Mid Sussex District Council

Air Quality Action Plan

Stonepound Crossroads, Hassocks

Local Air Quality Management
Environment Act 1995

August 2013

Executive Summary

Part IV of the Environment Act 1995 requiries local authorities to review and assess current and future air quality in their area against air quality objectives established in the National Air Quality Strategy. Where those objectives are not likely to be met then the local authority is required to designate an Air Quality Management Area (AQMA) at the relevant locations. The local authority must then draw up an Air Quality Action Plan (AQAP) setting out the measures it intends to take to comply with the air quality objectives within the area covered by the AQMA.

Air quality monitoring and modelling carried out by the Council indicated that despite good air quality within most of the District, the air quality objectives for Nitrogen Dioxide (NO_2) were not being met in the Stonepound Crossroads area of Hassocks. In March 2012 the Council declared it to be an Air Quality Management Area. The air quality objective for Nitrogen Dioxide is an annual average of 40µg/m³ (microgrammes per cubic metre). The highest annual average measured level for Stonepound Crossroads in 2011 at the nearest property was 46µg/m³. There are 8 residential dwellings within the AQMA.

Road traffic exhaust emissions are the major source of pollution within the AQMA, so the Action Plan has been prepared in conjunction with Sussex Air Quality Group and West Sussex County Council. Excessive levels of NO_2 are experienced at the crossroads due to the volume of road traffic which queues at the traffic lights. The crossroads are on the brow of a hill which is partly lined with trees. Analysis of traffic information showed that the three most common types of vehicle passing through the crossroads were cars at 90.1%, light goods vehicles 6.4% and heavy goods vehicles at 1.6%. However, analysis of Nitrogen Dioxide by vehicle type showed that 59.9% of NO_2 came from cars, 16.8% from heavy goods vehicles and 15.9% from light goods vehicles.

This Action Plan sets out measures intended to deliver improvements to air quality by reducing pollution emitted from vehicles and the amount of traffic passing through the crossroads. It also sets out the rationale behind the measures, costs and benefits and a timetable for implementation. The Plan includes direct actions specific to the area of the Crossroads and measures relevant to the District as a whole.

The main direct actions included in the Action Plan are:

- Re-assessing traffic light sequencing- seeing if any adjustments can be made to the computerised system to improve traffic flow and reduce stationary waiting time.
- Minimising heavy goods vehicle movements- signage on A273, A2300 and A23 advising HGV drivers to use alternative routes.
- Put up “Cut Engine – Cut Pollution” signs- requesting stationary motorists to turn off their engines to reduce pollution.

These will mainly be a West Sussex County Council action as the highway authority responsible for non-trunk roads in the county.

Indirect actions will target reducing emissions from various sources that help to make up the background pollution levels in the AQMA and will have implications across a wider area. The main indirect feasible options are:

- Travelwise schemes to promote sustainable transport- to include more car share schemes and alternatives to the car. Promotion of school and work travel plans. Development and promotion of cycle routes.
- Education and raising awareness - increasing the availability of air quality information and incentivising people to change their travel behaviour.

- Enforcement and other transport related schemes- using the Council's existing powers to control pollution emitted from premises. Considering the use of vehicle emission tests on potentially polluting vehicles.
- Planning policies - the new District Plan includes policies for mitigating the impact of new developments on traffic congestion and promoting alternatives to the car.
- Air quality monitoring - continue to monitor air quality in the AQMA and across the District.

The Action Plan will involve a long term programme of implementation and progress will be reported through an annual review as part of the Local Air Quality Management assessment process.

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1. Introduction and Aims of the Action Plan

1.1 Purpose of the Air Quality Action Plan

The purpose of Air Quality Action Plan (AQAP) is to set out what can be done to reduce nitrogen dioxide pollution concentrations at Stonepound Crossroads, Hassocks. The document has been produced by the Environmental Protection Team in conjunction with Sussex Air Quality Partnership and West Sussex County Council. The action plan has been prepared in accordance with the Council's Local Air Quality Management obligations under the Environment Act 1995.

1.2 Review and Assessment of Air Quality

Under Part IV of the Environment Act 1995, local authorities are required to review and assess air quality on a regular basis. Pollution levels within the local authority area are assessed against air quality objectives which are prescribed in both European and national legislation for the protection of human health and the environment. There are seven different pollutants to assess, which are:

- Benzene
- 1,3 Butadiene
- Lead
- Carbon Monoxide
- Nitrogen Dioxide
- Particulate Matter (PM_{10})
- Sulphur Dioxide

Mid Sussex District Council is required to monitor the air quality in our area, and provide the results to Government. For nitrogen dioxide, monitors (passive diffusion tubes) are placed around the District, and in particular in areas where we believe there could potentially be higher levels of pollutants, for example, due to the amount of traffic in an area. The Council has been monitoring locations across the District over a number of years. The diffusion tubes are supplied and analysed by independent accredited laboratories.

Where the monitoring suggests that the air quality objectives are not likely to be met the local authority is required to designate an Air Quality Management Area (AQMA) at the relevant locations. The local authority must then draw up an Action Plan setting out the measures it intends to take in an attempt to comply with the air quality objectives within the area covered by the AQMA.

The air quality review and assessment in Mid Sussex found that targets for nitrogen dioxide (NO_2) were not being met at Stonepound Crossroads in Hassocks.

1.3 Air Quality and Health

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) sets out a framework to achieve cleaner air to protect human health and the environment. The strategy sets a series of standards and objectives for a range of air pollutants based on associated health effects, based on recommendations made by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO). The 'standards' are pollutant concentrations below which adverse health effects are unlikely, even in sensitive groups within the population. The 'objectives' are the target dates by which the 'standards' must not be exceeded.

The air quality objectives are only applicable where members of the public are likely to be present and different standards are set depending on the length of public exposure. For long term exposure to sensitive receptors, such as residential properties, hospitals, schools etc., the objective for nitrogen dioxide is based on an annual mean. For short term exposure where the public are likely to be present for only an hour or more the objective is based on 1 hour averaging periods.

At relatively high concentrations, NO_2 acts as an irritant causing inflammation of the airways and, by affecting the immune cells in the lungs, can increase susceptibility to respiratory infections. However, concentrations in ambient air are generally much lower than those associated with such effects.

Evidence suggests that ambient (outdoor) concentrations of nitrogen dioxide can increase the sensitivity of asthmatics to allergens and therefore increase the likelihood of asthma attacks. Longer term exposure to nitrogen dioxide can increase the likelihood of respiratory illnesses in children. (Committee on the Medical Effects of Air Pollutants 2011).

2. General Description of the Stonepound Crossroads, Hassocks area.

The map in figure 1 identifies the area covered by the AQMA. It is a small geographical area that has identified NO_2 as being above the specified level.

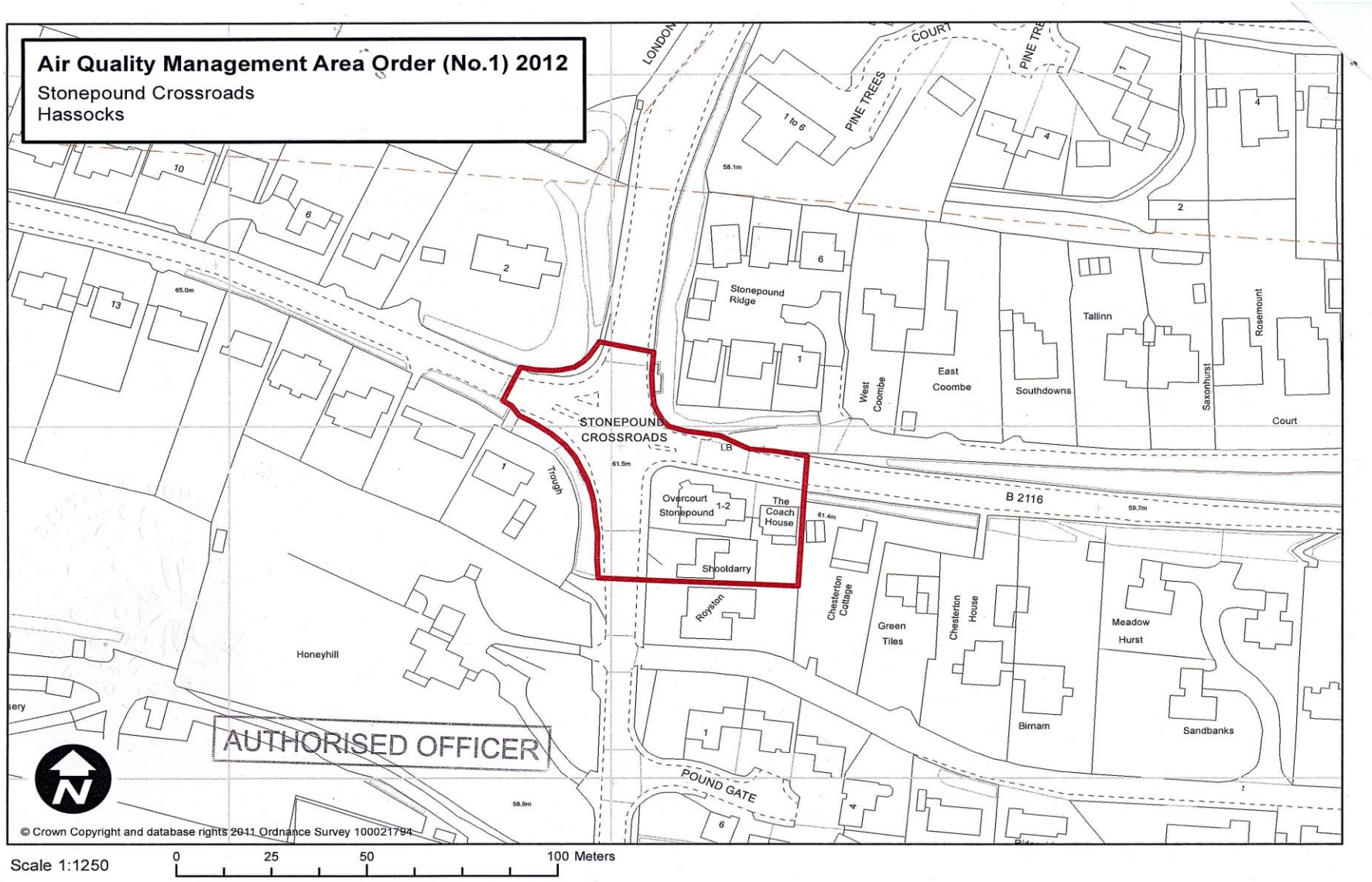
Hassocks is a large village and civil parish located approximately 7 miles (11.3km) north of Brighton, with a population of 6,821. The AQMA includes parts of the following roads: Keymer Road, Brighton Road, London Road and Hurst Road. Keymer Road (to the east of the junction) leads to the approach to Hassock station and then forms the village centre high street. Hurst Road (to the west of the junction) leads to Wickham Hill, Hassocks Road and the High Street for the village of Hurstpierpoint. London Road (to the north of the junction) and Brighton Road (to the south of the junction) are part of the A273 north/south road. North leads to Burgess Hill and south leads through Clayton and on to the A23 towards Brighton. The main London to Brighton railway line runs close to the AQMA.

There are several schools close by. These include Hurstpierpoint College, St Lawrence CEP School, Hassocks Infant School, Windmills Junior School, Hassocks, and Downlands Community School, Hassocks.

As vehicular traffic is the main contributing source of pollutant emissions at Stonepound Crossroads, it is key to have accurate traffic information regarding volumes, speeds and types of vehicles using the local road network. West Sussex County Council installed traffic counters on each arm of the main roads entering the AQMA. These count total (combined) traffic and different vehicle categories.

In 2011 the Stonepound Crossroads intersection had a total Annual Average Daily Traffic (AADT) flow of 40,887, comprising 23,018 AADT travelling on the A273 and 17,869 travelling on the B2116. A breakdown of vehicular numbers is given in section 4 of this report.

Figure 1
Stonepound Crossroads Air Quality Management Area



3. Air Quality at the Stonepound Crossroads, Hassocks AQMA

The Detailed Assessment report for Stonepound Crossroads was produced in May 2011. The report summarised the monitoring and modelling data available for the area and concluded that an AQMA would need to be declared on the basis of exceedences of the annual mean air quality objective for nitrogen dioxide at the crossroads at above the specified level of 40ug/m^3 (microgrammes per cubic metre) . There are 8 residential dwelling affected. There were no exceedences of the six other pollutant objectives. The Stonepound Crossroads Air Quality Management Area (AQMA) was formally declared by Council Order on 13th March 2012.

The high level of nitrogen dioxide is due to the volume of road traffic and the stop start routine of driving conditions of queuing vehicles at the traffic lights. The crossroads are on a brow of a hill which is partly lined with trees.

Figure 2 shows the location of the nitrogen dioxide diffusion tubes are located in and around the Stonepound Crossroads.

Figure 2
Location of the non-automatic monitoring NO_2 diffusion tubes

Stonepound Crossroads AQMA – Hassocks

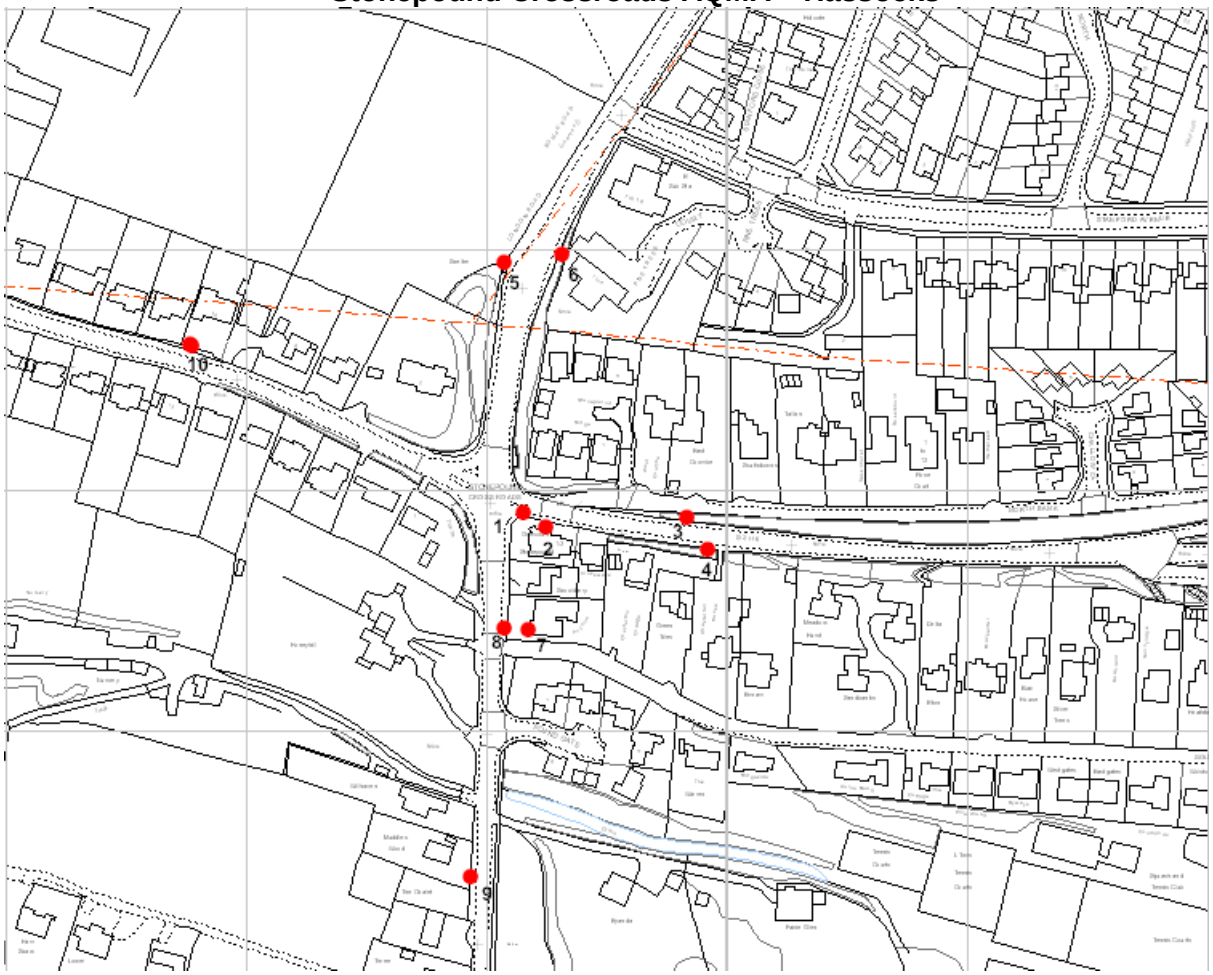


Table 1
Results of the NO_2 tubes located at Stonepound Crossroads AQMA.

Location	Location Description	Monitored NO_2 (µg/m³)
1	Kerb	49.0
2	Façade	46.1
3	Kerb	48.1
4	Kerb	45.9
5	Kerb	39.7
6	Kerb	38.5
7	Façade	23.7
8	Kerb	24.8
9	Kerb	35.7
10	Kerb	20.9

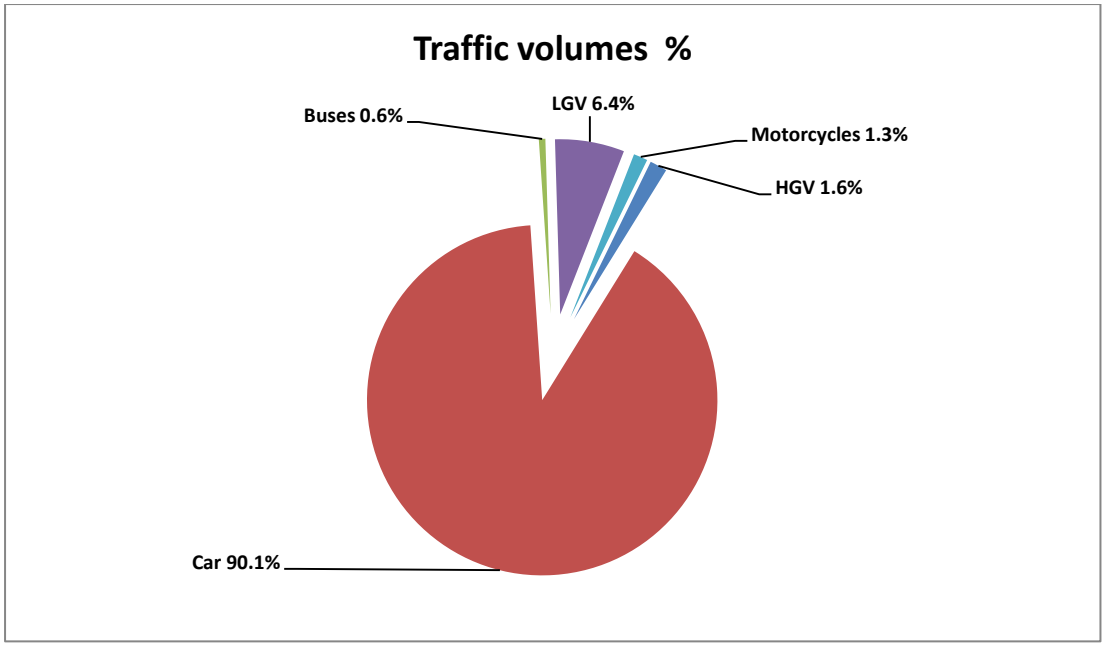
The results show that the target of 40 µg/m^3 is exceeded, or close to being exceeded at five locations in this area, although only one result indicates an exceedence of the air quality at a sensitive receptor. The sensitive receptor is at location 2, Overcourt where the monitored level at the façade of the building is 46.1µg/m^3. The other exceedances are at non-sensitive kerbside locations.

4. Where does the pollution come from?

As vehicular traffic is the main contributing source of pollutants is it key to have accurate traffic information. Traffic counters installed by West Sussex County Council on each arm of the main roads entering the crossroads has enabled the Council to look at the volume and types of vehicles passing through the crossroads.

In 2011, the Stonepound Crossroads intersection had a total Annual Average Daily Traffic (AADT) flow of 40,887, comprising 23,018 AADT travelling on the A273 and 17,689 travelling on the B2116. The proportion of each vehicle category as the average percentage of total traffic flows for all vehicle movements across the crossroads is shown below:

Figure 3:
Vehicle types as percentages at Stonepound Crossroads, Hassocks.



This shows that by volume of traffic, cars are by far the highest type of vehicle passing through the crossroads at 90.1%.

4.1 Source Apportionment

Understanding the number and type of vehicles passing through the crossroads allows us to determine the proportion of emissions from the different vehicle types. This is known as source apportionment and can assist in determining the types of actions that are needed within an Air Quality Action Plan to reduce pollutant levels.

Source apportionment is based on concentrations of oxides of nitrogen (NO_x) rather than nitrogen dioxide (NO_2), as NO_x is the primary emissions source from vehicle tail pipes. There is some NO_x emissions from domestic sources, but these are considered to have a relatively small impact when compared to that generated by road traffic.

The NO_x emissions figures come from modelling information, which takes into account background levels of pollution and knowledge about typical levels of emissions from the different types of vehicles. The model is then used to forecast the reduction in different types of vehicles passing through Stonepound Crossroads that are needed to deliver the necessary reductions in NO_2 emissions to below target levels.

Figure 4 shows the contribution of each vehicle type to the total annual average NO_x emissions at Stonepound Crossroads. This shows that cars account for 59.9% of emissions. Heavy Goods Vehicles (HGVs) account for 16.7% and Light Goods Vehicles (LGVs) 16% of NO_x, even though these classes of vehicle only account for 1.6% and 6.4% of traffic volume respectively.

Figure 4:
Road Traffic NOx Emissions by Vehicle Class in 2011.

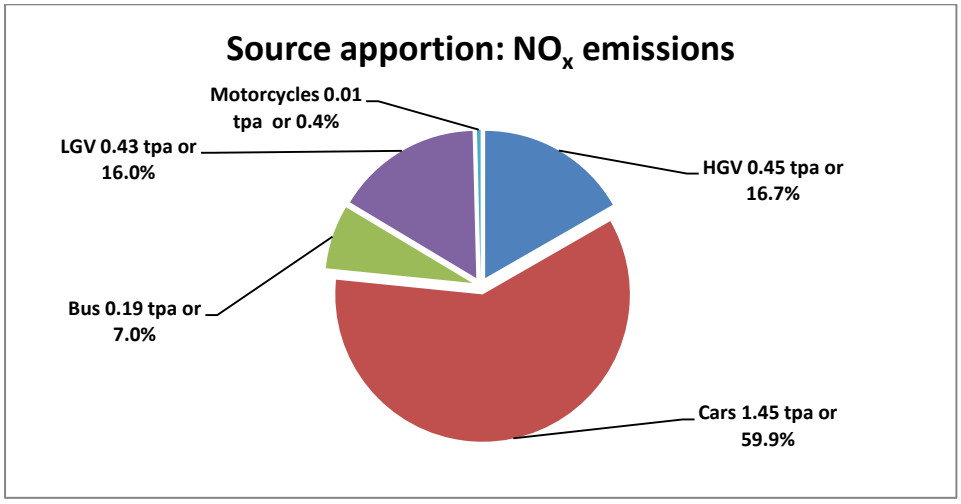


Table 2:
Traffic flow and NO_x emissions information by vehicle type.

Vehicle Type	Annual Average Daily Traffic Flow %	NOx Emission %
Motorcycles	1.3%	0.4%
Cars	90.1%	59.9%
LGV	6.4%	16.0%
Buses	0.6%	7.0%
HGV	1.6%	16.7%
Total	**100%**	**100%**

4.2 Nitrogen dioxide (NO_2) contribution

The NO_x concentration is converted to NO_2 by calculation where other contributing factors are also taken into account. These include:

- The photochemical interaction of ozone in the model
- Direct NO_2 emissions contribution from the vehicle tail pipe
- Ambient conditions (wind speed, direction, thermal activity, vehicle turbulence, etc)
- Background concentrations of NO_x and NO_2

The following table presents the estimated proportion of NO_2 concentration contribution from the various traffic sources at the façade of Overcourt.

Table 3:
Estimated NO_2 concentrations as source contributions in 2011 (at Overcourt) and AADT

Source	**Measured proportion conc. (µg/m³)**	**Conc. % of total measured**	**Conc % excluding background pollution**	**AADT %**
HGV	5.7	12.4%	16.8%	1.6%
Cars	20.3	44.0%	59.9%	90.1%
Bus	2.4	5.2%	7.1%	0.6%
LGV	5.4	11.7%	15.9%	6.4%
Motorcycle	0.1	0.2%	0.3%	1.3%
Background	12.2	26.5%	-	-
Total	**46.1µg/m³**			

Table 3 highlights the following:

- "Background NO_2" accounts for 26.5% of NO_2 concentrations.
- Excluding background pollution:-
- Cars account for 59.9% of NO_2 concentrations.
- HGVs contribute 16.8% of the NO_2 but only account for 1.6% of the vehicles passing through the crossroads.

Figure 5:
Estimated NO_2 concentrations as source contributions in 2011 at Overcourt.

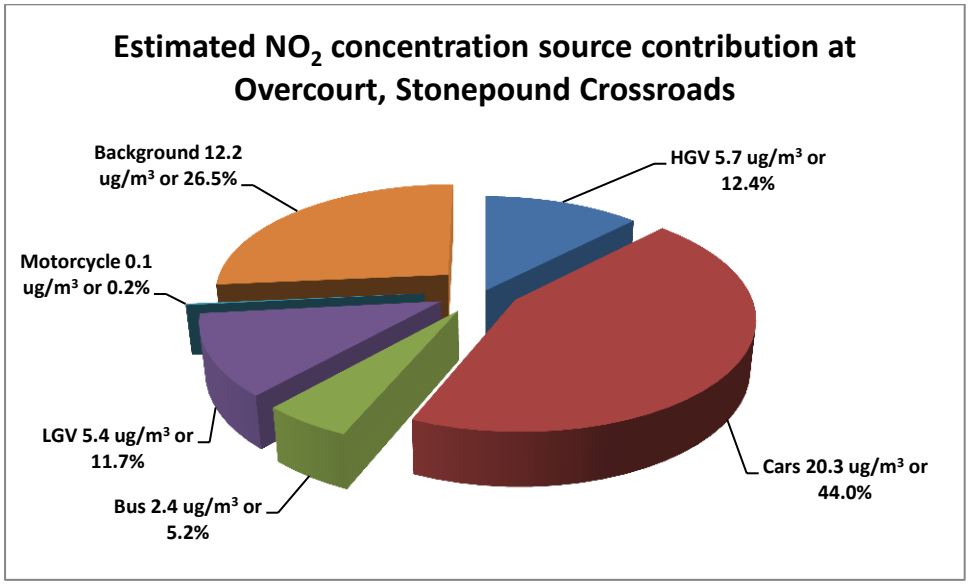
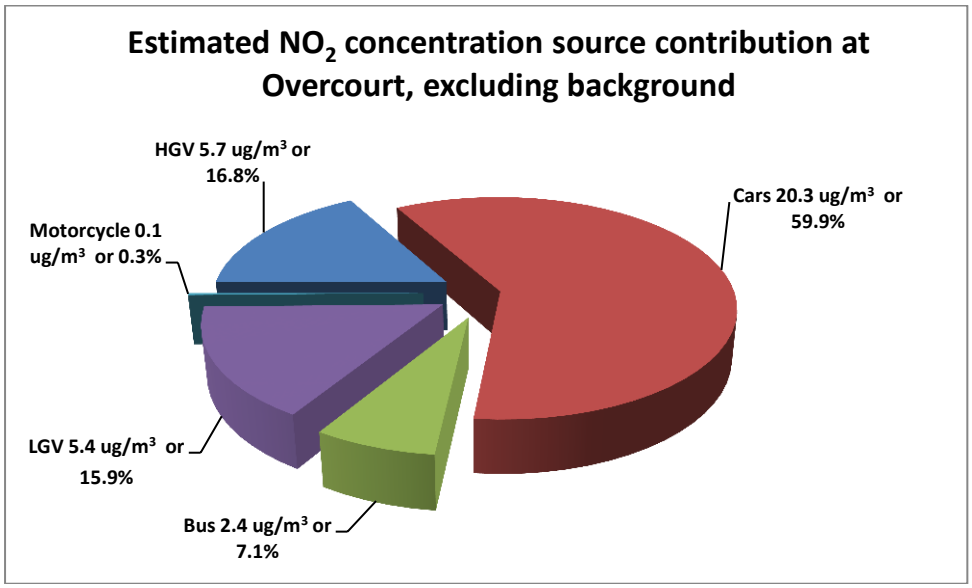


Figure 6:
Road traffic NO_2 emissions by vehicle type ignoring background pollution.



5. Air Quality Improvements Required and conclusions from the monitoring data

5.1 Required Nitrogen Dioxide Concentration Reduction

The worst-case receptor is at the façade of Overcourt on the south east corner of the crossroads, which gave a reading of 46.1ug/$m^3$for NO_2 in 2011 against the target of 40. Due to the small area of the AQMA, it is sensible to take this as the baseline from which to target improvements in the Action Plan.

5.2 Action Planning

Action Plan options to reduce pollution concentrations at Stonepound Crossroads are likely to include traffic management actions designed to improve traffic flow and, where possible, reduce traffic volume. In order to gauge the theoretical effect of changes in traffic on nitrogen dioxide concentrations at the worst case location, stepped reductions in each vehicle category were calculated. The results are shown below in Table 4 using the baseline year of 2011.

Table 4:
Estimated concentration improvements in annual mean nitrogen dioxide concentrations at worst case receptor (Overcourt) if traffic reductions were undertaken in 2011.

Vehicle type	% Reduction in vehicle type	Predicted reducton in annual mean concentration of NO_2 µg/m^3 at location 2	Conc reduction (µg/m^3)	% conc. reduction
Cars & LGV	10%	44.2	-1.9	4%
	25%	41.3	-4.8	10%
	50%	36.2	-9.9	21%
HDV	10%	45.6	-0.5	1%
	25%	45.0	-1.1	2%
	50%	43.8	-2.3	5%
All traffic	10%	43.4	-2.7	6%
	25%	39.3	-6.8	15%
	50%	31.7	-14.4	31%
Do nothing		46.1		

The results shown above highlight the fact that exceedences of the annual mean nitrogen dioxide objective at the worst-case receptor within the Stonepound Crossroads AQMA exceeds the objective level and that only very substantial reductions in total vehicle emissions are predicted to reduce modelled concentrations to a level where the annual mean objective would be met. The modelled predictions indicate that a 25% reduction in all vehicle classes would be necessary to reduce NO_2 concentrations to below 40ug/m^3.

Table 5, illustrates future actions scenarios for the year 2015, to illustrate the possible NO_2 improvements through action plan initiatives in the AQMA.

Table 5:
Estimated concentration improvements in annual mean nitrogen dioxide concentrations at worst case receptor (Overcourt) if reductions were implemented in 2015.

Vehicle type	% Reduction in vehicle type	Predicted reducton in annual mean concentration of NO_2 $\mu g/m^3$ at location 2	Conc reduction ($\mu g/m^3$)	% conc. reduction
Cars & LGV	10%	38.9	-2.8	-7%
	25%	36.6	-5.1	-12%
	50%	32.6	-9.1	-22%
HDV	10%	40.9	-0.8	-2%
	25%	39.4	-2.3	-6%
	50%	38.5	-3.2	-8%
All traffic	10%	38.5	-3.2	-8%
	25%	35.6	-6.1	-15%
	50%	30.4	-11.3	-27%
Do nothing		41.7		

The predicted results for 2015 indicate that levels of nitrogen dioxide should fall without any action being taken. However, the level will still be above the action level and failure to act positively to reduce nitrogen dioxide levels may result in the Council being subject to legal sanction from central government.

The other important point to note with these results is that several assumptions have been made and these increase the uncertainty around the predicted levels. The assumptions made are on the future traffic levels, the mix of vehicles, the impact of new exhaust emission standards and the use of meteorological data from 2010.

The do nothing figure of 41.7$\mu g/m^3$ in Table 5 must be considered as estimated due to the complexity of the unknown factors but they reinforce the need for positive action to be taken to improve air quality in the Stonepound area.

Conclusion

The tables above clearly indicate that the ‘do nothing ‘ option would fail to bring about sufficient improvement in the nitrogen dioxide level and that Council must undertake planned actions to reduce the level of pollution in the Stonepound area of Hassocks in order to comply with government legislation.

6. Policy Context and Existing Strategies relevant to Air Quality

There are a number of related plans and strategies at the local, regional and national level that are relevant to this AQAP and will help to contribute to overall improvements in air quality across the District. This section sets out the main links between these strategies and the AQAP.

6.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published in March 2012 and sets out the Government's planning policies, and how they are to be applied.

Sustainable transport forms a key part of the NPPF. In particular, paragraph 30 encourages solutions that support reductions in greenhouse gases and reduce congestion and encourages Local Planning Authorities to "support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport".

Paragraph 32 requires developments that generate significant amounts of movement to be accompanied by a Transport Statement or Transport Assessment. Decisions should take account of whether the proposals include satisfactory sustainable transport opportunities as well as determining whether cost effective improvements can be provided as part of the development in order to limit its impact on the transport network.

Plans and decisions should ensure that developments that generate significant movement are located where the need to travel will be minimised (i.e. in the most sustainable locations) and that use of sustainable transport modes can be maximised. This includes ensuring that vital infrastructure such as schools and shops are in a reasonable walking distance, for example.

The Mid Sussex District Plan has been prepared with the requirements of the NPPF in mind.

6.2 Mid Sussex District Plan and Local Development Framework

The Council has prepared a District Plan, due for adoption early 2014. This will provide a framework for planning in the District to 2031, prepared in the context of the Localism Act and the NPPF. The District Plan sets out the vision and strategy for how Mid Sussex wants to evolve over the plan period – this is delivered through a number of policies, including the housing strategy. The housing strategy looks to deliver the requirement of 10,600 homes between 2011 - 2031. Of this number, 4,213 are already in the planning process as 'commitments'. The remainder is to be split, with 3,865 delivered as a strategic development at Burgess Hill and 2,000 to be delivered across the District through Neighbourhood Plans.

The proposed submission District Plan includes policy 'DP18: Transport' which requires development to support the objectives of the West Sussex Local Transport Plan. It also states that development will only be permitted where:

- It is sustainably located to minimise the need for travel;
- It facilitates and promotes the increased use of alternative modes of transport to the private car, such as the provision of safe and convenient routes for walking, cycling and public transport;
- Does not cause an unacceptable impact in terms of road safety and increased traffic congestion;
- Is designed to adoptable standards, or other standards as agreed by the Local Planning Authority, including road widths and size of car parking spaces and size of garages; and
- Provides adequate car parking for the proposed development in accordance with parking standards as agreed by the Local Planning Authority.

These policy requirements reflect the requirements set out in the NPPF.

Similarly, the proposed submission District Plan includes a proposed policy in respect of Noise, Air and Light Pollution (DP26). In relation to Air Quality it states:

DP26 – Noise, Air and Light Pollution

The environment, including nationally designated environmental sites; areas of nature conservation or geological interest and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where:

Air Pollution:

- It does not cause unacceptable levels of air pollution;
- Development on land adjacent to an existing use which generates air pollution or odour where this can be mitigated to reduce exposure to poor air quality and/or would not cause any adverse effects on the proposed development;
- Development proposals (where appropriate) are consistent with Air Quality Management Plans.

6.3 Mid Sussex Transport Study

The delivery of infrastructure needed to support development and sustainable transport is an important element of the District Plan. The Mid Sussex Transport Study is being produced; this assesses the impact of District Plan policies on transport within the District. It is a 'high level' study, which focuses on the delivery of the strategy of the District Plan; also assessing implications of strategic development at Burgess Hill and through Neighbourhood Plans, including the impact on roads in adjoining Districts. It is based on the updated West Sussex County Council Transport Model, which is a well-established model for the County.

The Transport Study model is particularly relevant in looking at the implications of the planned developments in Burgess Hill, specifically the east of Kings Way residential site and the larger Northern Arc development, which also includes a secondary school; and other local facilities. It looks at the implications for increased housing development for traffic on key routes, taking into account options that can be taken to mitigate traffic increases. Mitigation could take the form of measures to reduce the amount of private motor traffic using the junctions – including change of route, change of mode or reducing need to travel - or measures to improve the junctions to accommodate the development generated traffic.

6.4 Neighbourhood Plans

The District Plan encourages all Town and Parish Councils within Mid Sussex to prepare Neighbourhood Plans as envisaged in the Localism Act and NPPF. As already mentioned, it is expected that 2,000 of the District's housing requirement of 10,600 will be delivered through Neighbourhood Plans, with the individual Town and Parish Council's determining the amount of growth that is suitable and achievable for their area. The Neighbourhood Plans can also contain area specific policies should the Town and Parish Council's wish to include them, as long as they are in general conformity with the District Plan.

Hassocks Parish Council and Hurstpierpoint and Sayers Common Parish Council have both agreed to prepare a Neighbourhood Plan.

6.5 West Sussex County Council Local Transport Plan 2011-2026 (LTP3)

West Sussex County Council has been a key partner in the development of this Action Plan. Their Local Transport Plan sets the strategy for guiding future investment in West Sussex highways and transport infrastructure and sets a framework for considering transport infrastructure requirements associated with future development across the county.

The strategies most relevant to air quality are:

- To reduce the negative impacts of transport on public health
- To encourage and enable physically active travel such as walking and cycling through behaviour change initiatives and provision of information and education

Reduce the negative impacts of transport on public health

The transport network can affect public health by contributing to poor air quality and noise issues and by affecting travel behaviour which can lead to inactivity and obesity. The County Council has pledged to reduce the negative impacts of transport on public health by:

- Working with district and borough councils when AQMAs are declared to develop Air Quality Action Plans (AQAPs) which include engineering, monitoring and promotional activities
- Providing information for air quality monitoring and forecasting
- Encouraging healthy travel behaviour through school travel, healthy schools and other behaviour change initiatives such as School Travel Planning and Travelwise
- Including new infrastructure in an Infrastructure Plan which encourages and promotes healthy behaviour such as walking and cycling

Encourage and enable physically active travel through behaviour change initiatives

Where transport infrastructure is in place, there are a range of behaviour change activities and initiatives which have been shown to increase its use. The County Council will continue to do this by:

- Using school travel planning to coordinate a range of behaviour change activities, skills training and investment priorities to encourage physically active travel behaviour in young people
- Introducing or supporting innovative behaviour change initiatives such as Bikeit and Easit where there are clear benefits and funding is available
- Promoting walking and cycling through school and workplace travel plans and through promotion of national events such as walk to school events, walking buses, bike week and Travelwise week

The strategy includes implementation plans for each of the District and Borough Councils in West Sussex. The plan for Mid Sussex emphasises the need to ensure that all new schemes and development contribute and support in some way the following:

- improving public transport facilities and networks
- increasing the use of sustainable modes of transport
- improving safety for all road users
- improving the public rights of way network in accordance with the Rights of Way Improvement Plan

It identifies some key issues in Mid Sussex and establishes a set of aims, some of which are relevant to the Action Plan for Stonepound Crossroads, Hassocks.
These include:

- maintaining roads and public rights of way to a good standard
- ensuring that maximum transport benefits are realised from future developments at Burgess Hill and Haywards Heath. The aim being to mitigate their impact and integrate the development with existing communities

- making the best use of the existing road network, using intelligent transport systems and improving public transport to improve the way the network is managed to reduce congestion
- Encouraging HGVs to use the advisory lorry route network while maintaining access to areas which businesses need to access
- Implement AQAPs and assist the District Council to develop supporting strategies and planning policies
- Encourage sustainable travel by improving the existing cycle and pedestrian networks through improved signage, connecting routes where appropriate and repairing and maintaining surfaces, particularly on routes identified through the Green Circle Network
- Improving pedestrian accessibility throughout the District by enhancing existing pedestrian crossing facilities at identified key locations
- Promoting sustainable transport choices through projects such as Safer Routes to School
- Introducing measures to reduce the speed of traffic within residential and built up areas where there are clear benefits from doing so and this is supported by the local community
- Continuing to work with our bus operators to improve the capacity and quality of the bus fleet and to improve the way the services are marketed
- Seeking to reduce traffic congestion by providing a convenient, comfortable, safe and flexible public transport system that offers a real alternative to the private car and encourages sustainable movement, thereby reducing energy consumption and pollution
- Improving the accessibility and quality of information available through the introduction of real time passenger information at well used bus stops and where the whole life costs are affordable
- Supporting transport interchange improvements at East Grinstead and Hassocks railway stations, including the national station improvement programme

6.6 South Downs National Park

The AQMA is close to the boundary of the South Downs National Park. Mid Sussex District Council's District Plan has been prepared jointly with the South Downs National Park Authority, who are preparing their own Local Plan to cover their area. They have not started work on putting any policies together and until they have adopted their plan, the policies in our District Plan apply.

6.7 Climate Change and Sustainability

Mid Sussex District Council is committed to leading by example and working in partnership with the wider community to encourage a sense of responsibility towards the environment by individuals, groups and businesses. Our main objectives and commitments, relating both to our own offices, sites and services delivered, are outlined in our environmental policy 'Our Commitment to the Environment', in particular to raise awareness and understanding of environmental impacts throughout the community, encouraging the public and businesses to make improvements.

Initiatives include easitMID SUSSEX which works with businesses in Haywards Heath and East Grinstead to provide alternatives to single occupant vehicle use by offering incentives and support for sustainable options.

6.8 School Travel Plans

School run traffic is especially relevant given that the air quality monitoring data indicates the particular difficulties with air pollution at these times. Short car journeys can have a significant effect on elevating road traffic emissions due to the problems of "cold starts". Emissions from

modern catalyst cars can increase ten-fold during the first kilometre of a journey, prior to the engine warming and the efficient operation of the catalyst. There are five schools in the vicinity of the crossroads. Four of these are state schools:

- Hassocks Infants School
- Windmills Junior School
- Downlands Community School
- St Lawrence CE Primary School

There is also an independent school, Hurstpierpoint College.

All of the state schools in the area have School Travel Plans, providing information about travel to school patterns in terms of mode of transport and the length of journey. Overall for the primary and junior schools in the area there are high levels of walking to school, as most pupils live comparatively close. Specifically these are:

- Hassocks Infants School- 57% walk to school, 21% come by car
- St Lawrence CE Primary School- 78% walk to school, 20% come by car.
- Windmills- 66% walk to school, 34% by car.

Downlands Community School takes in pupils from a wider area, with 52% of pupils living 2km or further from the school. 35.5% walk, 21.5% travel by train, 19.5% by bus, 17% by car.

The schools are using measures such as the walking bus initiative, walk to work scheme, and cycle train. They are considering their travel plans in the context of proposals to expand their pupil numbers. It is difficult to establish how much of the “school run” traffic passes through the crossroads and is, therefore, relevant in terms of action planning to reduce air pollution.

7. Action Plan for Delivering Air Quality Improvements

7.1 This chapter considers various actions considered to improve air quality in the AQMA. The predicted reduction in traffic volumes necessary to achieve a satisfactory level of pollution as outlined in Chapter 6 are unlikely to be met. The current policies and programmes set out in the preceding chapter will not deliver sufficient reduction in emissions from road traffic to meet the objectives for air quality improvements.
The Council is obliged to consider all possible measures and options available to further improve local air quality. Some of these will be specific to the AQMA and others will be for the wider area, including consideration of district wide and county level.

The matrix at appendix 1 provides an assessment of the available options in terms of:

- the likely contribution to improving air quality
- the cost
- timeframe
- feasibility
- an overall score calculated by multiplying the cost index by the air quality improvement index

The actions are divided into direct and indirect actions. Direct actions are ones specifically targeting the crossroads at Stonepound, whilst the indirect actions will benefit the crossroads and the larger geographic area making up the Mid Sussex area.

7.2 Feasible direct actions to improve air quality within the AQMA

West Sussex Highways is the local highways authority that has the responsibility for non-trunk roads in the county. Therefore, measures that will have a direct effect on the pollution concentrations within the AQMA will mainly be their responsibility, although the Highways Agency, who is responsible for trunks roads, will have some responsibility with Option 2.

The feasible direct actions that have been considered are:

Option 1 - Re-assess traffic light sequencing

Option 2 - Minimising HGV movements

Option 3 - 'Cut Engine, Cut Pollution' signs

Re-assess traffic light re-sequencing (Option 1)

West Sussex Highway Authority will be responsible for re-assessing the Stonepound Crossroads traffic light sequencing to see if any adjustments can be made to the existing Microprocessor Optimised Vehicle Actuation (MOVA) system to improve the traffic flow and minimise the stationary waiting time.

Minimising Heavy Goods Vehicles movements (Option 2)

West Sussex Highways Authority will be responsible for installing Heavy Goods Vehicle (HGV) advisory route signs on the A273 (around Burgess Hill) and the A2300, as well as on the A23, especially northbound A23, south of Pyecombe. The Highways Agency can also negotiate with 'Sat Nav' companies to show the advisory route for HGV drivers to follow.

'Cut Engine, Cut Pollution' signs (Option 3)

West Sussex Highways Authority will be responsible for arranging the implementation and maintenance of signs on roads leading into Stonepound Crossroad that advise drivers who are stationary to cut their engine, thus reducing pollution. This option requires Department for Transport approval for the signs.

7.3 Feasible indirect actions to improve air quality within the AQMA and across the whole District

Air quality within the Air Quality Management Area is sourced mainly from road traffic emissions but also from background pollution concentrations.

Indirect actions will target reducing emissions from various sources that make up the background pollution levels in the AQMA and across the whole District.

Indirect actions to improve air quality can be categorised into five groups. These are labelled:

- Travelwise schemes to promote sustainable transport
- Education and raising awareness
- Enforcement and other transport related schemes
- Planning policies and Transport policies
- Air quality monitoring

These measures are **all likely to have a low effect on reducing the nitrogen dioxide levels in the AQMA**. However, these measures will help to improve the air quality around the district where they are active, even if it is only by a small amount.

Some of these measures may already be implemented, on-going or need expanding upon.

Travelwise schemes to promote sustainable transport

West Sussex County Council is a member of the ACT Travelwise Association (ATWA), which is a partnership of local authorities and other organisations working together to promote sustainable transport.

Mid Sussex District Council and West Sussex County Council can use Travelwise to help reduce society's dependence on car use by raising awareness of environmental, health, economic and social effects of car use; changing attitudes towards car use; promoting more sustainable modes of travel and lifestyles which require less travel; encouraging action to change travel behaviour and reduce unnecessary car use.

The options considered are:

Option 4 - Mid Sussex District Council travel plan
Option 5 - School and work travel plans
Option 6 - Improve and promote cycle routes
Option 7 - Encourage alternative transport modes
Option 8 - Car sharing promotion
Option 9 - Partnership work with bus and train operators
Option 10 - Better driving techniques

Mid Sussex District Council travel plan (Option 4)

Mid Sussex District Council will review and improve its own staff travel plan to help reduce the amount of traffic on the roads.

School and workplace travel plans (Option 5)

West Sussex County Council and Mid Sussex District Council will encourage state schools, local independent schools and local businesses to establish and implement travel plans to help reduce traffic on the roads, especially passing through the AQMA.

Improve and promote cycle routes (Option 6)

Mid Sussex District Council and West Sussex County Council, working in partnership with transport companies and businesses, will be responsible for implementing this option. Safe cycle routes need to be provided on popular travel routes between towns and villages and on routes to popular tourist destinations e.g. Jack & Jill windmills. There is a proposed new cycle route being considered to run from Hassocks station to the South Downs, including funding from South Downs National Park Authority, County and District Councils, which may help reduce traffic through Stonepound Crossroads.

Encourage alternative transport modes (Option 7)

West Sussex County Council, Mid Sussex District Council and transport companies (bus and rail) can all implement this option to help people to use other transport methods instead of their cars, by identifying popular travel routes, encouraging transport companies to provide transport and incentives to use them and for the Council to help advertise them.

Car share promotion (Option 8)

West Sussex County Council, through the Travelwise initiative will continue to promote car sharing schemes with businesses and with the public to reduce the number of car journeys through the AQMA.

Partnership working with bus and train operators (Option 9)

Mid Sussex District Council and West Sussex County Council will encourage bus and train operators to discuss compatible arrival and departure times between trains and buses. Also Hassocks Station is being renewed so discussions with the train operator for the station need to be held to talk about alternatives to encouraging car use.

Better driving techniques (Option 10)

The Highways Agency, West Sussex County Council and Mid Sussex District Council can all provide information on better driving techniques that will reduce pollution and vehicle noise. They will be beneficial for drivers through less fuel use, reduced motoring costs and have an impact across the whole district.

Education and raising awareness

If we need people to raise their consciousness of air quality issues, change their habits and their way of life, we need to provide the information to them and incentives to change their lifestyles. The method employed to get this message across must not be viewed as one that lectures or has a "…must do this, must do that…" attitude. If the audience feels this then they will ignore the message and not participate in it.

The options considered are:

Option 11 - Increase air quality information available

Option 12 - Health and Wellbeing

Option 13 - Promote national schemes on energy efficiency

Increase air quality information dissemination (Option 11)

Mid Sussex District Council can improve the amount of air quality information available to those who require it. This will help the public to make informed decisions about their lifestyle and how the actions they take affect the environment.

Health and Wellbeing promotion (Option 12)

Mid Sussex District Council and Sussex Air Quality Partnership can provide information about the health effects of air pollutants to those who are susceptible to respiratory ailments so they can make informed decisions about their lifestyle and may reduce the amount of medical appointments due to better self-management of respiratory ailments.

Sussex Air provide an airAlert service that sends alert messages to vulnerable people in Sussex informing them when poor air quality is predicted in their area. The alerts are sent to home phones via voice message, to mobile phones via text and via email.
See http://www.sussex-air.net/AirAlert/Default.aspx

Promote national schemes on energy efficiency (Option 13)

Mid Sussex District Council is responsible for promoting the various energy efficiency schemes, e.g. Green Deal, available to those who will benefit from it. This will help reduce the amount of pollution from domestic sources.

Enforcement and other transport related schemes

There is enforcement legislation, which Mid Sussex District Council already uses, to control pollution emitted from commercial and domestic sources.

The option considered is:

Option 14 - Environmental Protection Act 1990 – (Statutory nuisance)

Mid Sussex District Council uses, and will continue to use, enforcement powers available under the Environmental Protection Act 1990, especially in relation to emissions to air from industrial, commercial and domestic premises.

Option 15 - Vehicle emission testing

Mid Sussex District Council will consider working with Sussex Police and the Vehicle and Operator Services Agency (VOSA) and possibly with Sussex Air Quality Partnership, to carry out vehicle emission tests on potentially polluting vehicles. VOSA will check the vehicle emissions; Sussex Police would carry out road worthiness inspections and MSDC will provide information on air polluting activities etc. Vehicles found to be at fault will be served with a prohibition notice requiring the vehicle to be repaired or in serious situations the vehicle will be removed from the road.

Planning policies

Planning can have an important influence on air quality through policies on development included in the Local Development Framework. This ensures that planning applications are considered in respect of their effect on air quality and how it is likely to affect nearby sensitive receptors such as residences, hospitals, schools etc.

The options considered are:

Option 16 - Mid Sussex District Plan

Option 17 - Incorporate 'SAQP Air Quality guidance for Planners'

Mid Sussex District Plan (Option 16)

Mid Sussex District Council has prepared a District Plan, due for adoption in early 2014. The proposed submission District Plan includes policies on development in relation to "DP18: Transport" and "DP26: Noise, Air and Light Pollution". The District Plan has been developed in the context of the Localism Act and National Planning Policy Framework.

Incorporate 'SAQP Air Quality guidance for Planners' (Option 17)

Mid Sussex District Council's Planning Team and Environmental Health Team will assess and consider adopting the air quality guidance produced by the Sussex Air Quality Partnership. This guidance will benefit developers and planners when accounting for adverse impacts on air quality from developments. The guidance also considers the cumulative effect of several small developments in the same locality.

Air quality monitoring

Mid Sussex District Council currently monitors nitrogen dioxide using passive diffusion tubes, which are located at strategic locations within and around the AQMA. These tubes provide a monthly average of NO_2 concentrations and together give a good indication of the NO_2 levels across the AQMA.

The Sussex Air Quality Partnership does have a mobile air quality monitoring station for real-time continuous air quality monitoring, but despite all efforts, a suitable site has not been found for its installation due to the unfavourable topography of Stonepound Crossroads.

Air quality monitoring (Option 18)

Mid Sussex District Council will continue to monitor air quality within the AQMA as well as throughout the District.

8. Implementation and Monitoring

The measures outlined in the AQAP aim to address the air quality objectives for NO_2 within the AQMA. The Plan provides a practical package of measures to improve air quality. Road traffic is the main source of pollution in the AQMA, so Mid Sussex District Council and West Sussex County Council have a shared responsibility for implementing those measures considered the most cost-effective and practical. Some of the measures will also be dependent upon uptake and contributions from the local community.

The effectiveness of measures and progress with implementation will be the subject of an annual report as part of the Local Air Quality Management review and assessment process. These progress reports will include further data to help gauge whether significant reductions in air pollution, traffic levels and emissions are being achieved within the AQMA.

With changes in the vehicle mix due to improvement in vehicle exhaust emissions and the actions the Council will implement by 2015, it is anticipated that the level of nitrogen dioxide in the Stonepound area will fall below the objective level of 40µg/$m^{3.}$ by 2018.

9. Consultation and Stakeholder Engagement

The Action Plan has been developed through a project group made up of Mid Sussex District Council staff from Environmental Health, Housing, Planning Policy and Sustainability. Staff from the Council's Car Parks and Health & Wellbeing teams have also been involved. Regular meetings have taken place with Sussex Air and West Sussex County Council transport planning staff.

A Member training session on Air Quality in Mid Sussex took place shortly before the declaration of the AQMA. Local members have been kept updated on the development of the Action Plan. The Action Plan will be considered by Mid Sussex District Council Cabinet, prior to its submission to defra.

Public engagement

This draft report was subject to a 6 week consultation from 24 June to 5 August, through its publication on the Council's website for comment. There was also a staffed exhibition held at Adastra Hall in Hassocks on 22 July 2013, followed by a standing display at Hassock library from 23 to 27 July. Residents were invited to submit their comments via a feedback form or through the consultation section of the website.

The consultation was publicised through a press release, item in the "Hassocks and Keymer Talk About" local magazine delivered free in the village to 4,800 homes and posters in the local area. Direct invitations to take part in the consultation were sent to residents living in the AQMA; Hassocks Parish Council: and the local Mid Sussex and West Sussex elected Members.

Contact was made with West Sussex County Council's School Travel Advisor who supplied information about the travel plans of the local schools. Local schools were invited to attend the exhibition to assess how their school travel plans might contribute to improving air quality.

External consultees

The Draft Action Plan has also been circulated to the following consultees:

- Environment Agency (Sussex Area Office)
- South Downs National Park Authority

- All neighbouring local authorities - Brighton and Hove City Council, Crawley Borough Council, Horsham District Council, Lewes District Council, Tandridge District Council and Wealden District Council
- West Sussex County Council
- Hassocks Parish Council
- Crawley and Horsham and Mid Sussex Clinical Commissioning Group
- Bus and train operators

Responses received to the consultation

The responses received are shown at appendix C.

The main areas of comment received from residents concerned the following issues:

- concerns about the implications of new housing development in the area on the volume of traffic;
- considering the introduction of lower speed limits and/or traffic calming measures to reduce the rate at which traffic arrives at the junction and enabling the traffic lights to clear the traffic more efficiently;
- diverting through traffic to other routes;
- issues arising from free commuter parking at Hassocks station and on side roads in the vicinity of Hassocks station and whether the latter could be alleviated by the introduction of parking restrictions, such as resident only parking;

The comments received have been shared with West Sussex County Council as the highway authority, and further work will be undertaken to test whether any of the above are viable options for reducing pollution.

During the implementation process key stakeholders and residents will continue to be involved through appropriate further engagement.

10. Glossary

AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
bgd	background
defra	Department for Environment, Food and Rural Affairs
FR&A	Further Review and Assessment
HA	Highways Agency
HGV	Heavy Goods vehicles greater than 7.5 tonnes in weight
HDV	Heavy Duty Vehicles (HGVs and Buses)
kph	Kilometres per hour
LAQM	Local Air Quality Management
LGV	Light Goods vehicle
MOVA	Microprocessor Optimised Vehicle Actuation
mph	miles per hour
MSDC	Mid Sussex District Council
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
SAQP	Sussex Air Quality Partnership
SCOOT	Split Cycle Offset Optimisation Technique
tpa	Tonnes per annum

$\mu g/m^3$	Microgrammes per cubic metre
VOSA	Vehicle and Operator Services Agency
WSCC	West Sussex County Council

Action Plan Matrix Evaluation of Options **Appendix A**

Following defra guidance the 'effects of the measures on air quality' and the likely 'costs involved in implementing these measures' are categorised into Low (AQ: <0.2 μgm^{-3}; Cost: <£50k), Medium (AQ: 0.2 – 1.5 μgm^{-3}; Cost: £50k - £200k) or High (AQ: >1.5 μgm^{-3}; Cost: >£200k) bandings and these are given an index score by multiplying the air quality improvement index by the cost index scores the ranking. The higher the ranking number the more feasible and effective the option.

	AQ improve	**Cost**
Low	1	3
Medium	2	2
High	3	1

The maximum ranking score is nine, which represents high air quality improvements at low cost. As can be seen in the feasible options matrix, there is a range of ranking with some low scoring options that are still considered feasible, even though they may have little impact on improving the air quality within the AQMA. However, although they will also have a small or negligible beneficial impact on the air quality they may have benefits in other areas e.g. more active lifestyles.

Action no.	**Action**	**Responsible Organisation**	**Positive effects on AQMA**	**Date to be achieved / targets**	**Effects on air quality** **Low <0.2 μgm^{-3} (1)** **Medium 0.2–1.5 (2)** **High >1.5 (3)**	**Cost** **Low <£50k (3)** **Medium £50k-£200k (2)** **High >£200k (1)**	**Feasible**	**Score**
1	Re-assess traffic light sequencing	WSCC	Shorter stationary times	Before end of 2014	Low	Low	Yes	3
2	Minimising HGV movements – advisory lorry routes	WSCC HA	Reduced number of HGV traffic	Before end of 2015	High	Low	Yes	9
3	'Cut Engine, Cut Pollution' signs	WSCC MSDC	Less pollution from queuing vehicles	Before end of 2014	Medium	Low	Yes	6
4	Mid Sussex District Council travel plan	MSDC	May reduce NO_2 emissions	Before end of 2014	Low	Low	Yes	3
5	School and work travel plans	MSDC	Less vehicles on road	Before end of 2015	Low	Low	Yes	3
6	Improve and promote cycle routes	MSDC WSCC	Less vehicles on road	On-going	Low	Medium	Yes	2
7	Encourage alternative transport modes	MSDC WSCC	Reduced number of vehicles movements	On-going	Low	Low	Yes	3
8	Car share promotion	MSDC	Less vehicles on road	Before end of 2014	Low	Low	Yes	3
9	Partnership work with bus and train operators	MSDC Bus Co Train Co WSCC SDNPA	Less vehicles on road	Before end of 2015	Low	Low	Yes	3

10	Better driving techniques	MSDC WSCC HA	May reduce NO_2 emissions	Before end of 2014	Low	Low	Yes	3
11	Increase air quality information available	MSDC	May reduce NO_2 emissions	Before end of 2014	Low	Low	Yes	3
12	Health and Wellbeing promotion	MSDC SAQP	May create fewer car journeys through AQMA	On-going	Low	Low	Yes	3
13	Promote national energy efficiency schemes e.g. Green Deal	MSDC	Reduced adverse AQ impact from domestic and business heating sources	On-going	Low	Low	Yes	3
14	EPA90 statutory nuisance	MSDC	May reduce NO_2 emissions	On-going	Low	Low	Yes	3
15	Vehicle emission testing	MSDC VOSA SPC SAQP	Reduce polluting vehicles	Once a year	Low	Low	Yes	3
16	Mid Sussex District Plan & Local Development Framework	MSDC	Reduce adverse impact on AQMA	On-going	Low to Medium	Low	Yes	6
17	Incorporate 'SAQP: Air Quality Guidance for Planners'	MSDC SAQP	Reduce adverse impact on AQMA	Before end of 2013	Low to Medium	Low	Yes	6
18	Air Quality Monitoring	MSDC	Measures the success of the AQAP	On-going	Low	Low	Yes	3

Key:

MSDC –	Mid Sussex District Council	SAQP –	Sussex Air Quality Partnership
WSCC –	West Sussex County Council	SPC –	Sussex Police Constabulary
HA –	Highways Agency	SDNPA	South Downs National Park Authority
AQMA –	Air Quality Management Area	VOSA –	Vehicle and Operator Services Agency

Score: The higher the score the more feasible and effective the option. Derived by multiplying 'Effects of Air Quality' by 'Cost' (figures in brackets)

Appendix B

Non-feasible direct and indirect actions to improve air quality within the AQMA

In developing the Action Plan for improving air quality, the Council is required to demonstrate that it has looked at all of the options, even those that are not considered feasible. There are several reasons for actions not being considered to be feasible, including that they are not physically possible and because the amount of improvement in air quality is not sufficient to justify the economic costs involved.

Do nothing (Option 19)

This option has been considered. Modelling shows that annually, air quality, including nitrogen dioxide concentrations, slightly improves. This is a result of a number of national schemes, improving vehicle engine management systems and improving fuel technologies.
However, as shown in Table 5, this will not achieve the required reduction in pollution levels.

Traffic light gating (Option 20)

This would involve providing an additional set of traffic lights, probably on the London Road, to reduce congestion at Stonepound. These would be sequenced with the traffic lights at the Crossroads.

This option has been raised with West Sussex Highways, who do not consider there to be a suitable location for a further set of lights. They also consider this not to be cost effective. A signalled controlled “puffin” pedestrian crossing was installed in April 2013 on the London Road some 800 metres to the north of the crossroads. The latest traffic monitoring data is being analysed to see if the new crossing has had any implications for traffic numbers at the crossroads at peak times.

Replacement of traffic lights with a roundabout (Option 21)

This would involve replacing the traffic lights with a roundabout to create a smoother traffic flow at the crossroads and reduce queuing at the junction, especially outside of rush hours.

This would be a high cost option and according to West Sussex County Council Highways, not physically possible as there is not enough space at the crossroads to install a roundabout, even if it were a mini-roundabout. WSCC Highways also feel that a roundabout may cause more congestion on some of the roads leading in to the crossroads due to high traffic flows on roads with right of way.

Traffic calming measures (Option 22)

This would involve installing traffic calming measures, such as pinch-points, to slow down the traffic creating a smoother traffic flow approaching Stonepound Crossroads.

This is not considered to be feasible as the traffic calming measures would have to be installed some distance from the crossroads and would not help to reduce the pollution as vehicles would still be queuing at the traffic lights.

High occupancy traffic lanes (Option 23)

This would involve the installation of extra segregated lanes for cars with two or more people on board.

This is not considered feasible due to insufficient space for extra lanes and the high costs of implementation.

Low emission zones (Option 24)

This would involve the creation of a Low Emission Zone (LEZ) leading up to and through the crossroads. A LEZ would only allow vehicles with modern engine types to travel through the AQMA.

This is not considered to be a feasible option as the installation and maintenance of the infrastructure for implementation of the LEZ would be too costly. It may be effective if the older polluting vehicles are renewed or take alternative routes to avoid the LEZ, but the cost is disproportionate to the improvement in air quality.

Park and Ride (Option 25)

West Sussex County Council Highways, Mid Sussex District Council and a local bus company would be responsible for this option. Park and Ride would encourage people to leave their cars outside of the AQMA and travel to the shops in Hassocks by bus.

This is not considered to be a viable option as there are no suitable existing sites for the Park and Ride car park and implementation costs would be high.

Increase Parking Charges (Option 26)

This would involve increasing parking charges in Hassocks and Hurstpierpoint, to encourage people to use alternative transport modes to cars to travel into the villages.

This option is not considered to be effective as it is likely to have only a small impact on the number of vehicles passing through the crossroads. It would also have a detrimental impact on local businesses.

Supply electric charging points in Hassocks (Option 27)

This would involve the installation of charging points in the main car park in Hassocks where people can charge their electric vehicles while they shop. The purpose of this would be to encourage people to purchase and use electric vehicles.

It is not considered to be a feasible option in the short term as use of electric cars is minimal at present and not likely to encourage the further use of such low emission vehicles in the vicinity of the crossroads. There are already electric vehicle charging points installed at Council car parks in Burgess Hill, Haywards Heath and East Grinstead, but records show that they have had very little use.

Cut down trees near to the AQMA (Option 28)

It is thought that trees may create a canopy that does not allow sufficient ventilation in the Stonepound Crossroads area and thus prevent the dispersion of traffic pollutants. This option would involve removing the trees in Keymer Road and London Road. north of Stonepound Crossroads, in order to increase ventilation and reduce pollution in the AQMA.

This option is not considered to be effective in reducing pollution. During the winter months when the trees do not have leaves on them and the ventilation is higher, there is no noticeable reduction in pollution levels. Also the trees have beneficial effects in removing some of the pollutants from the atmosphere. Some of the trees have Tree Preservation Orders on them so not all trees could be removed.

Responses received to the Stonepound Crossroads Air Quality Action Plan consultation

Comments submitted on-line and through completed forms:

From London Road resident and Hassocks Parish Councillor at Consultation Day

1. Please do not cut back or remove any trees.
2. Traffic calming may help to dissuade heavy goods vehicles.
3. Development from Burgess Hill will make matters worse, so no more development on green sites in Hassocks.

The above resident also submitted an on-line response

I do not think the measures outlined in your proposal will be sufficient to remedy the situation. Lorries will ignore the signs and the traffic will get worse if people turn their engines off as they will sometimes stall and starting up your car creates more pollution. Pollution will increase with the advent of more houses in Burgess Hill, Hurst and Hassocks.
What is needed is a new road that takes traffic away from this busy crossroads, and traffic calming measures along London Road to ensure it is not so convenient for through traffic.
It is not acceptable that people living near the crossroads should have their health compromised.

From London Road, Hassocks resident

Having attended the presentation/consultation day, I would like to make suggestions/comments. As a resident of London Road, Hassocks I feel that the issue of Air Pollution should be seriously discussed with all County Council departments. Having taken time to talk to the Highways department for West Sussex. they did not seem to be fully aware of the local nature of the Traffic issue. I suggest that someone from their department take time to visit and assess not just the traffic count but more about what type of traffic is causing the pollution.
I would consider that there are two types of traffic Local and commuting. Hassock Station has created a parking issue around Hassocks, especially along Stanton Avenue. I am personally aware of "commuters" who travel from Shoreham to Hassocks to park and alight the train to London. The surrounding Villages of Hassocks have commuter traffic also and this traffic can create Issues. As to date the department that deals with the Issue have failed to address this issue. Instead they have pushed the problem onto the Rail Companies for consideration.
From my perspective at Stanton Avenue most houses have off street parking and therefore do not require road parking therefore single yellow lines along some length of the road will ease the burden of access to the village. This would also ease the issues of cycle use for the School Run and therefore ease the burden at certain times at the Crossroads.
The other type of traffic is the north/south commute traffic. I see no improvement in the amount of traffic and only an increase as the economy picks up and more jobs are created in Burgess Hill as it evolves. I therefore see that the development of Hassocks/ Hurstpierpoint be restricted until the traffic issue can be addressed. Instead of more houses we need more green areas with plants and trees that can assist in soaking up the pollution and converting it.
As an asthma sufferer it is understandable to reduce Nitrogen Dioxide Levels but it would be conducive to health to consider other types of pollutants which compound the Asthma issue. Analyst of real cost and economies, NHS cost for people who are victims of Air Pollution against simple cost of dealing directly with the Amount of traffic.

In conclusion the task, although sounding difficult to address, is one of limiting the Traffic not just at the crossroads but also around the area. This means reducing development until the road network is able to handle the Traffic. The Planning Department should make real consideration to the fact that more houses create more traffic. Maybe the Planning department Manager should attend the

crossroads at school time and see how the children who walk or try to cycle to school are put into danger every day. Let the responsibility of any accident or incident be put at his feet because the failure to recognise the issue not just of Air Pollution but also Traffic Congestion is his fault.

The above resident submitted a further response

I have already made some suggestions but would like to propose another. The issue of safer cycling around the village could be aided by the restriction of cars along Stanton Avenue (a bypass of the Stonepound Junction). This could be carried out by a single yellow line parking restriction being applied to the majority of the road.
Also I am aware that Hassocks Station creates traffic from outside the village and I suggest that car parking charges at the station be levied in accordance with the emissions ratings of the vehicle. A vehicle's rating is displayed on the Tax Disc.
I would suggest that the lowest band rated Vehicles be given free parking and the highest rated be charged at a more higher rate than is currently set.
This method could be utilised throughout the rail network and maybe within villages of Sussex.
Technology is currently available to police this method via the ANR system employed by the DVLA.

From London Road, Hassocks resident

If the figures taken are an "average" then I wonder just how severe the air quality is at peak periods, with sometimes the traffic queuing as far back as the Friars Oak pub.
No further building development in the area should be permitted both in Hassocks and Hurstpierpoint as increased traffic will make the situation worse bearing in mind the average house will generally have at least 2 cars.
The speed limit should be reduced not only to reduce the rate at which traffic arrives at the junction but also coming down the London Road from the crossroads as people have been frustrated waiting in the traffic and then speed down the road at quite a rate, certainly well above the speed limit. The installation of some speed cameras would soon deter this from happening
Resident only parking should be introduced in the roads adjacent to Hassocks Station to stop commuters travelling to Hassocks to park for free when catching the train to London.

From London Road, Hassocks resident

I believe the measuring methodology is flawed in that it only provides rudimentary averages. A far more intensive programme should be undertaken as I feel that at peak periods the quality is far worse than those measured. It can be difficult for a pedestrian to breath when waiting to cross the road at peak times.
No further building development should be sanctioned as increased traffic will make the situation worse.
The speed limit within 1km radius of the intersection should be reduced to 20 mph thereby reducing the rate at which traffic arrives at the junction and enabling the traffic lights to clear the traffic more efficiently.
Speed safety cameras should be installed north and south of the junction in order to enforce the speed limit.
Through traffic should be forced to use the A23 and then A2300 spur into Burgess Hill or A272 to Haywards Heath - access only route which is enforced.
Resident only parking should be introduced in the roads adjacent to the station (Stanford Road, Semley Road, Stonepound Road) to stop commuters travelling to Hassocks to park for free when catching the train to London.
Build under and over passes for north/south and east/west.
Compulsory purchase property at the intersection so the junction can be improved.

From London Road, Hassocks resident

I hope the parish council will implement the action plan. I catch the bus regularly at Stonepound and the pollution affects my chest. The trees behind the bus shelter is also a perch for young barn owl that hunts the London Road fields, we consider the effects of pollution on our human species but we must also protect our wildlife in this area and the domestic animals grazing. The grasses are also being polluted which will affect the wildlife and domestic animals nearby. I live on London Road and have apple trees in my front garden, I've lived there 32 years, now with the increased pollution the apples are blackened with smuts and inedible! Something must be done to improve air quality now and I am glad the parish council is looking at the problem.

From London Road, Hassocks resident

You can really smell the pollution, even still at 6.30 after the peak rush hour has gone past. As a pedestrian using this route regularly at peak times it can sometimes be difficult to breathe! It is also very difficult to cross from south to north at peak times, I see kids standing there for so long in the morning as well
Any further building works in the local area will serve to simply increase pollution levels, and move it further down the surrounding roads.
Perhaps the speed limit or traffic calming measures should be introduced on the roads leading up to the junction e.g. down to 20mph and ENFORCED with speed cameras or sleeping policeman etc. and more regular mobile camera patrols.
We will struggle to reduce the amount of cars using the route as a cut through without making the journey time significantly longer and in line with the suggested route e.g. from the A23 at Hickstead. This could be achieved by making the lights slower and less efficient so traffic waits for longer and by building traffic calming measures to frustrate cut through drivers significantly enough that they change their route to work.
Another alternative is using traffic calming measures to ensure cars arrive at the junction in more staged intervals by using a lower speed limit such as 20mph or additional traffic lights. We need it to be an access only route which we understand is difficult to enforce,
Move the bus stop on the south bound carriage to the south of the crossroads further down the road as this blocks the through traffic at peak times quite significantly.

From London Road, Hassocks resident

In the main, the Action plan does consider a lot of valid actions. I would support the following:
Enforce the current 30 mph speed limit or actually reduce it to 20mph particularly from the Crossroads, north towards Burgess Hill which is already regularly ignored. Introduce a 30 MPH limit for a longer distance on the A273 between the junction from the A23 right up to Burgess Hill. This would slow down the traffic North to South and vice versa, thereby enabling less of a build-up of traffic at the cross roads and hopefully reduce the flow of traffic. This might discourage the speed merchants from using the A273 and move across to use the A2300.
I am not sure that the "cut engines" whilst queuing is such a good idea. In theory yes, but in practice you could be stopping and starting your engines at least 6 times between Little Copse Road and the crossroads driving North to South on the London Road. Not sure that would go down well with car drivers looking to save fuel.
Consideration of the extra traffic created in the area when considering planning applications. The new development authorised in Hurstpierpoint recently, will inevitably cause an additional traffic flow through Stonepound crossroads towards Hurstpierpoint which also suffers badly from congestion as it is.
Much more needs to be done to divert traffic onto the A2300 to Burgess Hill from the A273 at the A23.Local traffic only should be using this junction. This in particular should be aimed at HGV's etc who come thundering down this road towards Burgess Hill. I must say I was surprised to see such a small % in your results of that type of traffic.

Education re: use of car sharing. Perhaps the larger companies in Burgess Hill/Hayward's Heath could be polled to see how their staff travel to work and maybe they could incentivise their staff to use car sharing by perhaps offering them free parking or a contribution to Charity or something similar or actively encourage staff to use public transport. I know that some companies on the industrial estates in Burgess Hill used to pick up staff from the town centre in Burgess Hill. If this is no longer available, then public transport routes that cover these areas need to be investigated. Noticeably during the school holidays there seems to be a reduction of stationary traffic at peak times in London Road, so clearly the school run aspect needs to be concentrated on a lot more. Perhaps again encouraging parents if they need to use a car at all, to car share. I see a lot of cars particularly coming from Hurstpierpoint direction going towards Hassocks with 1 school child in the car queuing at the traffic lights in the morning.
Thank you for your consideration of these comments,

From Downs View Road, Hassocks resident

HGV drivers- signage on A23 Pyecombe to advise HGV drivers for Burgess Hill Industrial Estate and Ditchling Industrial estate to stay on A 23 to Burgess Hill turn off and not use A273 northbound through Stonepound.
Encourage local residents to use public transport by supporting advertising for rail and bus services, giving actual costs of a journey, compared to parking charges e.g. in Brighton.
Look into the feasibility of real time information displayed at bus stops locally to further encourage people to use bus services.

Responses from other stakeholders

From Head teacher, Windmills Junior School.

I have read the consultation document and in particular the section about School Travel Plans. I see that the suggestion is that the local authorities should encourage schools to include more sustainable travel in their travel plans. We want to do all we can to support the health and well-being of the children in our care. It would therefore be more effective if those local authorities worked directly with the schools rather than simply encouraged, especially as the primary schools are increasing in size. They have more experience and greater expertise in this area.

From Metrobus Limited.

We operate four buses per hour through the crossroads at Stone Pound, on routes 270, 271 and 273.
All the buses used on these routes have particulate traps and have at least the emission levels of Euro IV or higher. They are all certified for use in the London LEZ area.
We plan to invest further in our fleet in order to further reduce emissions.

Other comments noted by Council Officers at the Consultation exhibition

- Concerns about more housing development, especially possible development off London Road.
- Issues about cutting back the trees, both for and against- concerns about Tree Preservation Orders and those on private land.
- Better co-ordination of bus and train timetables is needed
- Problem with buses getting to the station.
- Need to point out to people the benefits of taking the train to Brighton, rather than the car.
- Support for the cycle path from Hassocks station to the Downs- need to find a route perhaps based on existing pathways and the cinder track.

- Cycle path from Burgess Hill to Hassocks needs to be more joined up from the turning before getting to the crossroads, e.g. need to widen the footpath from Little Copse Road to Woodlands Road to allow cyclists access. There are other footpaths that could be developed into cycle paths such as from the new Mackie Avenue estate north to Burgess Hill.
- Investigate the possibility of a slip road at the crossroads for turning left coming from Hurstpierpoint, not controlled by the traffic lights to speed up traffic.
- Working through schools- the value of children putting pressure on parents to address pollution, e.g. switching off engines while queuing at the crossroads
- Short term concerns about the new Sainsburys Local Store opening and school expansion works increasing HGV traffic in Hassocks High Street.
- Problems caused by commuters trying to avoid parking charges at the station, e.g. parking at Stanford Avenue.

A representative of Downlands School, Hassocks attended the event and expressed a wish to work with the Council on the Air Quality Action Plan and getting the pupils involved.