



## WOKING JOINT COMMITTEE

**DATE:** 25 JUNE 2014  
**LEAD OFFICER:** GEOFF MCMANUS, NEIGHBOURHOOD SERVICES MANAGER.  
**SUBJECT:** AIR QUALITY MANAGEMENT AREA (AQMA) – ANCHOR HILL , WOKING  
**AREA:** KNAPHILL & GOLDSWORTH WEST

### **SUMMARY OF ISSUE:**

Woking Borough Council (WBC) has declared an AQMA in the vicinity of the traffic light controlled junction at Anchor Hill, Knaphill. The pollutant of concern relates to Nitrogen Dioxide (NO<sub>2</sub>) which is generated from road traffic using the traffic light controlled 4 way junction located at the top of the hill. WBC in association with Surrey County Council (SCC) is required to work together to produce an Air Quality Action Plan (AQAP) detailing what measures are required to be introduced in the pursuit of achieving air quality objectives. SCC highways have provided several options relating to works at the junction in order to facilitate improvements and hence reduce levels of NO<sub>2</sub>. SCC is prepared to implement minor works to the junction to facilitate a reduction in levels of NO<sub>2</sub>.

### **RECOMMENDATIONS:**

**Woking Joint Committee is asked to agree that :**

Minor works to the Anchor Hill road junction are to be undertaken (Option 1) with the aim of improving air quality

### **REASONS FOR RECOMMENDATIONS:**

Should the committee accept the proposed recommendations this will confirm the requirement for minor works to the junction to be undertaken with a view to reducing the emissions of NO<sub>2</sub> to below the national standards. When this is achieved, the AQMA would be able to be revoked.

## 1. INTRODUCTION AND BACKGROUND:

### FOR DECISION

- 1.1 WBC declared an area of land as an AQMA (in force from 1<sup>st</sup> Feb 2014) at Anchor Hill, Knaphill, Woking. There are several residential properties within the AQMA. The pollutant of concern relates to NO<sub>2</sub> which is generated from road traffic using the traffic controlled 4 way junction. Currently the air quality standard, within the area, is being breached by approximately 10% (standard 40ug/m<sup>3</sup> – level in AQMA 44 ug/m<sup>3</sup>). Annex A sets out the levels going back to December 2012.
- 1.2 **Statutory responsibilities- Environment Act 1995** - There is a bifurcation in the duties and responsibilities within the two tiers of Councils, however, the main responsibility rests with WBC in that WBC has the duty to consider the air quality within the boundaries of the borough and if there is an exceedence of the air quality standards detected then WBC must declare an AQMA. Once the AQMA has been declared then WBC is required to produce an **Air Quality Action Plan (AQAP)** which sets out what measures are required to be introduced in the pursuit of the air quality objectives. SCC have a duty to submit proposals and a timetable for the exercise of highway measures which are targeted at the pursuit of the achievement of air quality standards.
- 1.3 Currently there is the prohibition of heavy goods vehicles (HGV) greater than 7.5 tonnes being permitted to use Anchor Hill road (road with the steepest gradient) this helps to reduce NO<sub>2</sub> levels since large HGVs produce a disproportionate amount of NO<sub>2</sub>. The enforcement of the prohibition of HGVs is the responsibility of the Police.
- 1.4 SCC has provided a list of three work options which are feasible options for junction improvements at Anchor Hill in relation to air quality.

## 2. ANALYSIS:

- 2.1 The problem is the fact that there has been a breach of air quality standards detected and WBC's AQAP will be aimed at providing a way forward to reduce NO<sub>2</sub> levels to such a point that the AQMA can be revoked.
- 2.2 It should be noted that the predicted trend for levels of NO<sub>2</sub> is to fall due to the introduction of a stricter round of European emission standards (EURO 6). Road traffic especially stationary or slow moving traffic is the main culprit for causing high levels of NO<sub>2</sub>. Over the course of a year climatic conditions also have an effect on levels of NO<sub>2</sub> since NO<sub>2</sub> levels rise in the winter months.
- 2.3 There is also a possibility that the higher levels of NO<sub>2</sub> measured in the winter of 2013 at Anchor Hill were as an indirect consequence of a road diversion. Hence due to variables then certain years will have higher annual mean levels.
- 2.4 SCC have, contained within their Local Transport Plan, 2011-2026 (version3) a section relating to air quality. The stated aim is: *To improve air quality in AQMAs on the county road network such that Surrey's borough and districts are able to un-declare these areas as soon as possible, with regard to other strategies and funding constraints.*

The objectives are:

1. Working with the accountable borough or district council for each designated AQMA, to incorporate physical transport measures in the borough or district council's Infrastructure Delivery Plan, agree options for the enforcement of existing regulations and agree options for supporting smarter travel choices, for future implementation as and when funding becomes available, in order to reduce air pollution from road traffic sources;
2. To provide assistance to the borough and district councils in producing their review and assessment reports, and Action Plan progress reports; and,
3. To consider air quality impacts when identifying and assessing transport measures in Surrey.

*Indicators and targets*

*Indicator; - Revocation of AQMAs located on the county road network*

*Target is: The revocation of 2 AQMAs located on the county road network during 2011-2015*

### **3. OPTIONS:**

3.1 SCC have provided 3 options for works as follows;-

- 1) Modify the traffic light operation of the pedestrian phases. Currently all of the traffic approaches are stopped (all red) simultaneously. The signals could be reconfigured to run separate pedestrian phases (walk with traffic) at the same time as non-conflicting traffic phases. The estimated cost of this proposal is £2000-£3000. Without detailed modelling (which could cost more to undertake than the improvement works) it is not possible to quantify exactly how much of an improvement this would make. There will be no additional delays for pedestrian between registering a demand and the green man cycle operating, although it would remove the ability for pedestrians to walk diagonally across the junction. There would be an improvement for traffic flow.

**Pros** - Inexpensive and improvement in traffic flow resulting in slight reduction in NO<sub>2</sub> levels.

- No significant disruption for existing junction users.

**Cons** - Additional cost

- 2) Installation of a sophisticated traffic flow detection system MOVA (Microprocessor Optimised Vehicle Actuation). This is a more efficient mode of traffic light operation than the current standard Vehicle Actuated system. This system should reduce the number of stops for all approaches. To install MOVA requires extensive ducting works to install additional detector loops on all approaches. This will cause disruption and is expensive; hence the estimated cost is £35,000 to £40,000. There would be no negative impact for pedestrians.

**Pros** - Experience at other sites proves that in optimum locations such systems can improve traffic flows by up to 15% and hence have a role in improving air quality.

- No significant disruption for existing junction users.

**Cons** - Cost

- 3) Reconfiguration of the junction, so it is one-way off the junction from Highclere Road, or completely block off Highclere Road so it becomes a three way junction. The estimated cost is £40,000 - £50,000+. Extensive public consultation would have to be undertaken on this option.

- Pros** - Physical alteration of junction would lead to a significant reduction in traffic within the AQMA and hence a significant improvement for air quality
- Cons**
- Physical alteration to the road – local disruption and significant inconvenience to some existing users
  - Substantial planning works required to ensure full understanding of all potential impacts, including any risk from diversion routes
  - Cost
  - Major public consultation exercise required and likelihood to be contentious

3.2 It should be highlighted that due to the popularity in and the growth of diesel powered vehicles and since previous EURO emission standards did not deliver real life driving reductions in NO<sub>2</sub> levels then the Government's prediction of the rate of falling NO<sub>2</sub> levels had not been accurate.

3.3 However, the Government currently suggest that because EURO 6 engine vehicles now undertake a more appropriate testing regime to better represent real life driving hence they will be better placed to model the actual performance of vehicle emissions therefore their predictions of declining levels of NO<sub>2</sub> should be more accurate. See graph contained within background papers depicting the Government's predictions on the decreasing levels of NO<sub>2</sub> from all sectors over the next 16 years. It is the transport sector that shows a sharp reduction in NO<sub>2</sub> levels within this period.

#### **4. CONSULTATIONS:**

4.1 Since the area has been formally declared as an AQMA then all the appropriate consultation has been undertaken.

4.2 Additional consultation will be appropriate to the preferred option and associated impact.

#### **5. FINANCIAL AND VALUE FOR MONEY IMPLICATIONS:**

5.1 It can be seen from the works option produced that there will be cost implications for undertaking specific work to the junction. The range in cost required to undertake improvements to the junction is from £2,000 to in excess of £50,000

5.2 In terms of grant aiding the works then WBC have the potential to apply to Defra for an Air Quality Grant for certain measures whereas SCC can apply to the Department of Transport for a grant under the Local Sustainable Transport Fund.

5.3 It is considered feasible that the lowest cost option (1) could be accommodated through available budgets.

## 6. RISK MANAGEMENT:

- 6.1 Central Government granted themselves the power within the Localism Act 2011 to pass down fines which the UK Government have incurred from the EU due to national breaches of air quality to Councils that have failed in their air quality obligations.
- 6.2 Hence there is the potential for litigation and if the Government is fined then they could look to defer some of their fine to Councils which have failed to meet their duties. All reasonable measures should be taken to reduce levels to below national standards.

## 7. LOCALISM:

- 7.1 The local community within Knaphill directly affected by the AQMA will be positively impacted when the levels of NO<sub>2</sub> have been reduced to such a level that will enable the revocation of the AQMA order.

## 8. EQUALITIES AND DIVERSITY IMPLICATIONS:

- 8.1 None

## 9. OTHER IMPLICATIONS:

Area assessed:	Direct Implications:
Crime and Disorder	No significant implications arising from this report
Sustainability (including Climate Change and Carbon Emissions)	Set out below.
Corporate Parenting/Looked After Children	No significant implications arising from this report
Safeguarding responsibilities for vulnerable children and adults	No significant implications arising from this report
Public Health	Set out below
Human Resource/Training and Development	No significant implications arising from this report

### 9.1 Sustainability implications

There are six direct greenhouse gases listed under the Kyoto Protocol. In general terms, the largest contributor to global warming is carbon dioxide which makes it the focus of most climate change initiatives. There are four indirect greenhouse gases listed; **Nitrogen oxides** being one of them. These indirect greenhouse gases are included because they can produce increases in tropospheric ozone concentrations and this warms the atmosphere.

### 9.2 Public Health implications

With regards to exposure to NO<sub>2</sub> then the World Health Organisation advise that epidemiological studies have shown that symptoms of bronchitis in asthmatic children increase in association with long-term exposure to NO<sub>2</sub>. Reduced lung function growth is also linked to NO<sub>2</sub>. Also, high levels of NO<sub>2</sub> will generally cause irritation of the airways of the lungs, increasing the symptoms of those suffering from lung diseases. In the

atmosphere, nitrogen oxides can contribute to formation of photochemical ozone (smog) which in turn have health consequences

**10. CONCLUSION AND RECOMMENDATIONS:**

10.1 The various tiers of Local Authorities are required to work together in the pursuit of improving air quality particularly in relation to traffic generated pollution and as a result minor works to the Anchor Hill road junction are to be undertaken by SCC with the aim of improving air quality.

10.2 Notwithstanding ongoing improvements to the junction the levels of NO<sub>2</sub> are set to decrease due to stricter European emission standards particularly to diesel vehicles.

**11. WHAT HAPPENS NEXT:**

11.1 WBC officers will continue with the development of the required AQAP and with the monitoring of air quality within the area. The AQAP requires to be fully approved and adopted by September 2015.

11.2 Once the minor works are completed by SCC to the junction at Anchor Hill then as soon as the levels of NO<sub>2</sub> have fallen below the prescribed national levels the AQMA could be revoked.

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**Contact Officer:**

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**Consulted:**

Appropriate consultation in relation to declaring area as AQMA.

**Borough Portfolio Holder**

Councillor Beryl Hunwicks

**Chairman of Woking Joint Committee**

County Councillor Liz Bowes

**County Council Cabinet Member**

County Councillor John Furey

**Annexes:**

One – Graph of NO<sub>2</sub> levels in Anchor Hill

**Sources/background papers:**

1. Map of AQMA – Anchor Hill
2. Future trend in NO<sub>2</sub> levels