CITY OF YORK COUNCIL	
Decision Session of Cabinet Member for Planning, Transport and Sustainability	14 November 2013
Report of the Assistant Director – Housing and Community Safety	

Air Quality Update Report 2013

Summary

1. This report provides an update on Local Air Quality Management (LAQM) in York, progress with the Low Emission Strategy (LES) and development of the third Air Quality Action Plan (AQAP3). The report is provided for information and the Cabinet Member is asked to note the contents of the report.

Background

2. The Environment Act 1995 requires all local authorities to Review and Assess air quality in their areas and to declare Air Quality Management Areas (AQMAs) where health based air quality objectives are not being met. The main air pollutants of concern in York are nitrogen dioxide (NO_2) and particulate matter (PM). These have been linked to lung diseases (asthma, bronchitis and emphysema), heart conditions and cancer. Based on national estimates, pro rata between 94 and 163 people die prematurely in York each year due to the impacts of poor air quality[1]. This is more than the combined estimate of those who die prematurely from obesity and road accidents. Poor air quality puts the health of York's residents at risk, creates an unpleasant environment for visitors, may damage historic buildings and places an additional financial burden on local health service providers.

[1] Committee on medical effects of air pollution (COMEAP, 2009) estimate 29,000 premature deaths each year in UK. Environmental Audit committee estimate up to 50,000 premature deaths (Environmental Audit Committee Report, March 2010). UK population in 2010 - 62,262,000, York population in 2010 – 202,400 (Office of National Statistics 2011)

3. In 2002 City of York Council (CYC) declared an AQMA around the inner ring road where concentrations of nitrogen dioxide were above the objective levels. Nitrogen dioxide is formed during all combustion processes (primary NO_2), and can also be formed in the atmosphere from other pollutants (secondary NO_2). The main source of nitrogen dioxide in York is traffic.

4. After an initial fall in NO_2 concentrations between 2002 and 2005, concentrations of NO_2 in York showed a marked increase year on year until 2010. Despite an improvement in concentrations between 2010 and 2012, the health based annual average NO_2 objective continues to be exceeded at a number of locations around the inner ring road and in recent years, further air quality issues have been identified in suburban locations. A second AQMA was declared in Fulford in April 2010 and a third on Salisbury Terrace in April 2012. In addition, the city centre AQMA was amended in September 2012. The revised city centre AQMA order reflects the wider area of the city centre now known to be affected by breaches of the annual average NO_2 objective and includes some additional areas where breaches of the hourly objective for NO_2 have also recently been detected (George Hudson Street/Rougier Street).

5. Following the declaration of the first AQMA in 2002, two Air Quality Action Plans (AQAPs) were produced. These AQAPs focused primarily on encouraging 'modal shift' with an emphasis on encouraging walking, cycling and public transport use. Whilst reducing the number of journeys undertaken by car remains an important aspect of air quality management in York, modal shift alone is not delivering a great enough improvement in air quality.

6. To improve York's air quality, emissions from the remaining vehicle fleet (including buses, HGVs and taxis) need to be reduced and further measures are required to minimise traffic emissions from development. This can be achieved by incentivising the uptake of low emission technologies (such as electric and hybrid vehicles) within the general vehicle fleet and by requiring developers to mitigate transport emissions from their developments more effectively (by providing incentives for low emission vehicle use and contributing towards the cost of low emission infrastructure). There also needs to be a more holistic approach to carbon and local air quality management to

ensure all emissions to air are minimised as far as possible. An overarching Low Emission Strategy (LES) is now in place to address this issue.

7. The Low Emission Strategy and other reports produced by City of York Council in relation to LAQM in York are available for download from: http://www.jorair.co.uk/index.php?page=reports.

Update on Local Air Quality Management in York

8. City of York Council submitted an Air Quality Progress Report to DEFRA in April 2013. The report provided an update on the air quality monitoring data collected during 2012 and checked emission data for the city was up to date.

9. The assessment of additional monitoring data collected during 2012 has identified numerous relevant locations within the current AQMAs where annual average nitrogen dioxide concentrations remain above the 40µg/m^3 annual mean objective level. This reflects the findings of previous Review and Assessment reports and indicates that the current AQMAs are still required. Breaches of the hourly mean nitrogen dioxide objective are still being observed in the vicinity of Rougier Street / George Hudson Street, indicating that the revision to the city centre AQMA during 2012 was necessary and is still valid.

10. Some reduction in nitrogen dioxide concentration was observed along Salisbury Terrace during 2012 and it is proposed to review the extent of the AQMA boundary if the objective continues to be met in future years. Additional monitoring data for 2013 will need to be reviewed to establish if the reduction in nitrogen dioxide concentrations in this location is due to more favourable weather conditions experienced 2012.

11. Reductions in annual mean concentrations of nitrogen dioxide have also been observed along Fulford Main Street over the last three years, although concentrations in some areas of Fulford Main Street are still above objective levels. For this reason, there are currently no plans to revoke this AQMA.

12. Concentrations of nitrogen dioxide decreased at all real-time monitoring sites inside the AQMA between 2011 and 2012. Significant reductions in nitrogen dioxide concentration were observed at Gillygate (19.59µg/m^3 reduction), Holgate Road

(5.51µg/m^3 reduction) and Nunnery Lane (4.23µg/m^3 reduction). The reason for the large reduction at Gillygate is currently unclear, but may include some changes in use in the shops along this street, resulting in less loading and reduced congestion. Holgate Road may have been influenced by the new cycle pre-signals and yellow box junction, reducing queuing traffic next to the monitor during the latter half of 2012. The changes made to the Blossom Street / Queen Street Junction (completed in November 2011, but some changes to signal settings made later) may have contributed to the reduction in concentration seen at Nunnery Lane.

13. Both continuous monitoring sites outside the AQMAs (Bootham and Heworth Green) showed reductions in annual average nitrogen dioxide concentrations between 2011 and 2012. This reduction was not considered significant at the Bootham background monitoring site (1.66µg/m^3 reduction). Reductions at Heworth Green roadside monitoring site were greater at 4.53µg/m^3.

14. The annual average nitrogen dioxide objective is being met at most locations outside the existing AQMAs. There are a handful of sites which have given rise to ad-hoc elevated concentrations in recent years, but at present it is not considered necessary to bring them within the AQMA. It is proposed to continue monitoring at these sites and to re-assess their position in 2014.

15. No changes are proposed to the AQMA boundaries based on air quality monitoring during 2012.

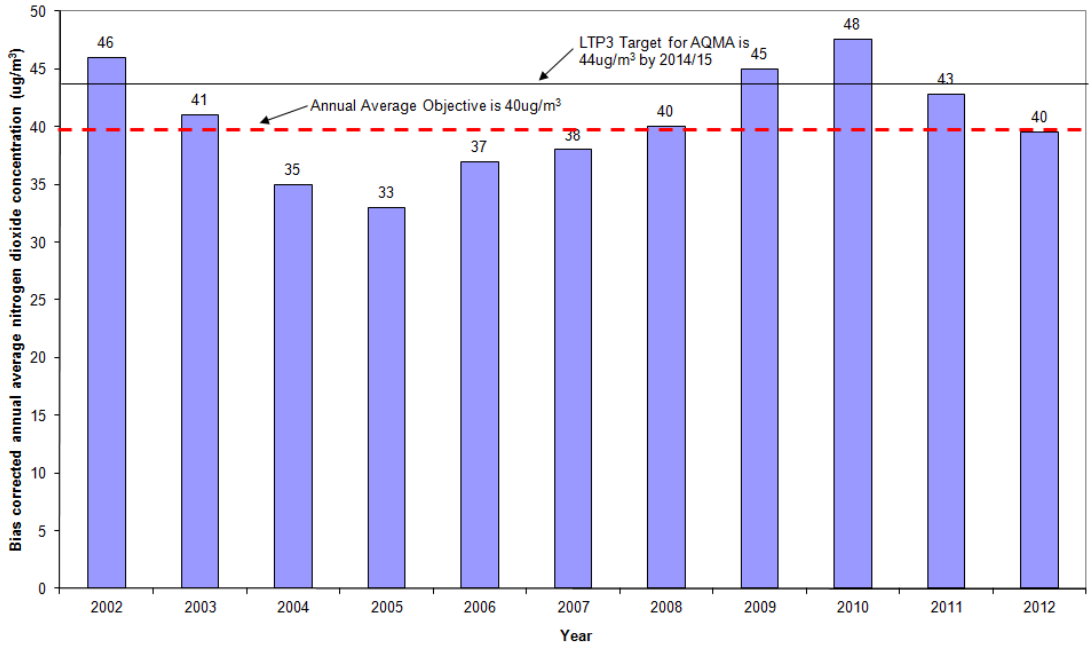
16. Monitoring of other pollutants, including particulate matter (PM_{10}), has not indicated any breaches of health based air quality objective values. A further, comprehensive update for other pollutants will be provided as part of City of York Council's next Air Quality Progress Report, due in April 2014.

Local Transport Plan – Air Quality Indicator

17. A local air quality indicator was established for the purpose of monitoring the impact of York's Local Transport Plan (LTP). This indicator measures the mean of 40 annual average results obtained from 40 diffusion tubes located within York's city centre AQMA. A graph showing the results for this indicator for the period 2002 to 2012 is shown below. As can be seen from

the graph, nitrogen dioxide concentrations across the city were in general decline between 2002 and 2005. In more recent years, there is emerging evidence of a steady increase within the AQMA. However, between 2010 and 2012 an improvement within the AQMA was seen, as levels of nitrogen dioxide across the 40 sites used for the indicator fell from 48µg/m^3 to 40µg/m^3.

Figure 1: Trends in City Centre Annual Mean Nitrogen Dioxide (40 sites average)



Air Quality Action Plan Development

18. A third Air Quality Action Plan (AQAP3) is currently being prepared for the city. AQAP3 will be an overarching document and will include air quality improvement measures specific to the AQMAs in the city centre, Fulford and the Leeman Road area.

19. The measures within AQAP3 will be drawn mainly from the Local Transport Plan (LTP3) and the Low Emission Strategy (LES). The measures in both these documents were originally developed by internal working groups and subject to widespread public consultation. The AQAP3 development process will concentrate on refining the timescales for delivering air quality improvement measures and developing suitable indicators against which to monitor progress.

20. AQAP3 will be based on DEFRA's Policy Guidance note LAQM.PG(09) and will include the following information:

- quantification of the source contributions to the predicted exceedences of the relevant air quality objectives; this will allow the AQAP3measures to be effectively targeted;
- evidence that all available options have been considered;
- how the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- clear timescales in which the authority and other organisations and agencies propose to implement the measures within its plan;
- quantification of the expected impacts of the proposed measures and an indication as to whether the measures will be sufficient to meet the air quality objectives;
- how CYC intends to monitor and evaluate the effectiveness of the plan.

A draft AQAP3 will form the basis of a further report to the Cabinet Member.

Update on Low Emission Strategy

21. A Low Emission Strategy (LES), to holistically address air quality and climate change, was adopted as council policy on 9 October 2012. The LES builds upon the modal shift approach to air quality improvement by introducing new measures to tackle emissions from the remaining vehicle fleet. This includes measures to reduce emissions from heavy goods vehicles (HGVs), buses and taxis which cannot be dealt with effectively through modal shift alone. The Low Emission Strategy is available for download from http://www.jorair.co.uk/index.php?page=reports.

22. Low Emission Strategy measures are currently being worked up in more detail and will be included as specific measures in a revised air quality action plan (AQAP3). Members of the public and other stakeholders will have a further opportunity to comment on delivery of individual measures at this stage. The revised AQAP will take into account the City Centre Movement and Accessibility Framework and the outcomes of the LEZ bus corridor feasibility study outlined in this report. It is anticipated that a revised AQAP will be available for consultation in 2014.

23. Work on the delivery of the proposed LES measures has already commenced and a Low Emission Officer was appointed in February 2012) to promote and accelerate the uptake of low emission vehicles in York. This post is supported through the Local Sustainable Transport Fund (LSTF).

24. Some key areas that have been progressed to date:

Tackling emissions from private vehicles

25. Publically accessible electric vehicle recharging points across city centre CYC car parks and Park and Ride sites. These units have been received and installation is ongoing. These points will provide easy access Pay-As-You-Go recharging facilities for electric vehicles owned by residents and visitors to the city.

26. Delivery of 12 electric vehicle recharging points in hotel and leisure facilities through a partnership with the charity 'Zero Carbon World' (http://www.zerocarbonworld.org/).

27. A bid for 75% match funding of rapid chargers for electric vehicles has been made to OLEV (Office of Low Emission Vehicles). This would provide fast charging at key access points around York supporting the transition to electric buses, taxis and private cars. This is part of a wider Yorkshire rapid charger strategy which is led by City of York Council. York has been successful in obtaining £232,500 funding (CYC contribution £40k) towards 7 rapid chargers.

28. Our electric car show at York Designer Outlet in April 2013 was to showcase the latest electric car technology. The event received extensive TV, press and regional media coverage and attracted people from all over the UK. A short video of the day can be found here: http://www.itv.com/news/calendar/update/2013-04-10/plans-for-pay-as-you-go-electric-car-charging-points-in-york/

29. Provision of low emission vehicles in city centre car clubs and use of these vehicles by council staff. A current list of locations and car club vehicles operating in York can be found: http://www.citycarclub.co.uk/locations/york-car-hire. A number of low emission vehicles now operate as part of the York car club including the Toyota Prius, Toyota Yaris hybrid and Fiat 500 Twin Air.

Tackling emission from buses, coaches and HGVs

30. A business event at the Mansion House in February 2013 to promote alternative fuels and cleaner vehicle technology. The ECO-Stars Scheme was also launched at this event.

31. City of York Council launched an ECO Stars Scheme in November 2012, to help to reduce vehicle emissions, encourage the wider uptake of alternatively fuelled vehicles and raise public awareness about low emission vehicles. ECO Stars provides recognition and guidance on environmental / operational best practice to organisations that operate fleets of vehicles. The scheme has initially been aimed at buses, coaches, Heavy Goods Vehicles (HGVs) and the CYC fleet, and may be expanded later to include taxis and other large fleets. Since November 2012, the scheme has been successfully rolled out to 25 organisations including the City of York Council fleet. The total number of vehicles in the ECO Stars scheme is 2,204.

32. Completion of a Low Emission Zone Feasibility Study, an electric bus feasibility study and submitting a number of Green Bus Fund (GBF) applications. CYC and its bus operator partners, First Group and Transdev, were awarded nine electric buses in May 2013 (part funded by a £825k grant from central government). Six of the new buses will be used on the city's Park and Ride network, while the others will be used to service the University of York and the new Derwenthorpe housing development. Together the nine electric buses will save more than 4,500 tonnes of carbon dioxide emissions over their lifespan. The new electric buses are due to enter service by March 2014. A further announcement of an additional six electric buses was made in October 2013 (part funded by a £566k grant from central government). The buses will also be used on the Park and Ride network. The Council aims to convert 80% of bus traffic in York to electricity with zero emissions of local air pollution by 2017. The most frequent buses through York run short journeys which are ideal for current electric bus technology.

33. Researching Compressed Natural Gas (CNG) refuelling infrastructure for use by freight and buses. A CNG refuelling feasibility study will be commissioned in October/November

2013 and will explore possible links to a freight transhipment centre. A freight transhipment centre aims to reduce the number of large delivery vehicles entering the city by providing a facility, on the edge of the city (but close to the strategic road network) where goods can be consolidated for onwards dispatch in smaller electric / low emission vehicles.

34. EPU are currently finalising an Anti-Idling Vehicle Strategy feasibility study. The study is helping CYC understand the levels of vehicle idling in the city and its contribution to local air pollution. The study will examine the potential benefits (and constraints) of introducing policies to support truck, bus and coach operators reduce idling from their vehicle fleet and reduce fuel consumption, vehicle wear, emissions and noise. The focus at this stage is heavy duty vehicles (bus, coach, truck), but it may widen to include lighter vehicles in due course (such as car and taxi). The study is reviewing idling frequency in key areas in the city centre and along selected bus routes, including service 7 (First Red Line, Designer Outlet P&R) and 26 (Fulford to city centre) that pass through Fulford. The use of anti-idling signage in key locations within the city will be investigated as will the potential for applying anti-idling policies to different vehicle classes.

Council Fleet and other work

35. Completion of a successful bid for £15,000 funding under the Energy Saving Trust's 'Plugged-in Fleet' initiative for analysis of electric vehicles suitability within the CYC fleet (report received from EST in February 2013). The report identified that electric vehicles were cheaper to run as well as being better for the environment and would fit CYC usage patterns. Procurement of further electric vehicles for the CYC fleet is currently being explored by the Fleet/Travel team.

36. Since March 2013 the environmental protection unit has leased a Nissan Leaf electric car for use as a business demonstrator and for promotion of the Low Emission Strategy. EPU has also arranged trials of several zero emission vehicles including cars, vans and an electric road sweeper. The Nissan Leaf pool car has covered 4000 miles in 6 months. It is proving to be our most popular pool car with very low running costs: it has cost less than £100 in electricity compared with over £600 in a diesel vehicle. Whilst mostly used for short/medium length trips

in York, the Leaf has recently been driven to London and back for free using the rapid chargers installed on the M1 corridor. The air quality savings are also significant compared to the diesel pool cars.

37. Production of Air Quality Policy as part of the Local Plan and ongoing development of a LES supplementary planning document (SPD) to ensure new developments incorporate low emission strategy principles and mitigate their emissions. This will include consideration of the potential for developer contributions to fund wider low emission infrastructure, such as alternatively fuelled buses and refuse trucks.

38. Supporting and informing the I-Travel York marketing campaign. The I-Travel York website has been used to promote electric vehicle campaigns and hosts the location of electric vehicle charging points.

39. Providing advice to CYC licensing unit on emission standards for taxis and developing an incentive package for the purchase of hybrid electric taxis. An electric/hybrid discount scheme was established for taxis in October 2012, offering grant funding against the cost of a new or used hybrid or electric taxi. Eight taxis have so far taken up the incentive and are in use on the streets of York. All seven traded in older diesel vehicles for modern hybrids. EPU have also co-supervised two University of York honours projects investigating the emissions impact of electrifying different proportions of the existing taxi fleet and the effect of the “dieselisation” of the private car fleet.

40. A bid was submitted to the new Clean Bus Technology Fund from DfT (Department for Transport) which is grant funding for innovative projects to retro fit existing service buses with NO_x abatement technology. Two local operators are participating and supporting with their own match funding, including the UK’s first electric double decker bus retro-fitting project. Whilst this bid did not receive initial support, DfT have now agreed to offer funding for the electric bus retrofit project, which will convert a Euro 2 double decker bus to zero emission.

41. CYC have been nominated for the Energy Saving Trust’s ‘Fleet Hero’ award for reducing annual business travel mileage by 20%, CO2 emissions by 23% and number of vehicles used by 21% from last year. We have achieved this by introducing a

comprehensive suite of green fleet measures. Employees can no longer drive and park in the car parks at work. Pool cars are offered from a mix of Enterprise, City Car Club and dedicated owned or leased vehicles. These are procured on a low emission vehicle basis including hybrids. Mileage monitoring and management has improved. We have also introduced an electric vehicle into our fleet as recommended by the Plugged-in Fleets initiative and are procuring an additional 5 electric pool cars which will be charged by a solar PV array at the Eco-depot. Results are due 28 November 2013.

DEFRA Air Quality Grant Bids

42. The government supports local authorities' capital expenditure on LAQM through a direct grant scheme known as the Air Quality Support Grant Programme (AQSG). Previous air quality grants from DEFRA have funded the establishment of a comprehensive air quality monitoring network in York and the in-house operation of an air quality computer model. In 2012/13, a new grant scheme was announced, which focused on supporting projects which tackle exceedences of the UK nitrogen dioxide objectives and EU limit values. Eligibility for the grant was limited to English local authorities with one or more Air Quality Management Areas (AQMAs) for nitrogen dioxide (NO_2). York currently has three AQMAs for NO_2.

43. Two AQSG bids were submitted to DEFRA in June 2013. The first was a project to be undertaken by CYC and the amount of funding sought was £35,600. This bid was to undertake a project to facilitate and incentivise local businesses to make the transition to using electric vehicles within their fleets. This would be achieved via the loan of an electric van/LGV and the offer of a free electric vehicle recharge point for the business. The project aimed to ensure that local businesses are able to make better informed choices about the total cost of ownership of zero emission electric vehicles and the wider environmental benefits that fleet electrification can bring.

44. Source apportionment carried out in relation to the Council's Low Emission Zone feasibility study showed that the majority of primary NO_2 emissions were predicted to be emitted by light-duty diesel engine vehicles (≈76%). The lack of improvement in the NO_X characteristics of light-duty diesels in urban driving conditions has important implications for the likely future trends

in ambient NO_X and NO_2 concentrations, and consequently European member states ability to meet the annual mean NO_2 limit value of 40µg/m^3. It is vital that low emission electric vehicles are promoted and incentivised as widely as possible both within and York (which has a higher than national average prevalence of diesel vehicles) and the UK as a whole.

45. Whilst much has been done in York to date in terms of assisting hotels and leisure facilities with electric vehicle recharging infrastructure (project with Zero Carbon World), CYC is keen to engage with other types of local business (whose business falls outside the scope of funding from Zero Carbon World) to maximise opportunities for electric vehicle use and recharging provision in the city.

46. The second bid for £57,750 was submitted in partnership with the Low Emission Strategies Partnership (LESP). This is the organisation that previously sponsored York's role as regional low emission champions (January 2010 - March 2011). This bid was for the support and training associated with an online national database for local air quality action planning measures (which incorporates all aspects of air quality action planning, including modal shift and traffic engineering solutions as well as low emission technology measures). York has been invited to act as lead authority on this national project.

47. The Low Emission Hub provides on-line information management allowing local authorities to capture, present, search and share data on plans and measures which reduce transport emissions, improve air quality and protect public health. The Hub supports structured qualitative case studies and captures quantitative data on costs, emission reductions and health benefits. The hub has been developed by the LESP, using funding from a previous air quality grant. The current bid aims to strengthen the impact and benefits arising from launch of the Hub, and will provide dedicated support to develop case studies.

48. Unfortunately neither of the bids received support from DEFRA this year. Regarding the CYC bid, DEFRA commented that whilst the methodology was clear and the project is very complimentary to other work being carried out in the city, the direct impact on NO_2 concentrations would be very small.

Consultation

49. EPU consult extensively with the public, businesses and stakeholders on Air Quality Management Area boundaries and on the contents of Air Quality Action Plans / Low Emission Strategy measures. In addition, over the last 18 months EPU has undertaken extensive work with businesses to:

    - Provide advice and guidance on the most appropriate locations, technologies and support services for low emission vehicles and re-fuelling/re-charging infrastructure
    - Provide electric vehicle recharging points in a number of hotel and leisure facilities through a partnership with the charity 'Zero Carbon World'
    - Provide low emission vehicles as part of the City Car Club
    - Provide recognition and guidance on environmental / operational best practice to organisations that operate fleets of vehicles such as First York and other bus/coach operators in the city (ECO-Stars / Electric Bus Feasibility Study)
    - Provide incentives to taxi operators via partnerships with local car dealerships (Taxi- incentive)
    - Provide advice on AQ mitigation measures and planning based low emission strategies to developers of major sites within the city.

Options

50. The report is provided for information and the Cabinet Member is asked to note the contents of the report.

Analysis

51. The tasks outlined in this report will allow the council to progress development of low emission measures both locally and regionally, and will ensure that the council carries out its legal duties under the Environment Act 1995.

Council Priorities

52. The development of the low emission strategy and air quality work contributes to the council priorities in the following ways:

- Create jobs and grow the economy – improving transport links to the rest of the UK via the installation of electric charging points and alternative fuels infrastructure, encouraging investment in low emission technology and creating jobs in green industries
- Get York moving - improving local bus services and city centre circulation and campaigning to encourage less reliance on the car via the Low Emission Zone bus corridor feasibility study and the low emission strategy
- Build strong communities – talking with and listening to people about air quality, public health and the environment
- Protect vulnerable people – ensuring the health of people, especially the most vulnerable, by reducing pollution
- Protect the environment – cutting our carbon emissions and improving air quality

Implications

53. The various implications of this report are summarised below:

(a) Financial

- There are no financial implications

(b) Human Resources (HR)

- There are no HR implications

(c) Equalities

- Vulnerable people with respiratory and other illnesses are more likely to be affected by poor air quality.

(d) Legal

- The council has a statutory duty to periodically 'Review and Assess' local air quality against national air quality objectives

and report its findings to DEFRA. There is a requirement to submit regular AQAP progress reports to DEFRA demonstrating that it has a continued commitment to improving air quality in the city. Under the provisions of the Freedom of Information Act 2000 air quality data must be made freely available to members of the public upon request.

(e) Crime and Disorder

- There are no crime and disorder implications

(f) Information Technology (IT)

- There are no IT implications

(g) Property

- There are no property implications

(h) Other

- None

Risk Management

54. In compliance with the council's risk management strategy. There are no major risks associated with the recommendations of this report.

Recommendations

55. The report is provided for information and the Cabinet Member is asked to note the contents.

Reason: LAQM is a statutory undertaking that contributes towards the corporate priorities on protecting the environment and protecting vulnerable people.

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