemes, but sets out a long term transport strategy, a shorter term implementation plan and a number of supporting strategies.

Transport needs to be linked with wider economic, social and environmental objectives. The LTP3 has therefore been developed within the context provided by a range of policy documents, including the Southend Core Strategy.

The long term transport strategy vision is linked to the Council's long term vision of:

*"Creating a better Southend" which is supported by five aims resulting in a "Clean, Safe, Healthy and Prosperous Southend Led by an Excellent Council."*

The Southend LTP3 contains the following key themes:

1. A thriving and sustainable local economy in the Borough;
2. Minimise environmental impact and promote sustainability for a greener Borough;
3. A safer Borough, and;
4. Reduce inequalities in health and wellbeing and a more accessible Borough.

The document incorporates four Action Plans covering the full range of schemes to be delivered with a clear focus on ensuring that their purpose is understood, that they interrelate and contribute to delivering a “Better Southend”.

### **5.2.3 The A127 Bell AQMA Highway Improvement**

Three different potential highway improvement schemes are currently being considered, including potential air quality impacts. The preferred option will be chosen via a formal consultation process during 2018.

### **5.2.4 The A127 Kent Elms Highway Improvement**

The A127 Kent Elms Junction improvements provide maximum benefit with three lanes heading eastwards, and a right hand turn lane providing improved capacity through the junction. An additional lane is also provided heading westward again providing greater capacity through the junction.

Together with a new footbridge the scheme will help deliver an improved local environment and contribute positively towards sustainable transport objectives. See ASR 2017 for more detail.

The potential air quality impact of the Kent Elms junction as well as further east along the A127 at the Bell Junction AQMA will be monitored and modelled, the former as part of a Detailed Assessment commissioned in December 2018.

Note that an Air Quality Assessment of the proposed road improvement works at the Kent Elms junction was undertaken in 2016. Dispersion modelling of all three potential scenarios suggested a slight improvement in air quality for nitrogen dioxide and particles at all receptor locations. See reference 19.

**Table 5.2 Summary of Strategic Planning and Transport Actions**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
2	"A Better Southend"										
LTPA	Better Sustainable Transport and Mobility Management	Transport Planning and Infrastructure, Traffic Management	Other	SBC	n/a	On-going	Completion of Projects KP2	n/a	LTP3	On-going	Cost M-H Potential AQ Impact not quantified but improvements expected Corporate Priority Action
LTPB	Better Networks and Traffic Management Schemes	Traffic Management	Other	SBC	n/a	On-going	Completion of Projects KP2	n/a	LTP3	On-going	Cost M-H Potential AQ Impact not quantified but improvements expected Corporate Priority Action
LTPC	Better Partnership, Engagement and Sponsorship to Support Greater Efficiencies in Funding and Delivery	Transport Planning and Infrastructure	Other	SBC	n/a	On-going	Completion of Projects KP2	n/a	LTP3	On-going	Cost M-H Potential AQ Impact not quantified but improvements expected Corporate Priority Action

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
LTPD	Better Operation of Traffic Control, Information and Communication Systems including Intelligent Transport Systems and Urban Traffic Management Control (UTMC)	Traffic Management	UTC, congestion management, traffic reduction	SBC	Completed	On-going	Completion of Projects Internal KP2	n/a	LTP3	On-going	Corporate Priority Action Cost Medium Potential AQ Impact expected but not quantified
3	A127 AQMA Strategic Highway Improvement, The Bell Junction	Traffic Management, Transport Planning and Infrastructure	UTC, congestion management, traffic reduction	Strategic Transport and Planning Policy	On-going	tbc	Completion of Project, Modelling and monitoring of AQ and traffic	Medium – concentration determined by modelling study commissioned	Scoping phase	March 2021	Infrastructure/traffic management improvements in and adjacent to AQMA Cost High Potential AQ Impact Medium
4	A127 Kent Elms Strategic Highway Improvement	Traffic Management, Transport Planning and Infrastructure	UTC, congestion management, traffic reduction	SBC	2016	2018/19	Post project modelling and monitoring of AQ and traffic KP2	Medium – concentration will be determined by post project modelling	Road works 80% complete, awaiting footbridge	June 2018 tbc	Potential AQ Impact quantified by diffusion tube monitoring and traffic modelling in progress/ to be undertaken Cost High
5	Promote Workplace, School and Personalised Travel Plans	Traffic Management, Transport Planning and Infrastructure	Promoting Travel Alternatives	SBC	Completed	On-going	Monitoring adoption rate	Low	Promotion On-going	On-going	Cost L-M Potential AQ Impact Low

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
6	Promotion of Cycling via "Sustainable Motion" Project, "Cycle Southend", "Ideas in Motion" Project and Bike Hire Scheme	Promoting Travel Alternatives	Promotion of Cycling	SBC	Completed	On-going	Uptake levels	Low	On-going	On-going	Cost Low Potential AQ Impact Low
7	Promote and Encourage walking via "Ideas in Motion"	Promoting Travel Alternatives	Promotion of Cycling	SBC	Completed	On-going	Uptake levels	Low	On-going	On-going	Cost Low Potential AQ Impact Low
8	Promote Train Travel via "Ideas in Motion"	Alternatives to Private Vehicle Use	Other	SBC	Completed	On-going	Uptake levels	Low	On-going		Cost Low Potential AQ Impact Low
9	Encourage and Facilitate Home Working	Promote Travel Alternatives	Encourage and Facilitate Home Working	SBC	Completed	On-going	Uptake levels	Low	On-going	On-going	Cost Low Potential AQ Impact L-M
10	Encourage development of Car Clubs via Section 106 Agreements and Motion Hub	Alternatives to Private Vehicle Use	Car Clubs	SBC	Completed	On-going	Uptake levels	Low	On-going		Cost Low Potential AQ Impact Low

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
11	Promote uptake of Sustainable Transport such as Electric Vehicles and Installation of Electric Charging Points	Promoting Low Emission Transport	Procuring alternative re-fuelling infrastructures to promote low emission vehicles and EV charging points	SBC	Completed	On-going	Uptake levels	Low – LLAQM indicates a reduction in NO <sub>2</sub> concentration of 0.4-0.6 µg/m <sup>3</sup>	Promotional Events Completed, Two +charging points installed		Cost Low Potential AQ Impact
12	Provision of Electric cars for staff business and private use	Promoting Low Emission Transport	Procuring alternative re-fuelling infrastructures to promote low emission vehicles and EV charging point	SBC	Completed	On-going	Uptake levels	Low - LLAQM indicates a reduction in NO <sub>2</sub> concentration of 0.4-0.6 µg/m <sup>3</sup>	Two cars currently available	On-going	Cost Potential AQ Impact
13	Undertake a Park and Ride pilot for town centre, in order to assess viability and uptake rate for potential future implementation	Alternatives to Private Vehicle Use	Bus based Park and Ride	SBC	Completed	Completed	Uptake level	Low	Pilot completed	Phase One October 2017; Future phases tbc	Cost Low Potential AQ Impact Low
14	Apply for National Productivity Investment Funding (NPIF) for Infrastructure Projects	Transport Planning and Infrastructure	Other	SBC	n/a	n/a	Securing funding and completion of projects	n/a	On-going	On-going	Cost Low Potential AQ Impact not quantified

## 5.3 Public Health and Raising Awareness

### 5.3.1 Public Health Outcomes Framework

The Public Health Outcomes Framework originally published in 2012 sets out the (national) desired outcomes for public health and how these will be measured. The framework concentrates on two high level outcomes that set the vision to be achieved across the public health system. These are:

- Increased healthy life expectancy
- Reduced differences in life expectancy and healthy life expectancy between communities.

The outcomes reflect a focus not only on how long people live but also on how well they live at all stages of life. The second outcome focuses attention on reducing health inequalities between people, communities and areas. Using a measure of both life expectancy and healthy life expectancy will enable the use of the most reliable information available to understand the nature of health inequalities both within and between areas.

A set of supporting public health indicators will help focus understanding of progress year by year nationally and locally on those things that matter most to public health.

The indicators, which cover the full spectrum of public health and what can be currently realistically measured, are grouped into four domains:

1. Improving the wider determinants of health
2. Health improvement
3. Health protection
4. Healthcare public health and preventing premature mortality?

The domain of health protection includes air pollution (specifically PM<sub>2.5</sub>) as a public health indicator. ***For the Southend area the mortality burden estimate for the local population is that 6.1% of all mortality for age group 25+ years is attributable to anthropogenic PM<sub>2.5</sub> exposure***<sup>4</sup>.



**Table 5.3 Public Health and Raising Awareness Summary of Actions**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
15	Undertake a Health Impact Assessment in order to better understand the health impacts of air pollution locally	Policy Guidance (Public Health)	Other	SBC	2018 tbc	2018 tbc	Completion	n/a	In progress	December 2018 tbc	Cost Low Potential AQ Impact n/a Local Morbidity and Mortality Study
16	Ensure that the relevant chapters of the JSNA have up to date pollution data and information about the impact of air quality on health. This can then be considered as we refresh the relevant JSNA chapters going forward.	Policy Guidance (Public Health)	Other	SBC	2018 tbc	2018 tbc	Completion	n/a	In progress	tbc	Cost Low Potential AQ Impact n/a

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
17	Raising Awareness with regard to air pollution in general e.g. domestic biomass burners, health effects, travel choices, benefits of personal behavioural change via e.g. social media, SBC website, and health alerts	Promoting Travel Alternatives and Public Health Information	Other	SBC	2018	On-going	Up-dates	Low	Links to DEFRA advice in progress	On-going	Cost Low Potential AQ Impact Low
18	Raising awareness of High Risk and Vulnerable Groups via e.g. social media, SBC website, health alerts	Promoting Travel Alternatives and Public Health Information	Other	SBC	2018	On-going	Up-dates	Low	On-going	On-going	Cost Low Potential AQ Impact Low
19	Promote National Clean Air Day 2017	Promoting Travel Alternatives and Public Health Information	Other	SBC	Completed	Completed	Completion	n/a	n/a	Completed June 2017	Cost Low Potential AQ Impact n/a Learn from 2017 event and promote event for 2018

## 5.4 Land Use Planning and Development Control

A key principle for Southend-on-Sea Borough Council is to integrate air quality considerations with other policy areas such as Land Use Planning. Many developments have the potential to increase the pollution burden and it is appropriate that these developments are required to mitigate or offset this in order to help to achieve an overall reduction in local air pollution. It is therefore essential to identify how we can bring air quality considerations into the planning process at the earliest possible stage. It is no longer satisfactory to simply demonstrate that a development is no worse than the existing or previous land use on a particular site.

### 5.4.1 Southend Central Area Action Plan (SCAAP)

The Southend Central Area Action Plan (SCAAP), when adopted, will form part of the Southend-on-Sea Local Planning Framework.

The SCAAP reflects the vision, strategic objectives and spatial strategy of the Southend Core Strategy (2007). The Core Strategy is a strategic level document that provides the framework for subsequent DPDs, including the SCAAP. It establishes housing and job growth targets for the SCAAP area, over a plan period of 2001- 2021.

### 5.4.2 Air Quality Supplementary Planning Guidance

This document will be produced in order to provide consistency in the way potential developments are considered in relation to their potential impact on local air quality and the need to provide an appropriate air quality assessment. Where developments take place in or adjacent to an AQMA mitigation measures must be considered as standard practice, particularly in cases where the development is new and does not simply replace an existing use. This is especially important where the development has provision for a large number of parking spaces significantly increasing the number of vehicle trips, and/or heating plant.

Guidance for dust management on construction sites and medium combustion plant (MCP) will be incorporated.

In some cases it may be necessary to recommend refusal when a development is so contrary to the objectives of the Air Quality Action Plan and Low Emission Air Quality Strategy.

This approach should potentially bring health benefits across the Borough, not just those living in the immediate area i.e. hot spots where the objectives are being exceeded. This is particularly important for nitrogen dioxide and small particulates as these pollutants have a significant potential impact on health. In order to reduce overall exposure, background pollution levels will need to be reduced, so it is essential that every development with the potential to increase the pollution burden must require mitigation or offsetting to help achieve an overall improvement in our local air quality.

### **5.4.3 Community Infrastructure Levy Bid (CIL) and Section 106 Agreements**

The Council seeks to work constructively, in partnership with developers to foster a “thriving and sustainable local economy and to safeguard public health.”

The Community Infrastructure Levy and Section 106 Agreements provide a mechanism for achieving these outcomes. Funding is sought in respect of air quality action planning to assist with improving air quality within existing AQMAs and to prevent other hot-spots with elevated levels of pollution deteriorating into future AQMAS.

### **5.4.4 Green Infrastructure**

Promoting Green Infrastructure has an important role to play in improving local air quality, helping communities offset their carbon impact, and reduce risk of surface water flooding. In urban areas trees, vegetation and green space can help to reduce pollutants and improve air quality by absorbing gaseous pollutants, lowering ambient temperatures, preventing pollutant concentration, and by producing oxygen during plant photosynthesis. In addition to using green infrastructure to mitigate the effects of poor air quality, opportunities exist at the community area scale to adapt our transport behaviours/adapt modal shift and utilise walking and cycling networks or consider travel around the town via public transport

### 5.4.5 Green Infrastructure Funding Bids

Increasing the volume of Green Infrastructure (GI) has many potential benefits such as surface water management, urban cooling (reducing heat from buildings), shading, increased biodiversity, aesthetics, water pollution removal and improvements in air quality.

Funding is being sought for the following three GI projects:

- Chalkwell Avenue
- Victoria Circus and
- Phase-one of “Better Queensway” - a £350 million regeneration scheme in Southend-on-Sea.

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**Table 5.4 Land Use Planning and Development Control Summary of Actions**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
20	Produce and apply Air Quality Supplementary Planning Guidance for Developers including advice on Medium Combustion Plant (MCP)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SBC	2018	2018	Adoption and use	Low	None	Dec 2018	Cost Low Potential AQ Impact Low Document to be drafted and adopted
21	To secure funding for Air Quality Action Planning including monitoring and support for initiatives aimed at reducing air pollution directly or indirectly via S106 Agreements and the Community Infrastructure Levy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SBC	n/a	n/a	Level of funding secured	Low	On-going	On-going	Cost Low Potential AQ Impact L-M
22	Promote Green Infrastructure Initiatives	Policy Guidance and Development Control	Other	SBC	n/a	n/a	Completion of individual initiatives	Low	See ASR 2088	On-going	Cost Low Potential AQ Impact Low

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
23	Apply for Green Infrastructure Funding Bids to help towards establishing Southend as a NATURE SMART CITY	Policy Guidance and Development Control	Other	SBC	n/a	n/a	Level of funding secured	Low	On-going	On-going	Cost Low Potential AQ Impact Low

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## 5.5 Sustainable Innovation

### 5.5.1 Urban Innovation Action

We are keen to involve all parts of the travel and transport sector and community in order to help tackle common issues around Urban Mobility in the Borough and deliver solutions and concepts as part of Urban Innovation Action (UIA) European Regional Development Fund (ERDF) funding bid. Emphasis throughout the bid is on innovation and how that can help find solutions to the challenges we currently face in the Borough. The key UIA work packages are:

1. Alternative Route Planning
2. Air Quality Management
3. Instrumenting Cities to collect and improve access to better data
4. Car Clubs and Autonomous Vehicles

The project could provide a “Borough Wide Mobility Hub” involving all parties where a resident or visitor can view, plan and book all parts of their journey and visit to, from and through Southend. A comprehensive service would include air, rail and road transport, car clubs, electric cars, car sharing, bicycle hire, buses, taxis and parking spaces together with extensive advice and notice provision extending through airlines, rail companies and the road network. Solutions to parking and reduction of congestion together with processes to reduce traffic in Air Quality Management Areas/hot-spots are expected to be included using open data i.e. real time public transport, delays, congestion, road works, incidents, events and tracking data, air quality, real time sensors and CCTV.



### **5.5.2 Low Carbon Energy and Sustainability Strategy**

Our current Low Carbon Energy and Sustainability Strategy (2015-2020) focuses on a number of areas, one of which is “To Encourage Sustainable Travel and Transport”.

Our vision is “To reduce carbon emissions, congestion and air pollution associated with transport throughout the Borough.

We want to re-think the way we travel. Facilitating the use of electric vehicles is part of the solution, as is developing an integrated public transport system that makes it an easy choice to use the train, bus, walk or cycle for all the members of our community.”

### **5.5.3 Ideas in Motion - Promoting Active Travel**

In 2017 the Borough Council led a funding bid with Essex County Council and Thurrock Council that secured over £3 million, building on the success of the award-winning Ideas in Motion project that promotes more sustainable and active modes of transport.

A new project called “South Essex Active Travel” will see jobseekers, young people, students and volunteers offered targeted travel advice and sustainable transport incentives to better connect them with jobs and education and training opportunities up to the year 2020.

South Essex Active Travel presents a fantastic opportunity to develop the three partner organisation’s work in using sustainable transport as a tool to accessing learning, jobs and skills. Essentially the project will deliver some excellent added value based around improving air quality, reducing carbon emissions and alleviating traffic congestion.

#### **5.5.4 Local Energy Advice Programme**

In 2017 the Borough Council launched the Local Energy Advice Programme (LEAP), an energy efficiency scheme funded by the Government's Energy Company Obligation (ECO) to help fund carbon reduction and energy efficiency measures geared towards tackling fuel poverty. We are one of just 25 local authorities in England benefitting from this exciting opportunity for local residents.

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**Table 5.5 Sustainable Innovation Summary of Actions**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
24	Urban innovation Action (UIA) Funding Bids via European Regional Development Fund for "Innovative" Air Quality Initiatives	Policy Guidance	Other	SBC	Jan- Mar 2108	tbc	Success of funding application	n/a	2017 funding bid was unsuccessful	2018 bid to be completed by March 2018	Cost Low Potential AQ Impact not quantified
25	Low Carbon Energy and Sustainability Strategy 2015-2020	Promoting Low Emission, Sustainable Transport and Travel Alternatives	Other	SBC	Completed	2015-2020	Completion of projects	n/a	On-going	On-going	Cost Low Potential AQ Impact Low
26	"Ideas in Motion-South Essex Active Travel" Project (£3m funded)	Promoting Low Emission, Sustainable Transport and Travel Alternatives	Other	SBC, Essex County Council, Thurrock Council	2017/18	2017-2020	Completion of projects	Low	On-going	On-going	Cost Low in SBC context Potential AQ Impact Low £3m funding secured in 2017
27	Low Energy Advice Program (LEAP) Implementation	Promoting Low Emission Plant and Transport	Other	SBC	2017	2018-2019	Uptake level	Low	On-going	On-going	Cost Low Potential AQ Impact Low

## 5.6 Low Emission Air Quality Strategy

### 5.6.1 The Production and Implementation of a LEAQS

The purpose of the strategy is to reduce emissions from local traffic. The main pollutants of concern are nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM). Particles cause the greatest harm to people's health, but evidence of the effects of nitrogen dioxide is growing too. Global pollutants such as carbon dioxide and other greenhouse gases are also a concern.

The strategy describes the steps the Council and partners will take to reduce the impact of transport emissions and support sustainable development. To do this we will work with all groups who travel or generate traffic in our area.

The Council will evaluate the success of the strategy and use the lessons learned during the period 2018 – 2020 to further develop the strategy for 2020 onwards.

Its production and implementation will be a key component of the Air Quality Action Plan 2017 and the following themes, amongst others, will be considered:

- Retro-fitting of fleet via a joint application for Clean Bus Technology Fund 2017-18
- Promotion of Low Emission (LEV) and Ultra Low Emission Vehicles (ULEVs)
- Electric Vehicles and charging points
- Sustainable Procurement
- Promotion of Modal Shift
- Reducing emissions from Taxis
- Commercial Vehicles, Freight Consolidation Centres
- Preferential parking tariffs for cleaner vehicles
- Promoting and raising awareness of the benefits of "No Idling Zones"
- Planning Policy
- Public and Business Advice and Raising Awareness
- Implement/enhance existing "Working from Home" policy in order to reduce emissions from commuting staff.

**Table 5.6 Low Emission Air Quality Strategy (LEAQS) Action Summary**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
28	LEAQS Strategy Development and Implementation	Policy Guidance and Development Control	Low Emission Strategy	SBC	2017	End of 2108	Development and implementation of specific initiatives	See action 28a below	In development	June 2108	The LEAQS will focus on a number of initiatives aimed at reducing vehicle emissions from various sources and will form an integral part of the AQ Action planning Program  Cost Low  Potential AQ Impact L-M
28a	Clean Bus Technology Fund Application	Vehicle Fleet Efficiency	Vehicle Retro-fitting	Essex CC, SBC, Colchester BC, Chelmsford CC	2017	2018	Success of bid and number of buses retro-fitted	High	Awaiting announcement from DEFRA due end January 2018	Application made in Nov 2017	£1.2m funding bid to retro-fit buses entering AQMAs in Essex (SCR technology and particle traps)  Cost High  Potential AQ Impact High

## 5.7 Community Engagement

### 5.7.1 Community Engagement and Corporate Aims

The vision of the Council is to “*Create a Better Southend*” supported by the five corporate aims of a “Clean, Safe, Healthy, Prosperous Southend led by an excellent Council”. These principles and values will be reflected in our work and provide a clear focus for actions we take. Our actions will be underpinned by the following Corporate Priorities:

- To create a safe environment across the town for residents, workers and visitors.
- To continue to promote the use of green technology and initiatives to benefit the local economy and environment.
- To encourage and enforce high standards of environmental stewardship.
- To actively promote healthy and active life styles for all.
- To work with and listen to our communities and partners to achieve better outcomes for all.
- To improve the life chances of our residents, especially our vulnerable children and adults, by working to reduce inequalities and social deprivation across our communities.
- To enable communities to be self-sufficient and foster pride in the town.

This is about people and place, fostering a sense of community belonging and self-sufficiency where communities can solve problems locally with our support.

**Table 5.7 Community Engagement Action Summary**

No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Measurable By	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
29	Promote Community Engagement in a local air quality context.	Public Information	Other	SBC	n/a	2018 onwards	Completion of initiatives	n/a	In development	On-going	Cost Low Potential AQ Impact n/a
30	Undertake Business Survey to inform policy decision making for 2017/18 onwards.	Public Information	Other	SBC	n/a	n/a	Completion	n/a	Completed	April 2017	Cost Low Potential AQ Impact n/a

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## Addendum May 2018

As part of a Court judgement on the 2017 UK Air quality plan on 21 Feb 2018, the High Court found that the Government should have legally required a further group of 33 local authorities (the 'third wave' local authorities) **including Southend-on-Sea Borough Council** to take further steps to improve air quality.

These third wave local authorities have road links in exceedance of NO<sub>2</sub> concentration limits in 2018, 2019 or 2020 and are projected in the national modelling to become compliant by 2021. The road link relevant to SBC is the A127, and the projected year of compliance is the end of 2019.

In response to the Court judgment, DEFRA have issued a Ministerial Direction to require these local authorities to develop a feasibility study to consider measures that could bring forward compliance in the shortest possible time.

Alongside the Direction DEFRA issued guidance on how local authorities should develop their Targeted Feasibility Studies and grant letters to provide funding to support the development of the study.

The Targeted Feasibility Studies must be submitted to Government as soon as possible and by 31 July 2018 at the latest.

The studies will form the basis of a supplement to the UK Air Quality Plan to be published by 5th October 2018.

There are five parts to the Targeted Feasibility Study:



- Part 1: Understanding the problem
- Part 2: Developing a long list of measures for addressing the exceedances
- Part 3: Assessing deliverability/feasibility and compiling a short list
- Part 4: Evidencing the short list of measures to identify options that could bring forward compliance
- Part 5: Setting out a preferred option

The outcome of this study will be reported as part of the annual action plan up-date.

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## Appendix A: Response to Consultation

**Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP:**

**If not already implemented or being considered, reasonable suggestions will be assessed on their deliverability/feasibility**

Consultee	Category	Response
Public	Promoting Travel Alternatives Traffic Management	Actions that aim to improve air quality are being implemented. These include the ' cycle Southend' scheme, encouraging walking and using the train. This will cut traffic on the road. Also highway improvements will ease congestion. Working with Planning to improve air quality is also important and effective. Section 106 agreements will promote use of electric cars and the installation of electric charging points
Public	Policy Guidance and Development Control	We were screened from the A127 by tall trees which not only gave us privacy, a nicer outlet but most importantly gave us some protection from air pollution but these have been removed. We were told that the trees were dead and had to be removed but we believe they were removed so the junction could be widened in the future to allow for better access to the new development 'Southend Business Park'. In my mind you have removed a good source of protection and if removing ALL the trees was not necessary this should never have happened. The same species of trees, planted I imagine, at the same time are still in place along the school boundary? A few small trees have been planted but will takes years to mature and give us any screening and protection and nothing like we had before. We think its an insult now put something through the door to tell us about the pollution in our area and to ask for feedback on tackling the problem knowing you have taken away a good source of protection.
	Policy Guidance and Development	Concentrate on areas of known accumulation of standing traffic, especially where they are near to schools and high density of residential property areas. Better sequencing of some traffic lights in the Borough

<p>Public</p>	<p>Control Traffic Management, promoting alternatives Modes of Travel</p>	<p>Greater encouragement not to use cars...make it easier and safer for cyclists and reliable public transport</p> <p>I think along the A127 more trees / bushes could be planted, esp by the bell junction where cars (and esp motorbikes sit revving their engines). The bushes (Ivy) ? could help to stop the fumes . How about along the a127 in the middle more bushes are planted.</p> <p>I'd like to see included in the plan a commitment to planting a significant number of trees in the affected areas. Furthermore, an immediate conservation of any non-private, existing trees within the affected area. As outlined in the BBC News article below, and based upon this study by US-based The Nature Conservancy (TNC), trees can cut air pollution. The study shows that trees can absorb small particulate matter from the air and would be ideally planted alongside the road as a barrier between the road and the residential properties.  <a href="http://www.bbc.co.uk/news/science-environment-37813709">http://www.bbc.co.uk/news/science-environment-37813709</a>  <a href="https://thought-leadership-production.s3.amazonaws.com/2016/10/28/17/17/50/0615788b-8eaf-4b4f-a02a-8819c68278ef/20160825PHAReporFINAL.pdf">https://thought-leadership-production.s3.amazonaws.com/2016/10/28/17/17/50/0615788b-8eaf-4b4f-a02a-8819c68278ef/20160825PHAReporFINAL.pdf</a></p>
<p>Public</p>	<p>Transport Planning and Infrastructure</p>	<p>Make Southend a hostile environment for traffic so that motorists are less inclined to drive. Eg. stop widening junctions and stop chopping down pollution control trees.</p> <p>Park and Ride scheme (a proper one)</p>
<p>Public</p>	<p>Transport Planning and Infrastructure</p>	<p>Reducing private car use by investments in the bus fleet and other forms of public transport and making public transport or bicycling more convenient. Restricting private car use requires strong investment in public transport infrastructure, where alternative journey methods are not viable, steps could be taken with the aim of reducing emissions from all vehicles (making transport cleaner). Many properties in the borough do not have a private driveways making ownership of electric cars not practical - on street charging points or street light charging points could make a difference in people's choice of vehicle. Looking at factors other than road use; emissions from buildings through gas and oil consumption and emissions through the construction of new developments have a significant impact on air quality. Central heating and boilers account for a large amount of air emissions. Steps could be taken to target reducing energy use by buildings and reducing emissions from energy use by buildings (making electricity and heat generation cleaner). Commitments could also be undertaken to run campaigns to raise awareness of air pollution.</p>

Public	Policy Guidance and Development Control	<p>Research shows that green plants have an even bigger impact on removing nitrogen dioxide from the air than previously thought, removing 40% Please see this article for more information: <a href="https://www.acs.org/content/acs/en/pressroom/presspacs/2012/acs-presspac-august-29-2012/green-plants-reduce-pollution-on-city-streets-up-to-eight-times-more-than-previously-believed.html">https://www.acs.org/content/acs/en/pressroom/presspacs/2012/acs-presspac-august-29-2012/green-plants-reduce-pollution-on-city-streets-up-to-eight-times-more-than-previously-believed.html</a> We should have 'green billboards' along the road and in the central reservation or plant the central reservation with grasses and have more green plants generally.</p>
Public	Transport Planning and Infrastructure	<p>Take the traffic lights off the roundabout at Cuckoo Corner and we will get rid of the standing traffic which has increased ten fold between Cuckoo Corner and the Bell since they were put in.. Also it will decrease standing traffic between Cuckoo Corner and Fairfax Drive junction to Victoria Avenue and stop sending traffic along Manners Way leading up to Cuckoo Corner.</p>
Public	Alternatives to private vehicle use	<p>Car clubs None will work.</p>
Public	Transport Planning and Infrastructure, Promoting Travel Alternatives, Policy Guidance and Development Control	<p>A real commitment from the council to clean air so that real action is taken that actually makes a difference. Real political leadership to convince the public that real action needs to be taken.</p> <p>As Kent Elms junction not completed yet, The Bell improvements will be delayed</p> <p>Changing attitudes of people through awareness</p> <p>Lack of enforcement when measures breached. Lack of engagement by those encouraged to use the measures.</p>
Public	Transport Planning and Infrastructure, Promoting Travel	<p>Money and housebuilding targets are obstacles. We are nowhere near being a low carbon city, we have no levers to pull to genuinely get people out of cars and onto bikes and foot or strangers' cars, mass uptake of electric cars are</p>

	<p>Alternatives</p>	<p>decades away, and as for park and ride that was a fiasco which has been and gone and takes cars past The Bell anyway so irrelevant. Travel Plans are thus just lip service. Likewise for cycling, eg electric bike stands are nowhere near The Bell. We either need to CPO houses near roads to artificially end the AQSR breach, or close roads, or reduce vehicles. The Bell monitoring needs to extend up Rochford Road to Woodgrange Drive, not just the alley, as queues routinely stack back to there and you have only measured the mean average - at peak times are choking to death there. You may have to price some diesels off the road and government should reimburse that as diesels were their idea. Need to ban lorries, buses and diesels from Rochford Road and Manners Way. Stobart may need to fund access from the west to the airport so lorries and passengers are not needlessly dragged through housing to the east and doubled back to the airport. The user must pay especially as there is no discretionary spend available unless of course we reallocate funds from feasibility studies and architectural plans to saving lives. We can't wait for the Intelligence Hub as we already have data, we need reduces emissions not increased cabling and it would take two year even if it goes to plan. LTP3 is no use now as it won't achieve anything until 2021. Putting in a left turn lane for eastbound A127 is not due until March 2019 at best and will simply change the shape of the breach zone as traffic will do less idling at The Bell, only to achieve more traffic accelerating up Rochford Road attracted by the faster turn, especially diesel lorries currently put off by the sharp turn and preferring Manners Way. It is improper to text victims to stay away from roads.</p>
<p>Public</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p>	<p>Required investment could be a barrier if the council do not have the sufficient resources needed.</p> <p>The council having the money and the manpower to carry out actions to help alleviate the fumes.</p> <p>The Council needs to admit that the traffic lights on Cuckoo Corner roundabout have undoubtedly caused the knock on effect of high pollution due to the amount of standing traffic they have created. This can also be said of the chaos caused at Victoria Circus. Once these facts have been acknowledged then the only barrier to overcome is actually removing the traffic lights.</p> <p>You need to consult all of the property owners who border the Bell Junction AQMA. The highlighted yellow properties is not enough.</p>
<p>Public</p>	<p>Transport Planning and Infrastructure, Promoting Travel</p>	<p>Greater communication with and engagement of the public as a whole; I have heard about this as I have a keen interest in local issues and green issues but there is a lack of awareness in the general public.</p>

	<p>Alternatives</p>	<p>I have lived on this stretch over road between Cuckoo Corner and the Bell for 22 years. When the lights were going to be put into the roundabout I monitored the traffic myself. In the morning rush hour with only two lanes approaching the roundabout from the Bell the most amount of cars queuing was five deep. They now go right back to the Bell even though a third lane was put in place. When its not rush hour traffic still regularly piles back up to Topps Tiles (30 cars back). As soon as the light were put on I could taste the pollution in the air when I went outside my front door. The only time we don't get standing traffic is on the odd occasion when the lights haven't been working at all and traffic has flowed freely again. Even at midnight you can be left waiting for a green light as the traffic lights are light sensitive. If the traffic lights go out of sync in rush hour the effects are even worse. Queues go up Manners Way as far as the parade of shops which is near to the airport!! Traffic becomes gridlocked on the roundabout, it is appalling to have suffered it for so long.</p> <p>I would like an explanation as to how the planned road layout changes to the Bell junction will reduce air pollution. I cannot find this published anywhere and it seems to be the single biggest planned action that could reduce air pollution in the area.</p>
<p>Public</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p>	<p>Replace whoever caused or allowed a) removal pollution control barrier at The Bell and b) junction widening.</p> <p>Research shows that green plants have an even bigger impact on removing nitrogen dioxide from the air than previously thought, removing 40% Please see this article for more <span style="float: right;">informat</span>  <a href="https://www.acs.org/content/acs/en/pressroom/presspac/2012/acs-presspac-august-29-2012/green-plants-reduce-pollution-on-city-streets-up-to-eight-times-more-than-previously-believed.html">https://www.acs.org/content/acs/en/pressroom/presspac/2012/acs-presspac-august-29-2012/green-plants-reduce-pollution-on-city-streets-up-to-eight-times-more-than-previously-believed.html</a> We should have 'green billboards' along the road and in the central reservation or plant the central reservation with grasses and have more green plants generally</p> <p>There is a need to look at other Borough plans/consultations which link in and have an effect on this subject e.g. the current primary school catchment consultation. Concerns raised that areas are under immediate flight paths.</p>

<p>Public</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p>	<ul style="list-style-type: none"> <li>We live in Larke Rise. My concern is that we were screened from the A127 by tall trees which not only gave us privacy, a nicer outlet but most importantly gave us some protection from air pollution but these have been removed. We were told that the trees were dead and had to be removed but we believe they were removed so the junction could be widened in the future to allow for better access to the new development 'Southend Business Park'. In my mind you have removed a good source of protection and if removing ALL the trees was not necessary this should never have happened. The same species of trees, planted I imagine, at the same time are still in place along the school boundary? A few small trees have been planted but will takes years to mature and give us any screening and protection and nothing like we had before. We think its an insult now put something through the door to tell us about the pollution in our area and to ask for feedback on tackling the problem knowing you have taken away a good source of protection.</li> </ul>
<p>Historic England</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p>	<p>We have reviewed the Air Quality Action Plan Technical Report and Non-Technical Summary. As a general comment, Historic England welcomes the proposed measures to improve the Air Quality in the Borough. Air quality can affect the historic environment in a number of ways including affecting the masonry of buildings, or the general setting in the broadest sense of heritage assets (eg reduction in noise and vibration and improvement in air quality through reduction in traffic etc).</p> <p>We welcome section 6.4 which seeks to link air quality considerations with other policy areas including planning and note the intention to produce an Air Quality Supplementary Planning Document. There are certainly benefits to be achieved through greater consideration of air quality, climate change and energy efficiency in the Planning process.</p>
<p>Public</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p>	<p>There are however occasions when certain historic environment considerations may outweigh conflict with air quality considerations. The use of modern construction techniques on a listed building, for example, may detrimentally affect existing historic fabric elsewhere in the building therefore risking damage to the heritage asset contrary to the objective of the NPPF to conserve and enhance the historic environment. We raise concerns that this type of construction may not be appropriate for certain developments affecting the historic environment. A sustainable approach should secure a balance between the benefits that such development delivers and the environmental costs it incurs. The policy should seek to limit and mitigate any such cost to the historic environment. Listed buildings, buildings in conservation areas and scheduled monuments are exempted from the need to comply with energy efficiency requirements of the Building Regulations where compliance would unacceptably alter their character and appearance. Special considerations under Part L are also given to locally listed buildings, buildings of architectural</p>

		<p>and historic interest within registered parks and gardens and the curtilages of scheduled monuments, and buildings of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture. In developing policy covering this area you may find the Historic England guidance Energy Efficiency and Historic Buildings - Application of Part L of the Building Regulations to historically and traditionally constructed buildings <a href="https://historicengland.org.uk/images-books/publications/energy-efficiency-historic-buildings-ptl/">https://historicengland.org.uk/images-books/publications/energy-efficiency-historic-buildings-ptl/</a> to be helpful in understanding these special considerations. Finally, we should like to stress that this opinion is based on the information provided by the Council in its consultation. To avoid any doubt, this does not affect our obligation to provide further advice and, potentially, object to specific proposals, which may subsequently arise where we consider that these would have an adverse effect upon the historic environment.</p>
<p>Natural England</p> <p>Friends of the Earth</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives</p> <p>Transport Planning and Infrastructure, Promoting Travel Alternatives, Policy Guidance and Development Control, Policy Guidance Public Health</p>	<p>Natural England does not consider that this Air Quality Area Action Plan poses any likely risk or opportunity in relation to our statutory purpose, and so does not wish to comment on this consultation.</p> <p>I am responding to the air quality action plan public consultation on behalf of SEE FoE.</p> <p>The SEE FoE team finds Southend Borough Council (SBC) actions to be exceptionally frustrating, as you may have detected from my last letter on the topic in The Echo, but I will keep this response polite. The team has however agreed to help with the delivery of 20,000 leaflets that I have just sent for printing. That leaflet tackles pollution and other issues, and there we have allowed the frustration with SBC to show !</p> <p>Method of response to the consultation.</p> <p>Your online form doesn't quite fit with the response that is needed and so I am responding via email.</p> <p>Background</p> <p>The SBC action plan notes that there are serious health consequences of toxic air but doesn't spell out the detail. I wonder if the councillors knew just how serious the situation is whether they might take the matter more seriously. I ask that the consequences are put into future documents. Poor air quality: -</p> <ul style="list-style-type: none"> <li>· Permanently damages the lungs of children.</li> </ul>



		<ul style="list-style-type: none"> <li>· Causes cardio vascular disease and heart attacks.</li> <li>· Causes 40,000 premature deaths in the UK.</li> <li>· Causes dementia, cancer and obesity.</li> <li>· Causes asthma attacks in vulnerable people.</li> <li>· Is linked to falling sperm counts (halved over the last 40 years).</li> <li>· Is linked to premature births.</li> </ul> <p>That last point has only recently been drawn to my attention and, in case that is the case for SBC too, I attach this link: - <a href="https://postcourier.com.pg/air-pollution-linked-premature-births-scientists-warn/">https://postcourier.com.pg/air-pollution-linked-premature-births-scientists-warn/</a></p>
<p>Friends of the Earth</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives, Policy Guidance and Development Control, Policy Guidance Public Health</p>	<p>SBC: A history fo failure</p> <p>Before an action plan can move forward effectively it is important to acknowledge the mistakes of the past: -</p> <ul style="list-style-type: none"> <li>· SBC has historically pursued land use policies designed to increase traffic, including relocating the town centre swimming pool and large shopping facilities to the edge of town and plans to relocate the football club, perhaps with a shopping centre, cinema and flats, to the edge of town. The council's poor land use planning increases car use and is guaranteed to increase pollution.</li> <li>· By expanding Southend Airport SBC knew this would increase traffic (traffic which contributes to the toxic air in the council's one "Air Quality Management Area").</li> <li>· SBC has historically sought to increase the car parking provision thereby increasing traffic in the town. It continues to seek to increase pollution from cars by vigorously pursuing a new car park as part of the planned seafront museum scheme and it has recently purchased the former gas works site for £7 million and plans to spend a further £2 million there to build a new car park.</li> </ul>

		<ul style="list-style-type: none"> <li>· SBC has failed to encourage greater bus use by refusing to support selected areas of bus lane along the A13. This signal to the bus operators made it clear to the private sector that SBC had limited interest in promoting public transport. This in turn impacts upon the bus operators' willingness to invest larger sums in zero emission vehicles.</li> <li>· SBC was so keen to facilitate high levels of car use that it was even willing to construct some of the most dangerous cycle lanes in the country to preserve as many car parking bays as possible – the network of cycle lanes beside car parking bays.</li> <li>· SBC has spent many tens of £millions on road widening and junction alternations along the A127, facilitating greater car use and decreasing the public funds that would otherwise have been allocated to public transport, walking &amp; cycling.</li> </ul>
<p>Friends of the Earth</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives, Policy Guidance and Development Control, Policy Guidance Public Health</p>	<p>"Soft" measures to tackle air pollution</p> <p>The action plan advocates the use of "soft" persuasive measures to encourage residents to use our cars a little less. Unfortunately soft measures cannot overcome the weight of pressure that the council exerts to encourage us to use our cars more. While this group supports a range of "soft" measures the public health crisis outlined above necessitates more dynamic action.</p> <p>What is needed</p> <p>SBC policy on development and land use planning must be completely transformed so that all decisions are aligned with the overriding need to reduce car use and pollution. SBC policy should be changed to specifically support traffic and car parking reduction policies. It also needs to implement policies that will support a rapid shift to zero emission vehicles. This group calls for: -</p> <ul style="list-style-type: none"> <li>· A ban on new edge of town/out of town developments.</li> <li>· The vast majority of new homes must be built around the public transport hubs and along the public transport corridors.</li> <li>· At least half of all new flats should be offered at a discount if the owners do not own or use a car (enforced by parking restrictions in neighbouring streets).</li> </ul>

- All land use policies must be designed so as to reduce car ownership and car use.
- SBC should seek to engage with developers to build more flats for the retired along public transport corridors, with no provision for car parking (to encourage the retired to stop driving sooner and to release more family sized houses for young families).
- SBC must engage with seafront traders and the business community in a new way - explaining that we may see 1 feet of sea level rise by 2050 and there is a chance of over 8 feet of sea level rise by 2100. Together with increased extreme weather events, that come with rapid climate change, seafront traders must be helped to understand they may lose all assets by 2050. If this outcome is to be avoided it is absolutely essential that every sector of society joins an unprecedented effort to reduce energy use, including in road transport.
- An ultra low emissions zone should be introduced in the centre of Southend and gradually expanded outwards (see the Oxford and London initiatives).
- Year 1 zone should be south of Queensway, North of Royal Terrace, West of the A1160 and East of Princes Street/Runwell Terrace/Prittlewell Square.
- Year 2 zone should be extended to include all central Southend seafront car parks.
- Year 3 zone should be further extended north to include 200 metres either side of Victoria Avenue from Southend Victoria Station to Cuckoo Corner roundabout.
- SBC should establish if an ultra low emissions zone could be enforced by the civil enforcement team as they patrol car parks. Both public and privately owned car parks should be monitored.
- (See: <https://tfl.gov.uk/modes/driving/ultra-low-emissionzone/check-your-vehicle?intcmp=32646>)
- SBC should engage with Thurrock, Basildon and Chelmsford councils seeking agreement to implement ultra low emission zones in the centre of each town with these being expanded every year.
- An A127 congestion charging regime should be investigated to establish if this would reduce total traffic or merely shift vehicles from the A127 to less suitable roads. If modelling shows that total traffic would be reduced by

		<p>road charging this group would also support that proposal.</p> <ul style="list-style-type: none"> <li>· A programme should be initiated of allocating an ever growing proportion of car park bays to zero emissions vehicles (5% per annum), with such bays being positioned at the most convenient positions of each car park for shoppers/users (only disabled drivers should be given greater priority).</li> </ul>
<p>Friends of the Earth</p>	<p>Transport Planning and Infrastructure, Promoting Travel Alternatives, Policy Guidance and Development Control, Policy Guidance Public Health</p>	<ul style="list-style-type: none"> <li>· SBC should undertake a new review into the use of bus lanes along the A13, developing a programme that will support rapid growth in bus use; encouraging car drivers to use the bus instead of driving along the A127.</li> <li>· Bus use growth policy should be developed with bus operators; with SBC agreeing to radical and favourable policies being deployed if bus operators invest in zero emission/ultra low emissions vehicles.</li> <li>· SBC should consider bringing control of the buses back under direct public control.</li> </ul>
<p>DEFRA (December 2017)</p>	<p>Commentary</p>	<p>This Appraisal Report covers the Draft Air Quality Action Plan submitted by Southend Borough Council in relation to the AQMA declared along a stretch of the A217, Prince Avenue, Southend in November 2016. The AQMA was declared for exceedance of the annual mean objective for nitrogen in the area also known as "The Bell Junction".</p> <p>There are continuing exceedances of the annual mean objective for nitrogen dioxide at a single monitoring location within the AQMA, close to the Bell Junction, and also at additional locations outside of the current AQMA. These issues were discussed within the response to the 2017 ASR report for Southend in July 2017.</p> <p>In addition to developing an Action Plan, the Council are expecting to issue a draft Low Emission Strategy by the end of 2017.</p> <p>The current areas of potential exceedance include the proposed new Kent Elms junction developments on the A127 as described in the ASR report, are likely to impact on changes to traffic flows along this section of the A127. This suggests that the impact of measures proposed within the draft AQAP need to include an extended area along the A127, where Southend Borough Council are the responsible authority.</p> <p>The timetable for progress on the A127 AQMA junction scheme improvements is not clear, however a data of 2017 was stated for expected completion.</p>

		<p>The draft Action Plan is the first Action Plan under development for Southend.</p> <p>This response forms part of the statutory consultation on the draft Action Plan that is subject to further development following public consultation.</p> <p>The Council is advised to take consideration of the commentary below in the further development of the Air Quality Action Plan.</p> <p>The Action Plan requires re-submission using the latest Action Plan report template from Defra which can be found <a href="#">here</a>.</p> <p>Commentary</p> <ol style="list-style-type: none"><li>1. The Council have submitted a draft Air Quality Action Plan in it's early stages of development to address the AQMA declared along a section of the A217 Prince Avenue, Southend.</li><li>2. The A217 at the nearby Kent Elms Junction is the subject of a major infrastructure project. The impact of this scheme on traffic flows and traffic management along the area designated within the AQMA has yet to be determined, but may have a significant impact upon the extended area close to the A127 subject to raised pollution levels.</li><li>3. The draft AQAP has included a source apportionment of road traffic sources, but it is not evident that the procedure outlined in Box 7.5 of LAQM.TG(16) has been followed. Essentially the source apportionment has reviewed vehicle emissions and highlighted the relative impact of the contribution of emissions from different vehicle classes and fuel types. There is no detail provided in relation to what data was used within this process other than a reference to local traffic data.</li><li>4. If the data from source apportionment is to reliably inform the Action Plan process, the traffic data needs to include local details on traffic congestion, queuing and delays on the relevant road sections. It is only when</li></ol>
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		<p>emissions from congested traffic are accounted for that a realistic picture of traffic emissions can be considered as a basis for developing further actions.</p> <p>5. The purpose of source apportionment is to provide an informed starting point in relation to where measures that are likely to be effective in addressing the pollution exceedances, need to be targeted. It is likely that traffic management measures that consider the management of traffic through the AQMA area will be required to address the pollution exceedances.</p> <p>6. The nature of the extent of the challenge at the Bell Junction AQMA simply states that there is an exceedance of 4µg/m<sup>3</sup>, which requires addressing. The expectation within an Action Plan is to derive estimates of the required reductions in traffic emissions levels, as a basis for determining further action.</p> <p>7. This process is described in detail within the latest Technical Guidance LAQM TG(16) from Defra in Chapter 2, Section 7.104-106 and Box 7.6. The Guidance makes clear that:</p> <p>“The AQAP should only be considered in detail once the source and extent of the problem are clearly understood”. [Ref: LAQM TG(16) para 2.30]</p> <p>8. The draft AQAP makes clear that the measures within the plan have been written to incorporate priority work areas which is acceptable provided the subsequent list of measures are then subject to a process of feasibility, cost benefit assessment, and impact assessment, in relation to delivering the required levels of emissions reductions suggested from source apportionment. There need to be measures developed in the AQAP that specifically target the key sources that give rise to the pollution exceedances alongside more generic measures linked to current policies and programmes. [Ref:LAQM TG(16) para 2.36-2.42]</p> <p>9. The Technical Guidance then makes clear that for measures that have been subject to impact assessment and prioritisation, that it is required to agree monitoring and evaluation of success. [Ref:LAQM TG(16) para 2.43-2.45]</p> <p>10. The Technical Guidance gives details on Consultation, highlighting that Local Authorities should consider the extent and degree of consultation at both a local level, and for Statutory Consultation required during the formulation of their AQAP. [Ref: LAQM TG(16) para 2.46-2.50]</p> <p>11. The draft AQAP outlines the steps in the AQAP process but does not make clear what steps the Council expects to make in relation to further development of the AQAP. It is not clear whether a Steering Group has been</p>
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		<p>formed and to what extent they may have influenced the measures within the current draft AQAP. The Technical Guidance makes clear that early engagement with appropriate stakeholders is vital at the outset. [Ref: LAQM TG(16) para 2.31ff]</p> <p>12. The draft AQAP also refers to the Consultation Process and Steering Group, and refers to potential internal and external stakeholders, suggesting that no further consultation on the draft AQAP is currently taking place.</p> <p>13. The measures listed within the draft AQAP clearly represent a sound basis for beginning the Action Plan process, but as outlined above there is considerable further development of measures required before a final Action Plan is developed.</p> <p>14. In order for the plan to be effective in addressing emissions control to reduce air pollution emissions, there needs to be an additional level of assessment applied at the start of the process.</p> <p>15. This process is clearly described for the development of Air Quality Action Plans, within the latest Policy and Technical Guidance from Defra, particularly Chapter 2 of LAQM TG(16), which details the recommended approach for developing an action plan. The basis of the approach involves gaining an understanding of the current level of excess emissions giving rise to the air quality exceedance, with knowledge from a source apportionment of which pollution sources are contributing to the excess. Without this approach, there is no basis for assuming that measures that are otherwise prescribed to reduce emissions are likely to be effective.</p> <p>16. Hence air pollution emissions reduction targets, should underpin the further development of Action Plan.</p> <p>17. The latest Technical Guidance LAQM TG(16), para 2.69 makes clear, as a minimum AQAP's should include the following:</p> <ul style="list-style-type: none"><li>• Quantification of source contributions (e.g. HGVs, buses, taxis, other transport, industrial or domestic sources etc.) responsible for the exceedance of the relevant objective; knowing the source of the problem will allow the AQAP measures to be effectively targeted;</li><li>• Quantification of impacts of proposed measures including, where feasible, expected emission and concentration reductions (either locally obtained and/or via national monitoring/modelling statistics). It is important that the local authority shows how it intends to monitor and evaluate the effectiveness of the plan;</li></ul>
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		<p>18. The Council will need to consider the impact of the highways infrastructure developments from the Kent Elms junction on the AQMA section of the A127, and any other relevant highways schemes, when assessing the measures that are likely to be effective in addressing effective actions to deliver emissions reductions.</p> <p>19. It is clear that the draft AQAP is at an early stage of development and not yet at a stage where Public Consultation is appropriate. The report should be presented for public consultation, when AQAP measures have been subject to further assessment and prioritisation, as discussed within this report.</p> <p>20. The current draft AQAP has not been presented on the current Defra AQAP Template. All future AQAP reports need to be presented using the latest Defra AQAP Template which can be located on this web page:</p> <p><a href="https://laqm.defra.gov.uk/review-and-assessment/report-templates.html">https://laqm.defra.gov.uk/review-and-assessment/report-templates.html</a></p>
<p>DEFRA May 2018</p>	<p>Commentary</p>	<p>This Appraisal Report covers the Draft Air Quality Action Plan submitted by Southend Borough Council in relation to the AQMA declared along a stretch of the A217, Prince Avenue, Southend in November 2016. The AQMA was declared for exceedance of the annual mean objective for nitrogen in the area also known as “The Bell Junction”.</p> <p>The draft Action Plan has been re-submitted using the latest report template, further to a previous submission and appraisal in November 2017.</p> <p>The draft Action Plan has been approved by the Cabinet and Full Council and the report state that it will be subject to an annual review, by reporting in the Annual Status Reports.</p> <p>An addendum to this AQAP draft report makes clear that Defra have identified</p>



		<p>Southend-on-Sea Borough Council within a group of 33 ('third wave') local authorities where further steps are required to improve local air quality. This now requires the local authority to develop a feasibility study to consider measures that could bring forward compliance in the shortest possible time.</p> <p>For Southend Borough Council, the road link relevant to SBC is the A127, and the projected year of compliance is the end of 2019. The Council are now required to submit their Targeted Feasibility Study to Government as soon as possible and by 31 July 2018 at the latest. The study will be included as a supplement to the UK Air Quality Plan to be published by 5th October 2018.</p> <p>The current AQMA is declared for the Bell Junction, yet the most recent ASR report highlighted that three of the four monitoring sites showing exceedances are outside of the AQMA boundary, including the Kent Elms junction and an extended area along Victoria Avenue.</p> <p>This continues to suggest that the impact of measures proposed within the draft AQAP need to include an extended area along the A127, where Southend Borough Council are the responsible authority.</p> <p>The AQAP report highlights that the Council has simultaneous initiatives that can expect to influence the management of traffic through the areas identified with exceedances of air quality objectives, including the main priorities identified for action:</p>
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- Priority 1 - Assess the air quality impact of the preferred option (of three) for the Bell Junction AQMA, A127 Strategic Highway Improvement.
- Priority 2 - Assess the air quality impact of the Kent Elms A127 Strategic Highway Improvement at this location, as well as the Bell Junction AQMA further east.
- Priority 3 - Development of a Low Emission Air Quality Strategy (LEAQS) which will attempt to target diesel cars (18%), diesel LGVs(13%) and buses (15%), all of which contribute significantly to the overall NO<sub>2</sub> pollution burden in the AQMA and on our roads generally.
- Priority 4 – Southend Intelligence Hub – SMART CITY Journey.

This response forms part of the statutory consultation on the draft Action Plan that is subject to further development.

The Council is advised to take consideration of the commentary below in the further development of the Air Quality Action Plan.

### **Commentary**

1. Many of the comments made in respect to the latest ASR and previous draft Action Plan report are still relevant.
2. The Council have re-submitted a draft Air Quality Action Plan to address the AQMA declared along a section of the A217 Prince Avenue, Southend. The

		<p>evidence that is currently available from latest monitoring suggests that there are pollution hotspots outside the designated AQMA at Bell Junction.</p> <ol style="list-style-type: none"><li>3. It will be important to ensure that the monitoring programme is extended to cover areas along the A127 and Victoria Avenue that may be subject to exceedances of the air quality objectives. Areas of further exceedances should be included within the AQMA boundary, and taken into consideration for development of AQAP measures.</li><li>4. The road network through Southend, including the section of the A127 within the AQMA has clearly been subject to some significant developments, including the major infrastructure project to the A217 at the nearby Kent Elms Junction.</li><li>5. The impact of this scheme on traffic flows and traffic management along the area designated within the AQMA has yet to be determined, but may have a significant impact upon the extended area close to the A127 subject to raised pollution levels.</li><li>6. Key Action Plan measures for further development within the latest draft AQAP report include:<ul style="list-style-type: none"><li>• Review the current position at A127 Kent Elms Crossroads and junction of West Street and Victoria Avenue where diffusion tube data suggests an exceedance. Real time automatic monitoring as part of a Detailed Assessment is being considered.</li><li>• The A127 Kent Elms Corner Junction alterations aimed at improving traffic flow, reducing queue length and congestion.</li><li>• Review the current AQMA boundary with a view to extending the boundary to</li></ul></li></ol>
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		<p>include West Street and the Kent Elms junction/newly identified areas of exceedance.</p> <ol style="list-style-type: none"><li>7. It appears that a detailed assessment of the strategic highway network in Southend is required. This could be used to determine the extent that further traffic management measures can be used to reduce emissions in key pollution hotspots.</li><li>8. There is some doubt on the validity of the calculations presented in the report used as a basis for determining relevant AQAP measures. We have previously commented on the figures presented for required level of emissions reductions, based upon source apportionments.</li><li>9. There remains some significant doubt over the calculation presented within section 3.9 of the report. The nature of the extent of the challenge at the Bell Junction AQMA simply states that there is an exceedance of <math>4\mu\text{g}/\text{m}^3</math>, which requires addressing. The expectation within an Action Plan is to derive estimates of the required reductions in traffic emissions levels, as a basis for determining further action.</li><li>10. The figures presented in section 3.9 appear to refer to monitoring data from a background monitoring site, which is unlikely to be representative of roadside pollution in the AQMA.</li></ol>
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		<p>11. The report also refers to a Detailed Assessment that was completed in July 2016, in relation to the Bell Junction. We have previously commented that no details of this assessment have been presented, yet the report states that through the use of ADMS-Roads modelling, concentrations at relevant receptors at The Bell junction and Cuckoo Corner were predicted. This identified that the maximum concentration in this area was estimated at Prince Avenue on the approach to Cuckoo Corner.</p> <p>12. The report states, <i>“However, as part of the Bell Junction AQMA Strategic Highway Improvement impact assessment, further analysis of the required reductions in traffic emissions from the different vehicle categories will be undertaken. Parameters such as average speed and queue length will also be assessed in order to provide a basis for future monitoring of the effectiveness of the preferred option”</i>.</p> <p>13. We recommend that priority is made to carry out this assessment as a basis for re-evaluating the level and extent of emissions reductions required across the major road network in Southend. This should be used to inform the further development of the action plan.</p> <p>14. If the data from source apportionment is to reliably inform the Action Plan process, the traffic data needs to include local details on traffic congestion, queuing and delays on the relevant road sections. It is only when emissions from congested traffic are accounted for that a realistic picture of traffic emissions can be considered as a basis for developing further actions.</p>
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		<p>15. The Council will need to consider the impact of the highways infrastructure developments from the Kent Elms junction on the AQMA section of the A127, and any other relevant highways schemes, when assessing the measures that are likely to be effective in addressing effective actions to deliver emissions reductions.</p> <p>16. The purpose of source apportionment is to provide an informed starting point in relation to where measures that are likely to be effective in addressing the pollution exceedances, need to be targeted. It is likely that traffic management measures that consider the management of traffic through the AQMA area will be required to address the pollution exceedances.</p> <p>17. The latest Technical Guidance LAQM TG(16) from Defra in Chapter 2 highlights the essential elements in relation to what makes an effective AQAP. Paragraph 2.09-2.19 lists the key common requirements for developing an effective AQAP, in relation to ensuring there is appropriate local monitoring and assessment (source apportionment) as a basis for developing relevant measures.</p> <p>18. LAQM TG(16) Section 7.104-106 and Box 7.6. makes clear that: <i>“The AQAP should only be considered in detail once the source and extent of the problem are clearly understood”.</i> [Ref: LAQM TG(16) para 2.30]</p> <p>19. The draft AQAP makes clear that the measures within the plan have been written to incorporate priority work areas which is acceptable provided the</p>
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		<p>subsequent list of measures are then subject to a process of feasibility, cost benefit assessment, and impact assessment, in relation to delivering the required levels of emissions reductions suggested from source apportionment. There need to be measures developed in the AQAP that specifically target the key sources that give rise to the pollution exceedances alongside more generic measures linked to current policies and programmes. [Ref:LAQM TG(16) para 2.36-2.42]</p> <p>20. The Technical Guidance then makes clear that for measures that have been subject to impact assessment and prioritisation, that it is required to agree monitoring and evaluation of success. [Ref:LAQM TG(16) para 2.43-2.45]</p> <p>21. Responses from the public consultation (Appendix A) suggest that there is significant local opinion that some recent infrastructure changes, including the installation of traffic lights at Cuckoo Corner Roundabout (Bell Junction) have resulted in additional queuing and added to local pollution levels.</p> <p>22. These comments should emphasise the need to develop a co-ordinated approach across the Council to clarify the impacts of recent infrastructure changes, and ensure further schemes are assessed in relation to air quality impacts.</p> <p>23. The measures listed within the draft AQAP clearly represent a sound basis for developing the Action Plan process, but as outlined above there is a requirement for further assessment of measures before the Action Plan can be</p>
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		<p>completed.</p> <p>24. In order for the plan to be effective in addressing emissions control to reduce air pollution emissions, there needs to be an appropriate level of source apportionment and assessment of traffic management schemes applied to at the start of the process. We are unable to comment further on the source apportionment as the details within the detailed assessment report have not been presented.</p> <p>25. This process is clearly described for the development of Air Quality Action Plans, within the latest Policy and Technical Guidance from Defra, particularly Chapter 2 of LAQM TG(16), which details the recommended approach for developing an action plan. The basis of the approach involves gaining an understanding of the current level of excess emissions giving rise to the air quality exceedance, with knowledge from a source apportionment of which pollution sources are contributing to the excess. Without this approach, there is no basis for assuming that measures that are otherwise prescribed to reduce emissions are likely to be effective.</p> <p>26. Hence air pollution emissions reduction targets, should underpin the further development of Action Plan.</p> <p>27. The latest Technical Guidance LAQM TG(16), para 2.69 makes clear, as a minimum AQAP's should include the following:</p> <ul style="list-style-type: none"><li>• Quantification of source contributions (e.g. HGVs, buses, taxis, other transport, industrial or domestic sources etc.) responsible for the</li></ul>
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		<p>exceedance of the relevant objective; knowing the source of the problem will allow the AQAP measures to be effectively targeted;</p> <ul style="list-style-type: none"> <li>Quantification of impacts of proposed measures including, where feasible, expected emission and concentration reductions (either locally obtained and/or via national monitoring/modelling statistics). It is important that the local authority shows how it intends to monitor and evaluate the effectiveness of the plan;</li> </ul>
<p>SBC Consultation Round 2 April 2018</p>		<p><b>Question 2: Are any significant actions/initiatives already being undertaken or committed to that could improve air quality?</b></p> <p>No</p> <p><b>Question 3: Are any significant actions/initiatives missing that could improve air quality?</b></p> <p>From the moment the traffic lights were installed on Cuckoo Corner roundabout the level of queuing traffic has increased tenfold causing a haze of fumes which was never there before outside my house, which is between Cuckoo Corner and the Bell junction. Also badly affected is Manners Way approaching Cuckoo Corner.</p> <p><b>Question 3: Are any significant actions/initiatives missing that could improve air quality?</b></p>

From the moment the traffic lights were installed on Cuckoo Corner roundabout the level of queuing traffic has increased tenfold causing a haze of fumes which was never there before outside my house, which is between Cuckoo Corner and the Bell junction. Also badly affected is Manners Way approaching Cuckoo Corner.

**Question 4: Are any of the Actions listed in the AQAP Technical Report no longer relevant?**

Yes, it says there is a park and ride system in place, however, I have never seen it and I don't know where it is.

**Question 5: Are there any barriers that need to be overcome for us to take up these measures in the plan?**

The Council needs to swallow its pride and admit along with the Victoria Circus fiasco that's the only reason the Air Quality is so poor along this stretch of Victoria Avenue and Prince Avenue is because the traffic lights were installed on Cuckoo Corner roundabout and prior to this we didn't have a problem. I have lived in the same house for over 20 years and only the other day the smog was so bad over Priory Park I couldn't get my breath and therefore couldn't walk my dogs (I don't suffer from breathing problems normally). I have had a constant grazed feeling in my throat for the past two years which I can only put down to this terrible situation.

**Question 6: Please tell us about anything else you feel is necessary as part of the Air Quality Action Plan**

When on the odd occasion the traffic lights have stopped working completely, the traffic flows perfectly well as it did prior to the lights being installed on Cuckoo Corner roundabout. On day one I personally phoned the Council to tell them how bad the queues were and since then have had to report serious congestion when the lights go out of synchronisation causing queues going up to the Bell junction on Prince Avenue and at least two thirds along Manners Way towards the airport as well as Victoria Avenue and Priory Crescent. This happens probably weekly or fortnightly. It is intolerable and all the other measures you have laid out in your Action Plan are flimsy and on the hope that suddenly everyone is going to cycle or use public transport.

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## Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 – Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)

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## Appendix C:

1. [Link to Detailed Assessment 2016](#)
2. [Link to Annual Status Report 2017](#)

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## Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
µgm <sup>-3</sup>	Microgram – One millionth of a gram
LEV	Low Emission Vehicle
ULEV	Ultra Low Emission Vehicle
LDV	Light Duty Vehicle

## References

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2. DEFRA LAQM Policy Guidance LAQM  
PG16:<http://laqm.defra.gov.uk/documents/LAQM-PG16-April-16-v1.pdf>
3. DEFRA LAQM Technical Guidance LAQM  
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4. Public Health Outcomes Framework: <http://www.phoutcomes.info/>
5. Air Quality - A Briefing for Directors of Public Health, March 2017
6. DEFRA Low Emission Strategies - Good Practice Guide, January 2010
7. DEFRA Air Quality Plan for the achievement of the EU air quality limit value for nitrogen dioxide in Southend Urban Area (UK0021), December 2015
8. DEFRA UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations, July 2017 <http://uk-air.defra.gov.uk>
9. LAQM 2016 Detailed Assessment for Southend-on-Sea Borough Council:  
Amec, Foster, Wheeler Environment and Infrastructure UK Ltd
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Infrastructure UK Ltd

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