

# FAREHAM

## BOROUGH COUNCIL

### Report to Public Protection Policy Development and Review Panel

**Date**                    **07 March 2017**

**Report of:**            **Director of Planning and Regulation**

**Subject:**              **AIR QUALITY ACTION PLAN UPDATE**

#### SUMMARY

The mandatory air quality review and assessment process, which commenced in 1998, has resulted in the declaration of two Air Quality Management Areas (AQMAs) in Fareham, one for a section of Gosport Road, Fareham and one for Portland Street, Fareham. Both AQMAs are due to high levels of nitrogen dioxide (NO<sub>2</sub>) from vehicular exhaust emissions.

Defra published new technical and policy guidance in 2016 in respect of Local Air Quality Management (LAQM) which has resulted in changes to the pollutants appraised and the local authority reporting procedure. The new guidance also allows for the fast-tracking of AQMAs and introduces a local authority responsibility for the particulate air pollutant, PM<sub>2.5</sub>.

Since the last report to the Panel in March 2016, the Council has submitted to the Department for Environment, Food and Rural Affairs (Defra), the new style 2016 Annual Status Report (ASR) including a detailed assessment of air quality along the A32 Fareham. This has confirmed that the Council will have to extend the two existing AQMAs.

#### RECOMMENDATION

That the Panel notes;

- a) the content of this report and the progress that has been made to date in respect of LAQM; and
- b) that a report will be presented to the Executive regarding the New UK Air Quality Action Plan and its implications to Fareham when more detail about it is known.

## **INTRODUCTION**

1. The Environment Act 1995 requires local authorities to regularly review and assess air quality in their areas and to determine whether or not mandatory air quality strategy (AQS) objectives are likely to be achieved for certain air pollutants including NO<sub>2</sub>, particulates (PM<sub>10</sub>) and sulphur dioxide (SO<sub>2</sub>). Where exceedances are considered likely, the local authority must then declare an AQMA and prepare an Air Quality Action Plan (AQAP) with a view to reducing pollution levels in the AQMA.
2. The mandatory air quality review and assessment process has resulted in the declaration of two AQMAs in Fareham, one for a section of the Gosport Road Fareham (Appendix A) and one for Portland Street Fareham (Appendix B). Both AQMAs are due to an exceedance of the mandatory annual mean objective for NO<sub>2</sub> (40ug/m<sup>3</sup>), associated with vehicular exhaust emissions.
3. Nitric oxide (NO) is mainly derived from road transport and rapidly oxidises to NO<sub>2</sub>. The latter can irritate the lungs and lowers resistance to respiratory infections such as influenza. Continued or frequent exposure to higher than normal levels can increase the incidence of acute respiratory illness in children.
4. Particles from combustion sources such as road traffic are measured in a number of size fractions according to their mean aerodynamic diameter. PM<sub>10</sub> means particles with a diameter of less than 10 micrometres; PM<sub>2.5</sub> (fine particles) are smaller, with a diameter of less than 2.5 micrometres and the cause of a hazy atmosphere. These particles can be carried deep into the lungs where they can cause inflammation and a worsening of the condition of people with heart and lung diseases.
5. The evidence associating NO<sub>2</sub> with health effects has strengthened substantially in recent years as noted by the Royal College of Physicians and the Royal College of Paediatrics in their report dated February 2016 and entitled "Every breath we take: the lifelong impact of air pollution". It is now estimated that the effects of air pollution on mortality are equivalent to 40,000 deaths annually in the UK with particulate matter pollution (PM<sub>2.5</sub>) estimated to have an effect on mortality equivalent to nearly 29,000 deaths in the UK, with NO<sub>2</sub> responsible for around 11,000 deaths. Many of the sources of NO<sub>2</sub> are also sources of particulate matter including vehicular emissions. The combined impact of these two pollutants represents a significant public health challenge.
6. Early in January 2017, the Lancet published Canadian research that suggests that people who live near major roads have higher rates of dementia. The study suggests that as many as 11% of dementia cases within 50m of a major road could be caused by traffic pollution.
7. The economic cost from the impacts of air pollution in the UK is estimated at £9-19 billion per year which is comparable to the economic cost of obesity (£10 billion).

## **AIR QUALITY IN FAREHAM**

8. Monitoring information for the LAQM process in Fareham is obtained from two continuous air quality monitoring stations and over 30 diffusion tubes. The monitoring stations are at the junction of Gosport Road and Elms Road Fareham and on Portland Street Fareham. The diffusion tubes are scattered throughout the Borough with emphasis on the location the AQMAs.

9. The monitoring stations accurately monitor the levels of NO<sub>2</sub> in the AQMAs and the results can be used to assess the impact of any local air quality improvement measures contained in the AQAP. The Council signed a new three year servicing, maintenance, data management and website display contract in April 2016.
10. The passive diffusion tubes provide monthly and subsequently, annual mean nitrogen dioxide concentrations, for all sites. The tubes are mainly located on the facades of private properties, close to busy roads. They are left in place for a month before being analysed by an external laboratory for NO<sub>2</sub> concentrations. They are the most efficient method of obtaining information on possible hot spots of NO<sub>2</sub>. If people have concerns about air quality, they can have a tube fitted at their home for a few months.

### **AIR QUALITY ACTION PLAN (AQAP)**

11. The AQAP was approved by the Executive in 2008. With the assistance of the air quality steering group that met many times, many AQAP improvement actions have now been completed. These include:-
  - (a) The opening of the Eclipse busway in April 2012; the two Eclipse services, E1 & E2, are carrying more than 65% more passengers than the two services they replaced (82 & 86). There has been an overall increase in bus passengers of over 10% in Fareham and Gosport since the Eclipse route opened. Between April 2012 - 2016, more than 7.8 million passenger journeys have been recorded on Eclipse services. Annual bus numbers show a year on year increase close to 2.2million (2015/16). New Eclipse buses arrived in the Autumn 2016;
  - (b) The use of the Eclipse busway by cyclists;
  - (c) Improved bus shelters including real time information (RTI) screens at bus stops throughout the Fareham-Gosport peninsula;
  - (d) Improved cycle paths between Gosport and Fareham;
  - (e) The development of the Quay Street "throughabout" reducing the number of vehicles passing close to Portland Street;
  - (f) The provision of an air quality monitoring station at Portland Street;
  - (g) Monitoring information from both stations on the Fareham Borough Council website together with annual air quality reports;
  - (h) The provision of a bus lane on Western Way, Fareham;
  - (i) The development of the Western Road, Fareham bus gate, taking buses away from Portland Street;
  - (j) The publication of an air quality and health leaflet;
  - (k) The provision of two electric vehicle charging points in Fareham;
  - (l) Assisting Hampshire County Council with air quality monitoring for the Yew Tree Drive bus gate planning application;
  - (m) Sustainable travel banners on lamp posts in Gosport 2015;
  - (n) The display of Gosport ferry billboard posters, Autumn 2016;
  - (o) Liaison in the summer of 2015 with the Public Health Team, Hampshire County Council, with further meetings planned for 2017;

- (p) Letter of support from the Council to Hampshire County Council for their Low Emission Bus Scheme application in 2015;
- (q) Air quality assessments through the planning regime e.g. Daedalus, Longfield Ave, Furze Court; Stubbington bypass; Welborne;
- (r) Fareham Borough Council's revised Non-Residential Parking Standards SPD approved September 2015, which may have an impact on private car use;
- (s) Fareham Borough Council's Design Guidance (excluding Welborne) adopted in December 2015, covers issues such as the importance of pedestrian and cycle routes in new developments;
- (t) Hampshire County Council's new draft Walking Strategy approved January 2016;
- (u) New staff bike storage facility provided at Fareham Civic Offices in 2014 and new showers to be installed in this area in 2017;
- (v) Routine inspections as required by the government of permitted installations including the Crematorium, Polycast foundry, vehicle paint resprayers etc;
- (w) Staff taking part in annual sustainable travel challenges such as My Journey Commuter Challenge in May 2015;
- (x) Ongoing provision of information on the Council's website, in response to Freedom of Information requests etc;
- (y) Assisted the planning department in 2016 in respect of Local Information Requirements and what developers should provide in planning applications regarding air quality impacts; and
- (z) Improvements in the Council's refuse fleet e.g. 12 Euro V refuse vehicles; provision of vehicle tracking devices etc.

12. Highway improvements along the A32 corridor are ongoing. The Newgate Lane (Northern section) scheme and the Peel Common Roundabout improvements are complete. Works to Newgate Lane (Southern section) are due to commence this Spring and the Stubbington bypass will hopefully further reduce the impact of vehicles on our AQMAs. It was announced on 3 February 2017, that the Government are to contribute £25.7m to the bypass scheme; Hampshire County Council had already allocated funding of £8.5m. The bypass construction work is likely to start in 2018/19 and it will take two years to complete. The proposals for a multi-modal interchange at Fareham Railway Station/Station Roundabout have advanced well. The need to provide good cycling facilities and a bus rapid transit service between Fareham, Welborne and beyond, remains a matter of high importance.

### **NEW DEFRA GUIDANCE**

13. Defra published new technical (TG16) and policy (PG16) LAQM guidance in 2016. This has resulted in several changes for local authorities, including the following:-

- a) Local authorities will continue to appraise air quality with the main emphasis on those pollutants shown to be challenging in respect of compliance with the AQS objectives - NO<sub>2</sub>, particulate matter and sulphur dioxide (SO<sub>2</sub>);
- b) Local authorities are no longer expected to annually report on levels of benzene, 1,3-butadiene, lead and carbon monoxide;

- c) Local authorities have a new flexible role in working towards reducing emissions and concentrations of PM<sub>2.5</sub> for which there is no recognised safe level and for which there is a significant public health concern;
- d) Local authorities are now required to submit an Annual Status Report (ASR) each year; this replaces the current progress reports, updating and screening assessments (USA), AQAP progress reports and detailed assessments;
- e) The aim of the new style ASR is to simplify and streamline the LAQM system;
- f) The ASR includes a new public-facing executive summary which local authorities are required to complete and make available on their website to help promote air quality locally; and
- g) The guidance emphasises the need for lower and upper tier Councils to work together to ensure that all necessary measures to address air pollution are pursued.

### **ANNUAL STATUS REPORT (ASR) AND DETAILED ASSESSMENT REPORT 2016**

14. The Council's ASR 2016 has been compiled with assistance from an external consultancy. It will be published on the Council's website once it has been approved by Defra.
15. The ASR 2016 includes a Detailed Modelling study for the area north of the existing Gosport Road AQMA for NO<sub>2</sub>. This was required by the conclusions reached in the USA 2015, the last of this style of report. The USA 2015 showed that in 2014, two sites outside the existing Gosport Road AQMA had exceeded the annual mean AQS objective for NO<sub>2</sub> on the Gosport Road.
16. The dispersion modelling study suggests that the 40ug/m<sup>3</sup> annual mean AQS objective is exceeded at 19 receptor locations beyond the boundaries of the current two AQMAs. Therefore, both AQMAs need to be extended. Based on the number of properties located within the extended boundaries proposed for the AQMAs, the number of additional residents exposed to potential exceedences of the NO<sub>2</sub> annual mean AQS objective, is approximately 310 people. Appendices C and D show the proposed extended AQMAs but these will be finalised once Defra has commented on the ASR 2016 including the detailed assessment.
17. Apart from extending the two AQMAs, the ASR 2016 also includes an update of the AQAP as listed above in section 12; a summary of nitrogen dioxide monitoring results in 2015 (see section 18 below) and reference to the Council's new duty in respect of PM<sub>2.5</sub> (see sections 19 - 23 below).
18. In terms of nitrogen dioxide monitoring, the following will be of interest:-
  - a) In 2015, there were 5 exceedences of the NO<sub>2</sub> AQS annual mean objective and these were all at diffusion sites; apart from one tube that is not relevant in terms of exposure, these tubes were either in the existing AQMAs or will be covered by the extended AQMAs; and
  - b) The two monitoring stations did not exceed the AQS annual mean objective for NO<sub>2</sub>.

## **NEW RESPONSIBILITY FOR PARTICULATE MATTER (PM<sub>2.5</sub>)**

19. As detailed in PG16, in addition to PM<sub>10</sub>, local authorities are now expected to also work towards reducing emissions of PM<sub>2.5</sub>. There is clear evidence that this pollutant has a significant impact on human health including premature mortality, allergic reactions and cardiovascular disease.
20. Neither PM<sub>10</sub> nor PM<sub>2.5</sub> levels are monitored in Fareham. Previous reporting has indicated that the PM<sub>10</sub> AQS objective has never been exceeded in Fareham. Using Defra guidance, the current annual mean concentration for PM<sub>2.5</sub> has been estimated at 12.7ug/m<sup>3</sup>. This is below the national 2020 annual mean AQS objective of 25ug/m<sup>3</sup> but the Council is still expected to look to reduce the level of this pollutant.
21. The Public Health Outcomes Framework data tool compiled by Public Health England quantifies the mortality burden of PM<sub>2.5</sub> within England and also on a County and local authority scale. Currently, the fraction of mortality attributable to PM<sub>2.5</sub> pollution across England is 5.1%; for Hampshire, the figure is 4.7%; Fareham is 4.9%; Gosport 4.5%; Portsmouth 5.1%; Eastleigh 4.9% and Havant 4.6%.
22. The AQAP actions to reduce NO<sub>2</sub> associated with traffic, have also helped to reduce PM<sub>2.5</sub> levels. This will continue in the future particularly where we try to promote alternative methods of transport and cleaner vehicles.
23. In response to the challenges of reducing PM<sub>2.5</sub> emissions and concentrations within the Borough, meetings will be held in 2017 with a representative of the Director of Public Health at Hampshire County Council and Council officers from Fareham and Gosport including Environmental Health and others with a public health role such as personnel involved with the Walking to Health schemes etc. The current concentration of PM<sub>2.5</sub> will be discussed together with current and future actions that may assist in reducing this pollutant, for which there is no known safe level.

## **NATIONAL PROBLEMS WITH AIR QUALITY**

24. Air quality problems are not just a Fareham issue; they are a national issue. With regard to the Volkswagen emission scandal, you could even say it is a global issue. The Air Quality Bulletin January 2017, reported that the European Commission is taking legal action against the UK for failing to respond to emissions cheating by car firms and Environmental Health online reported that the Environmental Audit Committee has accused the government of failing to claim compensation for public health consequences of the VW emission scandal and for the time it is taking to fix the affected cars.
25. In 2012, road traffic in the UK was ten times higher than in 1949. Total distance walked each year decreased by 30% between 1995 and 2013. NO<sub>2</sub> and particulates from diesel engines have been less well controlled than emissions of carbon monoxide and hydrocarbons and approximately half the cars in the UK today run on diesel. The Society of Motor Manufacturers and Traders recently reported that 2.69 million cars were registered in 2016, a record high for car sales and 2% higher than in 2015. Although 96% of all new car sales in 2016 were either diesel or petrol fuel type, 10,000 owners chose to go fully electric, up 3.3% on 2015.

26. The UK government is really struggling to achieve AQS objectives particularly for NO<sub>2</sub>. The government is forcing five cities including Southampton to develop Clean Air Zones due to poor air quality. On two occasions recently, a group called Clientearth, has successfully taken the government to court regarding poor air quality; the government has been forced by the Supreme Court to produce a new AQAP for the UK on both occasions; the latest is required by July 2017.
27. Transport for London's new business plan sees funding for air quality doubling, with £875m to be invested in reducing air pollution, up to 2021/22. This is very important as similar to 2016, it has only taken a few days this year for London to breach its annual air pollution limit for the whole of the year in respect of NO<sub>2</sub>. Under EU law, hourly levels of NO<sub>2</sub> should not exceed 200ug/m<sup>3</sup> more than 18 times in a year. By 2100 hours, on 5 January 2017, this legal threshold had been broken on Brixton Road, Lambeth, according to London Air Quality Network.
28. Air Quality News reported on 23 January 2017, that the government has placed electric vehicles at the heart of a green paper outlining its post Brexit Industrial Strategy for the UK.
29. Finally, the National Institute for Health & Care Excellence (NICE) has published draft guidance on air quality which should be finalised by May 2017. It provides policy options suitable for local authorities to implement such as Clean Air Zones, speed reduction techniques, awareness raising amongst the public, smooth driving techniques, reducing emissions in public sector transport and vehicle fleets and increasing cycling routes.

#### **FUTURE AIR QUALITY IMPROVEMENT ACTIONS IN FAREHAM**

30. Due to the unique nature of the Gosport peninsula, the practical solution to the air quality problem on the A32 is to improve the road infrastructure and make further improvements to both public and sustainable transport methods, subject to available funding. These include:-
  - a) Works to Newgate Lane south which will see the construction of a new alignment, further increasing capacity on the route, linking directly to the redesigned Peel Common roundabout;
  - b) Improvements to the road/rail interchange at Fareham railway station to increase capacity and reduce congestion at key arterial junctions;
  - c) The construction of the Stubbington bypass to divert traffic around the outskirts of Stubbington and reduce journey time and peak hour congestion onto and off the Gosport peninsula and
  - d) The extension of the Eclipse busway to Welborne and beyond.
31. Obviously, these schemes rely on adequate funding from various sources including Hampshire County Council, the government and developers. Thankfully, the government has finally confirmed the remaining funding for the Stubbington bypass. Construction should commence in 2018/19 and be completed within two years.

## **RISK ASSESSMENT**

32. Under the Environment Act 1995, Fareham Borough Council must continue to undertake reviews and assessments of air quality, to declare AQMAs as appropriate and action the AQAP in pursuit of achieving the air quality objective for NO<sub>2</sub> at all locations and in the future, to reduce the concentration of PM<sub>2.5</sub>. The government can take appropriate measures to enforce these requirements.

## **CONCLUSION**

33. Subject to Defra's comments in response to the submitted ASR 2016, the Council will extend the two current AQMAs to include all relevant properties where there is a modelled exceedance of the AQS objective for NO<sub>2</sub> of 40ug/m<sup>3</sup>.

34. Subject to funding, the Council will continue to undertake NO<sub>2</sub> monitoring in the Borough, using both diffusion tubes and the two continuous monitors on Gosport Road, Fareham and Portland Street, Fareham, respectively.

35. The Council will continue to ensure compliance with the timetable of submissions to Defra. ASRs will be published on the Council's website together with certain data from the monitoring stations.

36. The Council will continue to progress the AQAP, seeking updates from Hampshire County Council on a regular basis. The Council will also liaise with the Director of Public Health, Hampshire County Council, in respect of its new duty for reducing PM<sub>2.5</sub>.

## **Appendices**

- A.** Current Gosport Road AQMA
- B.** Current Portland Street AQMA
- C.** Proposed extended Gosport Road AQMA
- D.** Proposed extended Portland Street AQMA

### **Background Papers:**

None.

### **Reference Papers:**

[www.phoutcomes.info](http://www.phoutcomes.info)

Reports to the Public Protection Policy Development and Review Panel - 8 March 2016

Fareham and Gosport EH Partnership - Local Air Quality Management- Updating and Screening Assessment 2015

Fareham and Gosport EH Partnership - Local Air Quality Management- Annual Status Report with detailed modelling 2016

LAQM Policy Guidance (PG16) – 2016

LAQM Technical Guidance (TG 16) – 2016

The Mortality Effects of Long Term Exposure to Particulate Air Pollution in the UK - COMEAP (2009)



Estimating Local Mortality Burdens associated with Particulate Air pollution - PHE - April 2014

The Lancet, Living Close to busy roads, air pollution and dementia - Jan 2017

Air Quality Bulletin January 2017

Royal College of Physicians and Royal College of Paediatrics and Child Health - Every breath we take: the lifelong impact of air pollution - February 2016

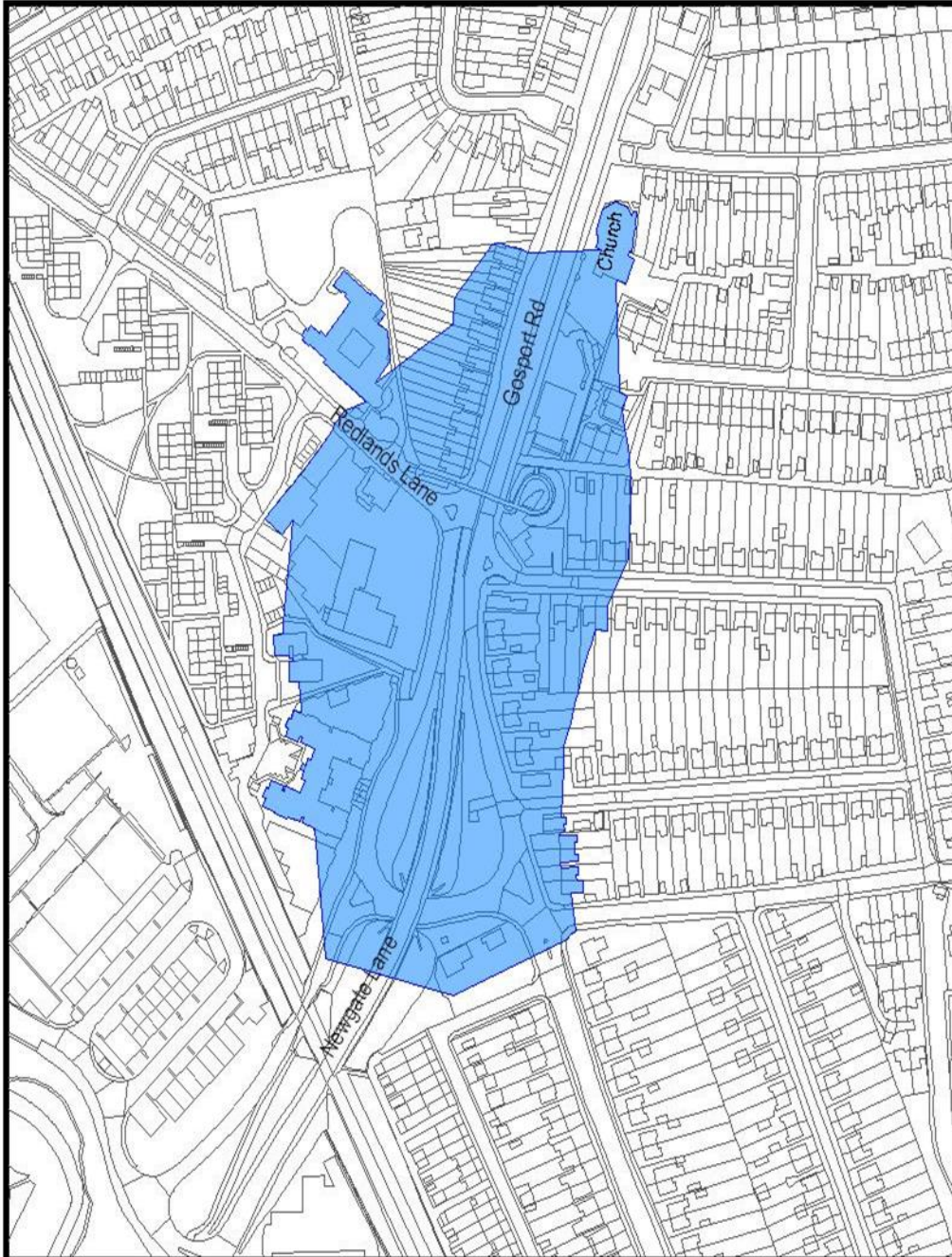
**Enquiries:**

For further information on this report please contact Heather Cusack. (02392 545530).



# FAREHAM BOROUGH COUNCIL

CIVIC OFFICES CIVIC WAY FAREHAM HAMPSHIRE



Fareham Borough Council  
Air Quality Management Area 2006

Map Ref. AQMA 2006 (1)	Ref. Nitrogen Dioxide
Date 31st January 2006	Scale 1:2500

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**FAREHAM** BOROUGH COUNCIL

PO BOX 82 CIVIC OFFICES CIVIC WAY FAREHAM PO16 7TT



**Portland Street  
Air Quality Management Area**

Drawing No.	
Scale	1:750
Date	September 2007

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# MAP OF PROPOSED EXTENDED AQMA GOSPORT ROAD

# APPENDIX C

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### Legend


 AQMA

**MAP OF PROPOSED EXTENDED AQMA GOSPORT ROAD**

**APPENDIX D**

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Legend  
 AQMA