

A draft framework for York’s third air quality action plan (AQAP3) 2014 to 2020

Summary

1. This report presents a draft framework for York’s third Air Quality Action Plan (AQAP3). This will be the main delivery plan for measures in the York Low Emission Strategy (LES). The draft framework takes into account the findings and recommendations of the York LEZ study, the York anti-idling study and the York electric bus study.
2. Central to the proposed framework is the concept of a ‘*Clean Air Zone (CAZ)*’ where bus emissions will be regulated, based on the frequency of which they enter the inner ring road. The most frequent and hence most polluting services will be required to meet higher emission standards than less frequent services. If a CAZ is introduced, over 80% of bus movements in York will be made by ultra low emission buses, by 2018.
3. Other proposed measures include; reducing vehicle idling, developing a strategic electric vehicle (EV) recharging network, a compressed natural gas (CNG / biomethane) refuelling station, a freight improvement plan and further measures to reduce emissions from taxis and the CYC vehicle fleet.

Background

4. Based on national estimates, pro rata, between 94 and 163 people die prematurely in York each year due to the impacts of poor air quality¹. This is more than the combined estimate of those who die prematurely from obesity and road accidents. Public health framework indicator 3.01

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)

states that the fraction of mortality in York attributable to anthropogenic (man-made) PM_{2.5} particulate air pollution alone is 4.8% of all deaths (82 deaths). The average for this indicator across England is 5.1%.

5. Poor air quality puts the health of York's residents at risk, creates an unpleasant environment for visitors and may damage historic buildings. The health impacts of poor air quality place additional financial burdens on the local health service. The main air pollutants of concern in York are nitrogen dioxide (NO₂) and particulate matter (PM), linked to lung diseases (asthma, bronchitis and emphysema), heart conditions and cancer. The main source of these pollutants in York is traffic; other lesser sources are commercial and domestic heating, with a small contribution from industry and rail.
6. 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. Where an AQMA is declared, an Air Quality Action Plan (AQAP) must be developed to demonstrate how the local authority intends to improve air quality. York currently has three AQMAs (the inner ring road area, A19 Fulford and Salisbury Terrace/Leeman Road) and has drawn up two AQAPs (2004, 2006). The '*Air Quality Update Report 2013*' provided a more detailed update on air quality in each of the AQMAs and progress with delivering air quality improvement measures.
7. Following the publication of AQAP2 (2006) average concentrations of NO₂ continued to rise across the city (until 2010) and new AQMA declarations became necessary at Fulford Road and Salisbury Terrace. The continued deterioration in air quality prompted a review of AQAP2 in 2009 to identify:
 - sources of emissions and the reasons for the continued deterioration in local air quality
 - additional measures to improve air quality

The review process prompted the development of York's Low Emission Strategy (LES).

8. The York LES was adopted in October 2012 and was the first overarching LES in the UK; it sets out a low emission based approach to air quality improvement using a variety of incentive, technology and enforcement based methods to further reduce emissions of air pollutants. The LES recognises the particular need to reduce NO₂ from diesel vehicles, including buses, HGVs and taxis that fall outside the scope of previous modal shift based AQAPs.

9. The LES recommended that studies should be undertaken to investigate the feasibility of including the following measures in a revised AQAP:
 - (a) introduction of a Low Emission Zone (LEZ) bus corridor
 - (b) introduction of low emission buses
 - (c) introduction of anti-idling technology and enforcement

These feasibility studies have been completed and the results have informed the development of the draft AQAP3 framework presented here. A summary of the main findings from each of these feasibility studies can be found at Annex 1 and are discussed further within this report.

10. There was a slight reduction in average NO₂ concentrations across the city centre between January 2010 and December 2013. This suggests that air quality may be starting to improve. It is too soon to determine if this is the start of a long term downward trend or the result of changes in weather patterns, economic activity and/or changes in traffic conditions. It is a positive position from which to commence the delivery of a new AQAP, but significant air quality challenges remain, especially within the AQMAs.
11. In February 2014 the European Commission formally launched infraction proceedings against the UK for breach of NO₂ limit values under the EU Air Quality Directive. Whilst the UK Government is responsible for ensuring compliance with EU air quality obligations, DEFRA has now written to local authorities warning of possible fines being passed on to those with elevated NO₂ concentrations to pay all or part of the infraction fine, using a discretionary power in Part 2 of the Localism Act. No details have been released to date about how these fines will be imposed, but it is understood these will be recurring annual fines.

Air Quality Challenges in York

12. York continues to experience breaches of the annual health based air quality objectives for NO₂ because:
 - a) Emissions of NO₂ from diesel vehicles have not reduced as rapidly as originally predicted by national emission factors. Technology to reduce emissions from diesel vehicles has to date been aimed at reducing emissions of PM and carbon dioxide (CO₂). A direct and previously unforeseen consequence of this is that modern diesel engines (particularly Euro 5 diesel cars) produce a greater fraction of NO₂ at the point of emission than older diesel vehicles.

- b) The ratio of diesel to petrol cars in York has increased in recent years. The increased uptake of diesel cars is a national phenomena driven by:
 - i. taxation systems that have until recently favoured diesel vehicles (on grounds that they are more fuel efficient and produce lower CO₂ emissions)
 - ii. the vehicle scrappage scheme of 2009 that offered financial incentives to replace vehicles over 10 years old with new vehicles, many of which were new, heavier diesel vehicles.
- c) The previous modal shift approach enabled the council to introduce some congestion and air pollution mitigation measures, but did not address emissions from diesel vehicles such as buses, HGVs and taxis. Buses (1%) and HGVs (2%) make up a small proportion of the total vehicle fleet in York, but have a disproportionate impact on total traffic derived NO₂ emissions. As numbers of public transport vehicles increase, so do emissions. Even if additional bus services are provided by new diesel buses (or diesel buses fitted with particulate traps and/ or other exhaust after-treatment systems) these additional vehicle movements still contribute significantly to NO_x emissions and can add to existing NO₂ air quality problems rather than improve them. Lower emission vehicle technologies such as electric and gas need to be employed to mitigate the impact of growth in diesel vehicles.
- d) York has over 750 vehicles licensed to operate as hackney carriages and private taxis. Approximately 80% of these are diesel vehicles which operate intensively in and around the city centre and the AQMAs.
- e) New development brings jobs, housing and other benefits, but, can lead to an underlying 'creep' in traffic emissions and a deterioration in air quality. This can be mitigated if low emission strategy measures are applied to new developments.
- f) There is currently widespread vehicle idling in the city which adds unnecessary emissions to the existing air quality problems

Main considerations for the development of AQAP3

- 13. To achieve further air quality improvement in York all emissions must be minimised as far as possible and there must be a significant shift away

from the reliance on diesel vehicles to provide essential public transport and delivery services.

AQAP3 must therefore:

- (a) Tackle as a priority the disproportionate impact that buses and HGVs have on air quality in the city by:
 - Rapidly reducing the number of diesel buses operating in the city (whilst maintaining current or better levels of service)
 - Tackling unnecessary idling emissions
 - Providing funding opportunities and infrastructure that will allow vehicle operators to switch to alternative fuels (e.g. electric, CNG / bio-methane)
 - Progressing delivery of a freight transshipment centre to reduce the number of HGVs entering the city centre
 - Providing recognition and reward to those operators that lead by example
- (b) Encourage and incentivise the use of hybrid vehicles and other low emission vehicles to reduce the number of diesel taxis
- (c) Ensure CYC continues to lead by example by undertaking further emission reduction measures within its own fleet
- (d) Minimise further increases in emissions as the result of future development (by requiring greater emission mitigation by developers)
- (e) Encourage and facilitate a reduction in the number of diesel vehicles used by individuals and other private fleets by:
 - Linking and highlighting the emission consequences of vehicle choice and driving style to impacts on public health
 - Providing information, advice and training to help people make more informed vehicle purchase / lease choices and drive more responsibly (eco-driver training)
 - Providing access to grants and other incentives to support cleaner vehicle choice by the general public and other fleets
 - Providing easy public access to alternative refuelling and recharging infrastructure
 - Recognising and rewarding those who lead by example

14. AQAP3 must also continue to recognise the important role sustainable transport and climate change policies have in delivering air quality

improvements and identify how air quality improvement policies can help support economic growth and job creation. There are many economic opportunities arising from the development of AQAP3 and these are considered further in paragraph 46.

15. Annex 2 sets out the proposed framework for AQAP3 showing how each of the key considerations (as outlined in paragraph 13) will be addressed. Paragraphs 16 to 46 of this report provide more information on each of the main elements of the proposed AQAP3 framework. Further information on the supporting studies can be found in Annex 1 and full copies of all documents are available on line at www.jorair.gov.uk or from EPU upon request.

Recommended approach – a Clean Air Zone (CAZ)

16. Consideration was given to a Low Emission Zone in York and a feasibility study was commissioned (see Annex 1). A LEZ is based solely on the emission standard of the vehicle, irrespective of the frequency that it operates. However, it was found that a LEZ based on a Euro 3 standard would actually make air quality worse in some areas, whilst a Euro 4/Euro5 standard was found to be prohibitively expensive for smaller bus companies and would threaten the financial viability of some of the more rural routes, thereby having a negative social and economic impact.
17. Central to the proposed AQAP3 framework is the concept of a Clean Air Zone (CAZ). A CAZ differs fundamentally to a LEZ in that bus emissions are controlled within the CAZ based on the frequency with which individual services enter a designated area. The CAZ therefore targets those vehicles that have the greatest impact in terms of air pollution. The CAZ will become the main delivery mechanism for achieving a rapid reduction in the number of diesel buses operating in the city centre. The most frequent services will be required to upgrade to ultra low emission buses by 2018. Infrequent services will be set lower interim targets based on Euro emission standards; this reflects the smaller impact they have on York's air quality and the economic viability of these services. Suggested emission standards for entry into the CAZ can be found in Annex 3. The extent of the CAZ boundaries and the required emission standards will be subject to further consultation with bus operators. As a minimum the CAZ will need to cover the inner ring road and all the roads within it, but could be extended to reflect the existing Better Bus Area. Support will be given to operators to help them access grants and loan schemes to upgrade their vehicles.

18. The CAZ concept has been developed based on the findings of two key documents:
 - Low emission bus corridor feasibility study (LEZ study)
 - Electric bus feasibility study
19. The LEZ study examined the potential impact of introducing a variety of blanket emission controls (Euro 3, Euro 4 or Euro 5) to all buses operating along the Ouse Bridge / George Hudson Street/ Rougier Street / Lendal Bridge corridor. The study assumed that a single emission standard would be applied to all buses entering the LEZ corridor irrespective of their frequency or age. An emission standard control of this type would require as a minimum the replacement of all older diesel buses with newer diesel models or the fitting of exhaust abatement equipment to ensure compliance with the specified emission standard. As a separate scenario, the LEZ study also considered what would happen if all Park & Ride buses were able to operate on electric within the LEZ corridor and other AQMAs.
20. The LEZ study indicated that blanket style application of Euro 4 or Euro 5 emission controls to buses could result in some sizeable reductions in NO₂ at some locations in the city centre. However, even with these emission controls in place, exceedances of the annual average NO₂ air quality objective would still exist in some areas. The study also showed that applying a zero emission standard (electric bus requirement) to a smaller number of frequent bus services might be more effective than requiring the whole fleet to upgrade to Euro 4. A further study was commissioned in January 2013 to examine the feasibility of introducing electric buses into the York fleet.
21. The electric bus feasibility project with ARUP in 2013 engaged the major local bus operators. The Quality Bus Partnership has been briefed (16 December 2013, 7 March 2014 and 14 July 2014) on the electric bus project and the Clean Air Zone (CAZ) as an alternative to a Low Emission Zone (LEZ) and this has been well received. The electric bus feasibility study identified around 65 scheduled bus routes currently operating through the city centre. These routes are operated by approximately 200 buses of varying type, age and emission standard. 82% of all bus movements are carried out by only 49% of the buses and these buses operate on only 20 routes (including all the P&R services). As demonstrated by the LEZ study these 'frequent' flyer services have a disproportionate impact on local air quality; however the electric bus feasibility study has identified that due to their short, frequent duty cycles these frequent services are generally well suited to the adoption of

electric bus technology. Converting the majority of the frequent flyer services to electric would offer substantial benefits for air quality as well as 60% reduced greenhouse gas impact and reduced noise levels. The report included a 'roadmap' for reducing emissions from buses in York upon which the concept of the CAZ has been based. It is anticipated that all local service buses (including both tour buses) will fall within the CAZ requirements. Where necessary bus emissions will be improved through purchase of new vehicles and/or conversion of existing vehicles to electric and /or CNG. Further information on which buses would require upgrading under the current CAZ proposals can be found in Annex 3.

22. Significant progress has already been made towards electrification of York's buses. Electric buses have recently been introduced at the new Poppleton Park & Ride (P&R) site and the Transdev university service and those for the Monks Cross P&R service and the Derwenthorpe development are awaited. In addition, Transdev is now operating the world's first retrofitted electric double decker tour bus. All these projects have been made possible through Greener Bus Fund (GBF) and Cleaner Bus Technology Funds (CBTF) bids written by officers within the council's environmental protection unit (EPU) and sustainable transport teams.
23. Annex 3 provides further information on the proposed CAZ including the proposed minimum area, draft emission control proposals and the expected implications of these for current bus operators (based on current levels of service). These proposals are provided for indicative purposes only and will be subject to further consultation with bus operators as part of the wider AQAP3 consultation.

Anti-idling Measures

24. Unnecessary or excessive vehicle emissions can arise from both poor driving techniques and vehicle idling when a vehicle is left parked with its engine running for a prolonged period of time. Following recommendations made in the LES, a study into the extent of idling emissions in York and the options for reducing it was commissioned in 2013. The study provided evidence of many incidences of vehicle idling currently taking place across the city and has indicated that by adopting basic anti-idling policies, a significant reduction in emissions (both local air pollutants and CO₂) could be achieved, along with even greater fuel cost savings for operators.
25. Anti-idling campaigns can take various forms and may include one or all of the following:
 - Anti-idling signage (either with or without enforcement)

- Anti-idling promotion and marketing campaigns
- Negotiation and joint working with vehicle operators to achieve a reduction in idling
- Adoption of anti-idling legislation

26. Evidence obtained from other cities indicates that in the first instance working with transport operators to highlight the air quality impacts and additional fuel costs associated with idling may be enough to significantly reduce incidences of idling. This type of work could be supported in York by 'spot checks' undertaken by existing bus monitoring officers resulting in reports being sent back to transport operators regarding observed incidences of excessive idling. The framework for AQAP3 suggests a partnership and awareness raising approach to anti-idling in the first instance with a focus on a number of clearly defined 'anti-idling zones'. These would be locations where unnecessary idling is currently known to occur, both on the roadside and at coach parks. Further consultation will be required on the levels of signage (if any) to be provided and the most effective way to engage with transport operators on this issue. AQAP3 will retain an option to adopt anti-idling legislation at a later date. As a greater number of vehicles are converted to electric under the requirements of the CAZ preventing idling will become less of a priority for the city. Further information on the anti-idling feasibility study and initial proposals for anti-idling zones can be found in Annex 1.

ECO-stars

27. The ECO-stars Fleet Recognition Scheme is a free, voluntary scheme aimed at providing recognition and guidance on operational best practice to operators of goods vehicles, buses and coaches whose fleets spend a significant proportion of time operating within York. It is an excellent way to achieve positive engagement with hard to reach groups such as coach operators and road hauliers whose diesel vehicle fleets contribute significantly towards air quality problems in York.
28. An ECO-stars scheme was launched in York in March 2013. Since then over 30 operators have joined the scheme and taken advantage of the free operational advice and publicity offered to them. Membership of ECO-stars is currently completely voluntary with members often being those who are already adhering to industry best practice and striving to meet their environmental responsibilities.
29. To achieve engagement with a wider range of operators, and reduce the amount of marketing resources needed, it is recommended that AQAP3 requires mandatory membership of ECO-stars for any vehicle operator

wishing to provide a CYC funded transport service (e.g. school buses or personal home to school transport), or any operator that undertakes a service on behalf of the council which involves using a large fleet of vehicles e.g. housing repairs, street lighting, waste removal contracts etc. This would be a requirement at the service procurement stage and would not apply to current providers until their contracts are due for renewal. Mandatory membership is only possible if there is continued funding to support the Eco-stars scheme.

30. By requiring mandatory ECO-stars membership CYC can ensure that all transport providers are accessing good quality advice on operational best-practice and can monitor progress and attitudes towards reducing emissions and improving environmental performance. This will ensure that in the future CYC can readily identify and work with organisations that support LES principles and other council priorities in relation to protection of the environment and vulnerable people.
31. There is no cost to join ECO-stars other than the time taken to complete the application process. A mandatory membership system would therefore not place any additional financial burden on potential service providers. In most cases the free advice available to operators through ECO-stars membership will help them to reduce operating costs as well as reducing emissions. Initially operators would not be required to meet a specific ECO-stars standard (although this could become a longer term requirement to drive operational improvement).
32. ECO-stars could be expanded to cover taxis, similar to the scheme in Mid-Devon. This could be used in conjunction with the current taxi incentive scheme to help York taxi drivers identify ways of reducing both emission and fuel costs. The use of ECO-stars as a means of reducing taxi emissions will be considered as part of the development of a wider taxi emission strategy proposed for inclusion in AQAP3. The ECO-stars taxi scheme is a standalone scheme that will involve additional set up and running costs over and above those of the existing scheme, although no current costs are available. It will only be possible to implement this scheme if additional funding can be identified.

LES Planning Measures

33. New development can often result in increased vehicle trips and emissions. Currently air quality assessments are generally only undertaken for the largest developments and are focused on changes in ambient air pollution concentrations. There are very few developments that considered in isolation can be shown to give rise to a 'significant'

change in ambient air pollution concentration, yet almost every development has a 'hidden' emission increase associated with it. If not controlled this hidden emission 'creep' gives rise to cumulative impacts on local ambient air pollution concentrations and may counteract the effectiveness of AQAP and other emission reduction measures.

34. The LES recommended the development of new LES based planning guidance to help address the issue of emission 'creep'. As a result the required policy hooks to allow the development of this guidance have already been incorporated into the emerging Local Plan. The next step is to prepare the guidance document. The draft AQAP3 framework sets out a proposed timetable for this work.
35. New LES planning guidance would follow a similar format to that currently being developed in West Yorkshire, and already in operation in Bradford and Wakefield. Under this system most developments are required to make some provision for electric vehicle recharging and ensure suitable emission controls during the development phase. Larger developments are required to undertake emission impact assessments and provide suitable on-site emission mitigation measures to off-set the additional emissions. This mitigation can include normal travel planning requirements such as walking and cycling facilities, but can also be expanded to include items such as low emission delivery vehicles or low emission community or staff transport. Where it is not possible to provide physical mitigation measures at the site developers can be asked to provide a further financial contribution towards city wide emission reduction projects, such as cleaner service buses and refuse collection vehicles. It may also be appropriate in some cases to obtain a contribution towards the cost of air quality monitoring in the city. Developer contributions could potentially provide a significant source of income to support the upgrading of buses for use in the CAZ.
36. Development of new planning guidance would be subject to wider consultation with CYC planners, developers and other interested parties. To allow time for this process AQAP3 recommends adoption of LES planning guidance as an addendum to AQAP3 during 2015. In the meantime officers will encourage applicants to submit emission impact assessments and will continue to negotiate low emission measures on new developments. A recent example of a successful negotiation includes provision of public electric vehicle recharging points at the Vangarde development at Monks Cross and a significant contribution towards air quality monitoring in the Heworth area.

Strategic EV charging network

37. The Office for Low Emission Vehicles (OLEV) strategy '*Driving the Future Today*' states that by 2040 almost every new car and van in the UK fleet will be an ultra low emission vehicle². This means that vehicles that operate solely or partially on electric will form an increasing proportion of the vehicle fleet and it is anticipated that the demand for EV recharging points will rise considerably in coming years.
38. York has already made significant progress towards a strategic EV charging network in the city and is leading the way within the Yorkshire region. Ten fast charge 'pay as you go' public EV charging points are now available in public car parks and at Park & Ride sites (each able to charge two vehicles simultaneously). There are an additional 12 privately owned sites at hotels, supermarkets and other developments around the city. Further publicly accessible EV charging points have been achieved through a planning condition at the Vanguard site and funding has been secured to bring rapid charging facilities to York during 2014. Five rapid chargers have been installed to support low emission alternatives to high emission vehicles such as buses and taxis. The draft AQAP3 framework sets out timescales for further EV charging provision in York and the development of a strategic EV charging map against which the need for further developer based EV provision will be considered. The locations of all EV charging points are on the i-Travel website and the map is currently being updated with the new locations.

Planning and delivery of Compressed Natural Gas (CNG) refuelling

39. Electric vehicles are not the only option for reducing transport emissions. Vehicles that operate on compressed natural gas (CNG) also offer considerable reductions in emissions of NO₂ and particulate when compared with a conventional diesel engine. CNG is the same fossil fuel derived methane gas that is used in domestic heating and cooking. Under the right pressure conditions (available at limited locations) it can be taken directly from gas mains and put into vehicles at purpose built re-fuelling stations. Methane gas can also be derived from the anaerobic digestion of waste, under these conditions it is referred to as 'bio-methane' and offers considerable additional CO₂ savings above the use of natural gas. Gas mains already routinely carry a blend of natural gas and bio-methane.

² OLEVs definition of an Ultra Low Emission Vehicle (ULEV) is one which emits less than 75g/km of CO₂

40. A CNG feasibility study is currently underway. This study has identified a small number of sites potentially suitable for the development of a CNG refuelling station but only one offers good access to the major road network. Officers are currently in discussion with a developer interested in providing a CNG refuelling station and freight transshipment centre at this site. Work is ongoing to identify potential users of the site and private investors.

Reducing emissions from taxis

41. The current focus of emission reduction work with taxis is the successful local incentive scheme through which taxi drivers can access a grant of up to £3000 (and half price licence fees) to help cover the cost of trading in their old diesel vehicles for a low emission alternative. The scheme has been in operation for over 12 months and has replaced 13 old diesel taxis with low emission petrol hybrid alternatives and one vehicle fully electric vehicle in 2013/14. The taxi and private hire trade are regularly consulted and made aware of the offer and there is still considerable interest in the scheme. This project has produced significant financial and emissions savings for taxi drivers. Funding through the Local Sustainable Transport Fund (LSTF) is available for a further 13 to 14 taxis in 2014/15 and 15 to 16 taxis in 2015/16. Due to the scheme reaching national recognition there is a possibility that a national funding scheme may become available in the longer term. The draft AQAP3 framework sets out a timetable for developing a further low emission strategy for taxis. This will be subject to further consultation with taxi licensing and the taxi trade, but could include setting up of an ECO-stars taxi scheme which could include an Eco driving scheme, the development of further incentives for the uptake of low emission taxis and consideration of the potential for a loan scheme to allow purchase of electric / hybrid taxis.

Reducing emissions from freight

42. Reducing the total number of HGVs passing through the AQMAs, and reducing emissions from individual HGVs, are both important priorities for AQAP3. To date York has adopted the ECO-stars fleet recognition scheme (as detailed above) and has carried out a Freight Improvement Study. The draft AQAP3 sets out the timetable for preparing a Freight Improvement Action Plan (as recommended by the Freight Improvement Study). A key element of the freight action plan will be the mechanism and timetable for delivery of a freight transshipment / consolidation centre to help reduce the number of HGVs requiring to the city centre. There is a possibility that the development of a freight transshipment centre may be able to be linked to the development of a CNG refuelling facility,

allowing goods to be taken off large diesel HGVs and brought into the city centre by smaller CNG fuelled and other low emission vehicles. Development of the freight strategy will be undertaken by the sustainable transport team.

Reducing emissions from the CYC fleet

43. It is essential that CYC continues to lead the way in reducing emissions of local air pollutants and CO₂ from its own vehicle fleet and from contractors. Over the past three years grey fleet mileage (that undertaken by staff in their own vehicles for which mileage payments are made) has been cut by 34 per cent and transport carbon dioxide emissions reduced by 47%. In recognition of this CYC was recently awarded the EST Fleet Heroes Award for grey fleet management. EV infrastructure has been installed to allow the charging of 12 CYC electric pool cars. AQAP3 sets out the headlines for further CYC fleet improvement measures over the next 5 years. These include introduction of further electric pool cars, trial of a 'Light Foot' system to warn against excessive breaking and acceleration, a programme of ECO-driver training for CYC staff and further measures to reduce grey fleet use and minimise overall mileage and emissions.

Other Supporting Measures

Marketing campaign

44. Work is ongoing with public health and marketing colleagues to develop a marketing and communications campaign that will:
- a) Highlight the impacts of vehicle pollution on health
 - b) Provide advice on how to choose vehicles that are better for local air quality and cheaper to operate

This work will support the sustainable travel messages provided under the current I-Travel York campaign. It will include an update of the nationally acclaimed JorAir website to provide more information on emissions, health, and low emission vehicles.

Incentive development

45. Since York now has electric buses and an EV charging network, the next phase in the roll out of LES measures will include development of an incentive plan to encourage members of the public to move towards the use of alternatively fuelled vehicles. Development of the incentive plan

has not yet commenced but ideally will include a package of financial incentives and rewards such as addressing the purchase / loan arrangements of vehicles, reduced public parking / residents parking charges, creation of preferential parking at new and existing developments, shopping vouchers and reduced entrance fees for attractions etc. The incentive plan will be closely linked to the marketing strategy and must be sustainable in the longer term as the numbers of electric vehicles grows and more people want to access the incentives provided. The type and extent of incentives offered will be highly dependant on available funding and the ability to generate interest from potential sponsors / partnership organisations. These will be key considerations in drawing up the incentive plan.

Attracting low emission industries, business and jobs to York

46. The LES and AQAP3 provide considerable opportunities for the development and growth of a low emission vehicle and alternative fuel industry in the city, providing more jobs and business opportunities. Already a recognised leader in the delivery of low emission measures, York has the potential to attract growth in the areas of low emission vehicle sales and maintenance, EV charging point manufacture, installation and maintenance, CNG refuelling, production of bio-methane from waste and low emission tourism. The electric buses recently introduced into York are Optare vehicles built at Sherburn in Elmet, so there is also an opportunity to support manufacturing jobs within the Leeds City Region. Demand for low emission vehicles will rise significantly in the future if other cities follow York's lead. EPU are working with the economic development unit to determine how these opportunities can be best exploited both nationally and internationally.

Can we meet the EU AQ objectives and avoid potential fines?

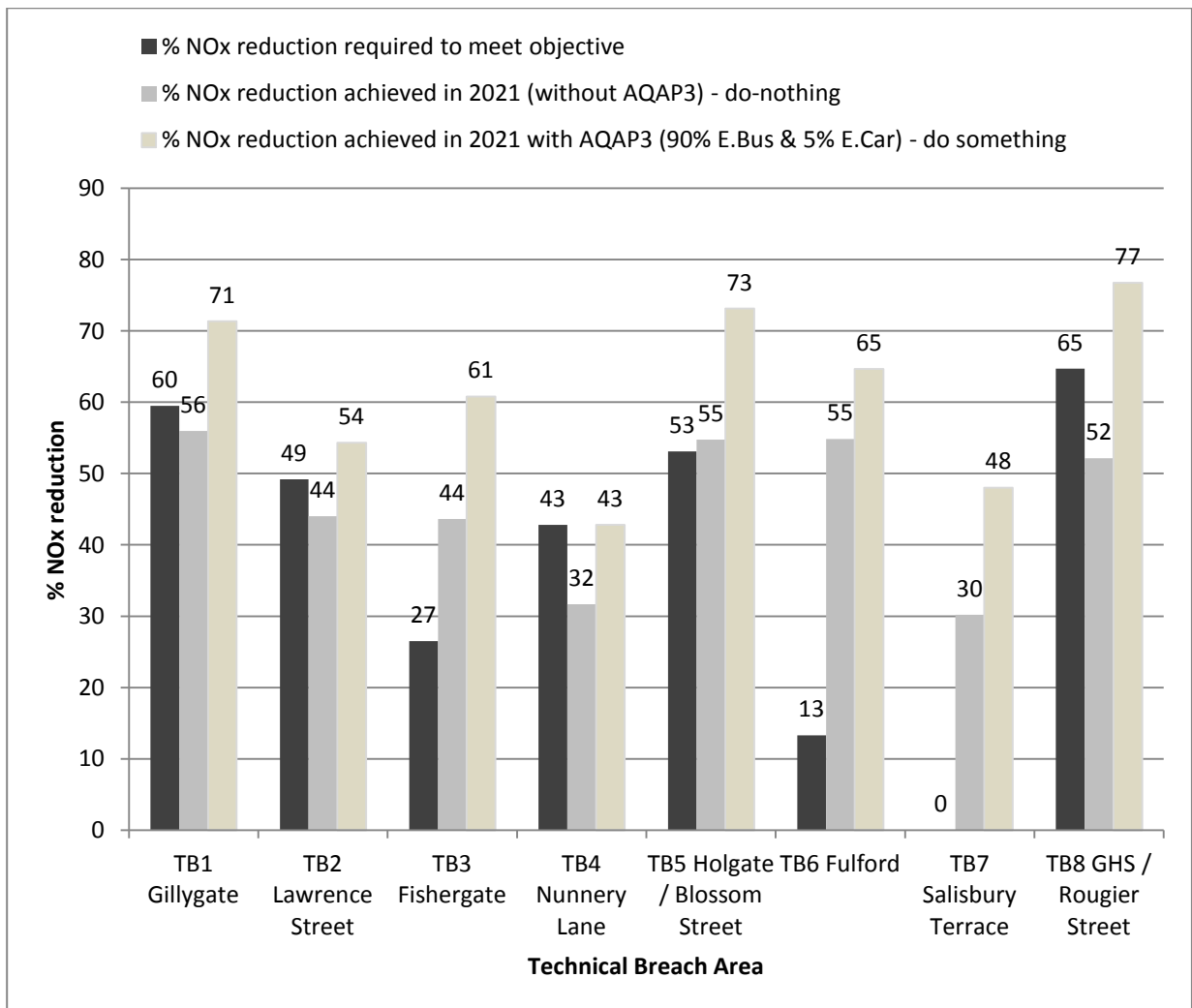
47. As outlined in paragraph 11 it is anticipated that potentially substantial fines could be passed on to local authorities that fail to demonstrate a commitment to air quality improvement and delivery of the national air quality objectives. It is therefore essential that AQAP3 delivers substantial reductions in NO_x emissions at a local level, which together with anticipated national improvements in vehicle emission technology will deliver the best opportunities for compliance with the national air quality objectives in York.
48. Future traffic levels and emissions from individual vehicles are the two main factors influencing air quality in the city and both can be influenced

by council policy and decisions. However weather conditions also have a significant impact on air quality.

49. DEFRA's Emission Factor Toolkit (EFT) has been used to predict changes in NO_x emission levels in the AQMA areas in 2021 (compared with a 2014 baseline) for 'do-nothing' and 'do-something' scenarios.
- The 'do-nothing' scenario assumes that between 2014 and 2021 the only improvement in vehicle emissions in York will arise from national improvements in vehicle emissions driven by higher Euro emission standards. These estimates include the impact of local traffic growth (associated mainly with the emerging Local Plan) that has been factored into the modelling. Local traffic growth is expected to offset some of the emission reductions that would otherwise arise from national emission technology improvements, but a net reduction in NO_x emissions is still expected. Further information on the emissions modelling assumptions can be found in Annex 5.
 - The 'do-something' scenario assumes that the proposed AQAP3 measures (including the CAZ) are implemented alongside the national measures such that the equivalent of 90% of the local bus fleet is assumed to be running on electric and 5% of the local car fleet.

The resulting % change in NO_x emissions arising from the 'do-nothing' and 'do-something' scenarios are then compared with the % of NO_x reduction needed to meet the air quality objectives in each of the AQMAs at the present time (this is based on the highest pollutant concentrations measured in each of the AQMAs during 2012 and 2013 so represents the worst case emission reduction requirement). The results of this work are shown in Figure 1.

Figure 1: Expected level of NO_x reduction under 'do-something' and 'do-nothin' AQAP3 scenarios compared with required level of NO_x reduction to meet the AQ objectives



50. Figure 1 shows that under a ‘do-nothing’ scenario without the AQAP3 measures in place, the annual mean NO₂ air quality objective may be met in Fishergate, Fulford, Salisbury Terrace and Holgate (more borderline) due to national improvements in vehicle emission technology alone. However, to meet the annual average NO₂ objective in Gillygate, Lawrence Street, Nunnery Lane and George Hudson Street the additional impact of the local AQAP3 measures will be essential.

51. By rolling out AQAP3 to the extent that it delivers an equivalent of 90% electric buses and 5% electric cars, the annual mean NO₂ objective may possibly be met in all the current AQMAs with the possible exception of Nunnery Lane where the situation is likely to remain borderline. Less NO_x reduction is predicted for Nunnery Lane because it carries relatively little bus and HGV traffic compared to the other technical breach areas. The impact of low emission bus measures are therefore less effective in this location.

52. Emission reduction figures presented in Figure 1 should be considered very much a best case scenario as they assume that national vehicle emission improvements will be delivered in full and that AQAP3 will be fully implemented locally. Past experience has shown that vehicle emission factors for future years have a high level of uncertainty associated with them, particularly in relation to national vehicle emission standards where the standard expected to be met by a new vehicle at point of sale is often not reflected by the actual emissions from that vehicle in the street. This is particularly the case if the vehicle is poorly maintained, badly driven and/or used in a congested urban environment where emission abatement equipment does not operate to its full capacity.
53. Whilst it is impossible to accurately predict the exact levels of air pollution in 7 years time (in the same way that it is impossible to accurately predict weather conditions) it can be said with certainty that the implementation of the proposed AQAP3 measures will deliver significant emission improvements over and above those that will arise under a 'do-nothing' scenario and that without them compliance with the national air quality objectives in at least four of the current technical breach areas is highly unlikely.
54. By implementing the proposed AQAP3 measures York will be able to present to DEFRA a robust evidence base to show that it has developed and delivered an ambitious, targeted and quantified local emission improvement programme that tackles the main sources of pollution in the city and represents the best possible course of action that the council could reasonably be expected to take at this time. This should place the authority in the strongest possible position should it be presented with the possibility of air quality related fines in the future. It will also help to maintain the current reputation York has within DEFRA and DfT as an authority that delivers in relation to air quality management and will help to ensure that York continues to be successful in attracting external funding opportunities for local transport improvements.

Links to other policies and programmes

55. Like the LES, AQAP3 will have strong links with a number of other policies and programmes currently being delivered within CYC. The main areas of overlap are:

- Modal shift and network improvement measures being delivered through LTP3, the Access York Programme and the I-Travel York campaign
- Traffic congestion is recognised as a significant impediment to the economic prosperity of the city. However a consensus on measures to resolve the issues is much less easy to agree. A cross-party traffic congestion commission to review options for tackling traffic levels in the city is due to be considered at Audit & Governance Committee in late September and Cabinet in November.
- The Climate Change Framework and Action Plan and the sustainable energy roadmap
- Other emission reduction work carried out routinely by EPU, such as control of emissions from industrial premise (IPPC), control of smoke emissions from bonfires (prevention of dark smoke and nuisance) and enforcement of smoke control areas (prevention of smoke emissions from domestic property in designated Smoke Control Areas (SCAs).

Corporate Priorities

56. The LES and AQAP3 contribute to the council's corporate strategy as follows:
- Protect the environment – protecting the local and global environment
 - Protect vulnerable people – protecting the public health (respiratory, cardiovascular and carcinogenic impacts of diesel emissions)
 - Create jobs and grow the economy – opportunities for inward investment by low emission industries and support for sustainable development and tourism. Contributes significantly towards creating a cleaner environment and better visitor experience.
 - Get York moving – creates low and zero emission alternative modes of transport
 - Build strong communities – promotes a unified approach to air quality issues across the city
 - A relentless focus on our priorities – promotes partnership working and reduces CYC travel and fuel costs

Financial Implications

57. Indicative costs and potential sources of funding for the draft AQAP3 measures can be found in Annex 4. Funding for a number of the measures has already been secured through DEFRA air quality grant

funding, LSTF funding and other grants available to support low emission transport improvements e.g. Green Bus Fund, Better Bus Fund, Cleaner Bus Technology Fund etc. Officers will continue to pursue funding from these sources whenever possible but the availability and success of future grant applications is uncertain and may impact on the rate at which some of the measures in AQAP3 can be delivered, particularly the CAZ requirements and associated bus emission upgrades. At present no funding source has been identified for continuation of the ECO-stars fleet recognition scheme.

Human Resources

58. Consultation on AQAP3, overseeing delivery of measures, and progress monitoring can currently be delivered with existing staff resources within EPU. However, as is the case with the majority of the council's services an ongoing departmental review is taking place and this work needs to be factored into the work priorities along side all other priorities, this may impact on the proposed timetable for adoption of AQAP3, delivery of measures and monitoring of the impact of the AQAP3 measures. The post of Low Emission Officer is a temporary post currently funded until 2015. This post is essential to support the successful introduction of the CAZ, further development of the EV charging network and development of CNG facilities in the city. The successful LSTF bid included ongoing funding for this post.

Equalities

59. An assessment of the impacts of the various measures on communities is considered within the annexes.

Legal Implications

60. These relate mainly to the potential for EU fines (paragraph 72) and whether or not the CAZ or anti idling measures would require to be enforced at a future date. The report recommends that these be achieved with the co-operation of service operators; any changes to this would require detailed consultation and cabinet member approval.

Crime and Disorder

61. There are no crime and disorder implications.

Information Technology (IT)

62. There are no IT implications.

Property

63. Poor air quality can mean that certain sites may be unsuitable for certain sensitive uses e.g. residential.

Other

64. Development of the CAZ will require new emission based access restrictions on the inner ring road for buses. These will be developed in full consultation with the traffic commissioner and bus operators.
65. Anti-idling measures may require erection of new signage. This will be undertaken in consultation with colleagues in the transport team. Anti-idling measures may require future adoption of anti-idling legislation, any issues arising from adoption of legislation will require further consultation with members and key stakeholders before any decision is taken.
67. Further control of emissions from development requires publishing of new local guidance for developers and greater contributions towards physical emission reduction measures and/or financial compensation to mitigate emission 'creep'. This guidance will be developed in conjunction planning and sustainability staff at CYC and will be subject to a separate round of public consultation.

Risk Management

68. In compliance with the Council's risk management strategy, failing to meet the health based air quality targets, considering the likelihood and impact, the current net risk rating is 21 or high. The development of AQAP3 should reduce the risk to Medium.
69. Paragraph 11 mentions the potential for EU fines to be passed on to local authorities with elevated NO₂ concentrations to pay all or part of the infraction fine. Whilst the level of potential fines is unknown, it is anticipated that they could be substantial.
70. The ability to deliver the Low Emission Strategy and AQAP3 in accordance with the timetables in this report is dependent on continued funding and the retention of the expertise of current staff; reductions

due to budget savings and restructures would mean that some or all of the measures within this report will not be delivered or that their delivery will be delayed.

71. Reducing emissions from public transport via the LES and AQAP3 will allow bus operators to put on additional services using low emission vehicles to meet the needs of the increased transport infrastructure that is associated with the emerging Local Plan aspirations, without having a detrimental impact on air quality.

Recommendation

72. That Members note the content of the report.

Reason: To keep the Committee informed about progress of York's third Air Quality Action Plan

Contact Details

Authors:

Liz Bates

Principal Environmental
Protection Officer (Air
Quality)
Tel (01904) 551529

Mike Southcombe

Environmental Protection
Manager
Tel (01904) 551514

Chief Officer Responsible for the report:

Steve Waddington

Assistant Director, Housing and
Community Safety - Communities and
Neighbourhoods

**Report
Approved**

Date 26 August 2014

Wards Affected:

All

For further information please contact the authors of the report

Background Papers:

CYC Papers

A Low Emission Strategy for York - Executive Member for Communities and Neighbourhoods (8 June 2010)

Draft Framework for York Low Emission Strategy - Executive (15 March 2011)

Low Emission Strategy Consultation - Cabinet (3 April 2012)

Adoption of the Low Emission Strategy - Cabinet (9 Oct 2012)

Air Quality Update Report 2013 - Meeting of Cabinet Member for City Strategy and Air Quality (14 Nov 2013)

CYC external feasibility studies

York Low Emission Zone Feasibility Study - Halcrow / ITS (July 2013)

City of York Council Electric Bus Study – ARUP (July 2013)

City of York Idling Vehicle Study - TTR Ltd (January 2014)

York Freight Improvements Study – JMP (2013)

National policy and guidance

Air Quality Strategy for England, Scotland, Wales and Northern Ireland – DEFRA (July 2007)

Low Emission Strategies – Using the Planning System to reduce transport emissions – DEFRA Good Practice Guidance (January 2010)

Public Health Outcomes Framework, Healthy lives, healthy people – Improving Outcomes and Supporting Transparency (2013)

Driving the Future Today – a strategy for ultra-low emission vehicles in the UK – OLEV (Sept 2013)

Full copies of all reports are available on request from epu

Annexes (available online)

Annex 1 - Overview of feasibility studies supporting the development of the draft AQAP3 framework

Annex 2 – AQAP3 draft framework

Annex 3 – Clean Air Zone (CAZ) proposal

Annex 4 – AQAP3 costs

Annex 5 – NO_x reduction modelling assumptions

Abbreviations

AQAP – Air Quality Action Plan

AQMA – Air Quality Management Area

CAZ – Clean Air Zone

CBTF – Cleaner Bus Technology Fund

CNG – Compressed Natural Gas

CO₂ – Carbon Dioxide

COMEAP – Committee on Medical Effects of Air Pollution

CYC – City of York Council

DEFRA – Department of for Environment, Food and Rural Affairs

DfT – Department for Transport

EV – Electric Vehicle

EFT – Emission Factor Toolkit

EPU – Environmental Protection Unit

HGV – Heavy Goods Vehicle

ITS – Institute of Transport Studies

LES – Low Emissions Strategy

LEZ – Low Emissions Zone

LSTF – Local Sustainable Transport Fund

NO₂ – Nitrogen Dioxide

OLEV - Office for Low Emission Vehicles

P&R – Park & Ride

PM – Particulate Matter

ULEV – Ultra Low Emissions Vehicle