



GREAT YARMOUTH
BOROUGH COUNCIL

Environment Committee

Date: Wednesday, 14 June 2017

Time: 18:30

Venue: Supper Room

Address: Town Hall, Hall Plain, Great Yarmouth, NR30 2QF

AGENDA

Open to Public and Press

1 APOLOGIES FOR ABSENCE

To receive any apologies for absence.

2 DECLARATIONS OF INTEREST

You have a Disclosable Pecuniary Interest in a matter to be discussed if it relates to something on your Register of Interests form. You must declare the interest and leave the room while the matter is dealt with.

You have a Personal Interest in a matter to be discussed if it affects

- your well being or financial position
- that of your family or close friends
- that of a club or society in which you have a management role
- that of another public body of which you are a member to a greater extent than others in your ward.

You must declare a personal interest but can speak and vote on the matter.

Whenever you declare an interest you must say why the interest arises, so that it can be included in the minutes.

- 3** **MINUTES** **3 - 5**
- To confirm the minutes of the meeting held on the 12 April 2017.
- 4** **MATTERS ARISING**
- To consider any matters arising from the above minutes.
- 5** **FORWARD PLAN** **6 - 6**
- Report attached.
- 6** **AIR QUALITY STATUS REPORT 2017** **7 - 43**
- Report attached.
- 7** **GOVERNMENT LITTER STRATEGY 2017** **44 - 47**
- Report attached.
- Please note that the full Government Litter Strategy for England can be viewed following the link below :-
<https://www.gov.uk/government/publications/litter-strategy-for-england>
- 8** **ANY OTHER BUSINESS**
- To consider any other business as may be determined by the Chairman of the meeting as being of sufficient urgency to warrant consideration.
- 9** **EXCLUSION OF PUBLIC**
- In the event of the Committee wishing to exclude the public from the meeting, the following resolution will be moved:-
- "That under Section 100(A)(4) of the Local Government Act 1972, the public be excluded from the meeting for the following item of business on the grounds that it involved the likely disclosure of exempt information as defined in paragraph 1 of Part I of Schedule 12(A) of the said Act."
- 10** **CONFIDENTIAL MINUTES**
- Details

Environment Committee

Minutes

Wednesday, 12 April 2017 at 18:30

Present :

Councillor Smith (in the Chair); Councillors Annison, Bensly, Fairhead, Grant, Hanton, Pratt, Waters-Bunn and Wright.

Also in attendance were :-

Mrs J Beck (Director of Customer Services), Mr G Buck (Group Manager, Environmental Health), Mr R Hodds (Corporate Governance Manager) and Ms N Holden (Director GYB Services).

1 APOLOGIES FOR ABSENCE

An apology for absence was received from Councillor Hacon.

2 DECLARATIONS OF INTEREST

There were no Declarations of Interest declared at the meeting.

3 MINUTES

The minutes of the meeting held on the 1 March 2017 were confirmed.

4 MATTERS ARISING

The Director of Customer Services reported that with regard to the issue in

respect of St George's Park lighting a Business Case was currently being prepared and would be considered by the Committee at its next meeting.

5 FORWARD PLAN

The Committee received the Forward plan for the Environment Committee.

Members agreed to add the following items to the Forward Plan :-

- Review of Waste Collection and Air Quality review
- St George's Park lighting - Business Case.

6 CAPITAL PROJECTS - PUBLIC CONVENIENCE REFURBISHMENT 2017-18

The Committee was reminded that a rolling programme of Public Convenience refurbishments had commenced in 2016/17. Members now considered the Director of Customer Services report which outlined the works undertaken to date and identified options for consideration for the 2017/18 financial year.

RESOLVED :

(1) That approval be given to the two locations for refurbishment in the 2017/18 Capital Budget as follows :-

- The Conge, Great Yarmouth
- Pier Head, Gorleston

(2) To approve the commencement of a footfall audit for the Public Conveniences at Market Gates to inform a future report on continued usage.

(3) That approval be given to the provision of an additional fully operational "changing places" facility based on location, accessibility and security at Pier Head, Gorleston.

7 CLEANSING OF MAIN ROADS - UPDATE

The Committee considered the Group Manager (Environmental Services) report which updated Members on the review of the methods employed by GYB services with respect to highway cleansing.

The Group Manager reported that he had received a response from Highways England who had stated that contractors Kier had been appointed and were now willing to discuss highway cleansing issues. He also reported on a document received from the Government entitled "Litter Strategy for England"

and he recommended that a report on this matter be considered at the next meeting.

RESOLVED:

(1) That the Group Manager (Environmental Services) report on the cleansing of main roads be noted.

(2) That the Group Manager (Environmental Services) be asked to report to the next meeting on the Government's document entitled "Litter Strategy for England".

8 REVIEW OF SERVICES PROVIDED BY GYB SERVICES

The Committee considered the joint report of the Director of Customer Services and the Managing Director, GYB Services with regard to the review of services provided by GYB Services relating to grass cutting, street cleansing and refuse collection.

With regard to grass cutting, Members commented on the current spraying that had taken place and on the need for this particular service to be more strictly supervised in the future.

RESOLVED :

That the report be noted.

9 GREAT YARMOUTH BOROUGH SERVICES BUSINESS PLAN 2017-18

(Confidential Minute on this Item)

The meeting ended at: 19:18

Forward Plan for Environment Committee

| | Matter for Decision | Report by | Pre Agenda Meeting (PAM) | Environment | Policy & Resources | Council |
|---|--------------------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|----------------|
| 1 | Footway lighting | Group Manager (Environment) | 30/05/17 | 06/06/17 | | |
| 2 | Highways England - Roundabouts | Group Manager (Environment) | 30/05/17 | 06/06/17 | | |
| 3 | Air Quality Report | Group Manager (Environment) | 30/05/17 | 06/06/17 | | |
| 4 | Refuse Collection Review | Director of Customer Services | 11/07/17 | 19/07/17 | | |
| 5 | Board Walk - North Yarmouth | Director of Customer Services | | TBC | | |

Subject: AIR QUALITY STATUS REPORT 2017

Report to: EMT, 25th May 2017;
Environment Committee, 12th June 2017

Report by: David Addy, Environmental Health Officer

SUBJECT MATTER/RECOMMENDATIONS

This report details Great Yarmouth's 2017 Air Quality Annual Status Report. This is an annual statutory report to Government on the state of local air quality in the Borough

Recommendation:

That the committee notes the Air Quality Annual Status Report 2017 and its contents.

1. INTRODUCTION/BACKGROUND

- 1.1 Great Yarmouth Borough Council must annually report on the status of the air quality in the Borough, as required by Part IV of the Environment Act 1995. The reporting format follows a standard national template.

2. THE 2017 REPORT

- 2.1 Overall, this Air Quality Annual Status Report has shown that air quality standards are being met, and should continue to be so for next 12 months.
- 2.2 The Council's detailed air quality monitoring programme gives the surety to vital decisions around transport, infrastructure, business, and housing development for the Borough.
- 2.3 A detailed assessment is not required for any pollutants and the Council will progress to the next Annual Status Report in 2018.

3. FINANCIAL IMPLICATIONS

- 3.1 There are no financial implications at present, as the monitoring and reporting work is within existing budget provision, and the Air Quality Objectives in England are being met.

4. RISK IMPLICATIONS

- 4.1 There are no risk implications at present, as the Air Quality Objectives in England are being met.

5. **CONCLUSIONS**

5.1 Overall, this Air Quality Annual Status Report has not revealed any exceedance of air quality standards and has not predicted any likely exceedance over the next 12 months.

6. **RECOMMENDATIONS**

6.1 That the committee notes the Air Quality Annual Status Report and its contents.

7. **BACKGROUND PAPERS**

APPENDIX 1 – Great Yarmouth Borough Council 2017 Air Quality Annual Status Report (ASR)

| Area for consideration | Comment |
|--|----------------|
| Monitoring Officer Consultation: | No |
| Section 151 Officer Consultation: | No |
| Existing Council Policies: | No |
| Financial Implications: | No |
| Legal Implications (including human rights): | No |
| Risk Implications: | No |
| Equality Issues/EQIA assessment: | No |
| Crime & Disorder: | No |
| Every Child Matters: | No |

APPENDIX 1



GREAT YARMOUTH
BOROUGH COUNCIL

2017 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

May 2017

| | |
|--|--|
| Local Authority Officer | David Addy |
| With gratefully received help and input from | Glenn Buck Jane Jackson Allan Thomson Richard Alger |
| Department | Environmental Services |
| Address | Town Hall Hall Plain Great Yarmouth Norfolk NR30 2QF |
| Telephone | 01493 846678 |
| E-mail | David.Addy@Great-Yarmouth.gov.uk |
| Report Reference number | GYBC/ASR/2017 |
| Date | 22 nd May 2017 |

Executive Summary: Air Quality in Our Area

Overall, this Air Quality Annual Status Report has not revealed any exceedance of air quality standards and has not predicted any likely exceedance over the next 12 months.

The Outer Harbour remains in use for general bulk cargo and there are no plans to set up a container terminal. The Port is now owned by Peel Ports, who have been successful in securing contracts related to north sea offshore wind turbine construction and maintenance. The detailed assessment in 2010 recommended a watching brief and that position remains the same.

The Local Enterprise Zone for the South Denes peninsula, plus the Local Development Order covering this area, and small parts of Southtown and Gorleston, may attract in new industry over the coming years and with its relaxation of planning standards. Close liaison between Environmental Services and Planning departments is essential in early identification of new business that may impact on local air quality.

The large residential development and enterprise zone in Bradwell and South Gorleston is progressing, and the associated A12 – A143 link road (assessed as unlikely to have adverse impacts) is in use.

The dualling of the A47 between Acle and Great Yarmouth has no firm timescale for construction yet, though the A47 Alliance is applying for funding for it as a priority project with the 2020-25 period. Elsewhere the Great Yarmouth Third River Crossing (GYTRC) (between Southtown and the South Denes Peninsula) now has an intended scheme delivery of 2021/2023, with the design phase starting in 2018.

Highways England are currently exploring options to improve a number of A47 junctions in Great Yarmouth, including the Harfrey's Roundabout where the proposed GYTRC would join the A47. The Option Development stage is due to be completed later in 2016 with construction planned for 2020/21. Together the GYTRC and A47 junction improvements have the potential to significantly improve connectivity between the LDO / Enterprise Zone including port of Great Yarmouth, and the strategic road network.

These developments make it absolutely critical that the Council maintains it's type-approved real-time air quality monitoring, so that the data is available to support the design and planning stages of the third crossing, plus to monitor the real-world

operational phase. To this end the Council is commissioning a state-of-the-art replacement monitoring station during this 2017-18 financial year.

A detailed assessment is not required for any pollutants and the Council will progress to the next Annual Status Report in 2018.

Air Quality in Great Yarmouth Borough

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

Great Yarmouth Borough Council's area is situated in the south east corner of Norfolk. It covers the area from Hopton-on-Sea in the south to Winterton-on-Sea in the north, a coastline of some 24 miles. The southern boundary follows the County boundary with Suffolk. To the west and north, the Borough is bounded by rivers of the Norfolk Broads including the Yare, Waveney, Bure and Thurne.

A mixed urban/rural area, the population of approximately 98,000 is concentrated in the urban centres of Great Yarmouth, Gorleston, Bradwell and Caister-on-Sea, with smaller communities in Hopton-on-Sea, Hemsby, Martham, Ormesby and Winterton on-Sea. In summer, the population doubles. The geology is gently undulating in the east on glacial tills with flat marshland adjacent to the Broadland rivers. The River Yare is the principal river of Broadland and this discharges to the North Sea at Great Yarmouth, forming a long narrow port area. There are a number of Sites of Special Scientific Interest and Breydon Water is considered an important international site with a RAMSAR designation.

Most land use outside the built up urban areas is given over to farming. This is predominantly arable farming although there are grazing marshes on the river flood

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

plains. Large areas adjacent to the coast are used in conjunction with tourism which is one of the main industries. The Port is the principal UK base for the Southern North Sea offshore oil and gas industry, plus it is becoming established as a centre for the construction and maintenance of offshore wind farms in the North Sea.

Actions to Improve Air Quality

The Borough does not have any Air Quality Management Areas, and so there is no action plan to improve air quality. However, the Council has taken a significant number of measures forward (see section 2) to improve air quality, and reduce the exposure of the public to adverse air quality.

Conclusions and Priorities

The aforementioned Great Yarmouth Third River Crossing (GYTRC) development makes it absolutely critical that the Council maintains its type-approved real-time air quality monitoring, so that the data is available to support the (2018) design and planning stages of the third crossing, plus to monitor the real-world operational phase. The challenge here is that the Council's air quality monitoring station is over 20 years old, has equipment and enclosure integrity failures, and the landowner required it to be removed from the site, which caused it to be decommissioned. The Council is therefore commissioning a state-of-the-art replacement monitoring station during this 2017-18 financial year, to continue its detailed air quality monitoring programme, which gives the surety to vital decisions around transport, infrastructure, business, and housing development for the Borough.

Local Engagement and How to get Involved

If people would like to find out more about air quality, and how they can contribute to improving it in their area, these links can provide further information:

- Defra's – UK Government – UK-Air website: <https://uk-air.defra.gov.uk/>
- Great Yarmouth Borough Council's historic (the old monitoring station has been decommissioned, to be replaced this 2017-18 financial year) real-time air quality (and meteorology) monitoring data: <http://www.wecare4air.co.uk/air-quality-data/great-yarmouth-bc-gorleston/>

Great Yarmouth Borough Council

- Sustrans' 'CleanSpace' sustainable transport and air quality movement: <http://www.sustrans.org.uk/what-you-can-do/use-your-car-less/join-air-quality-movement> - the Council has bought some of the CleanSpace Tags mentioned on this site, for residents and staff in urban areas to trial. Please contact the report's author or your Neighbourhood Manager for more information. Media enquiries should be directed to the Council's Communications & Press Officer;
- 'Air Pollution' website – college/university level: <http://www.air-quality.org.uk/index.php>
- BBC 'Bitesize' – GCSE air quality: http://www.bbc.co.uk/schools/gcsebitesize/science/21c/air_quality/
- 'Clean Air Kids' – air quality website for children aged 5-11: <http://www.clean-air-kids.org.uk/index.html>
- Evolution of WHO air quality guidelines: past, present and future (2017) – report on the World Health Organisation's evolving advice: <http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2017/evolution-of-who-air-quality-guidelines-past,-present-and-future-2017>

Please note that Great Yarmouth Borough Council does not have any control over the content of the above websites, and is not responsible for their content, which it does not necessarily endorse.

Table of Contents

| | |
|---|-----------|
| Executive Summary: Air Quality in Our Area | i |
| Air Quality in Great Yarmouth Borough | ii |
| Actions to Improve Air Quality | iii |
| Conclusions and Priorities..... | iii |
| Local Engagement and How to get Involved | iii |
| 1 Local Air Quality Management | 6 |
| 2 Actions to Improve Air Quality | 7 |
| 2.1 Air Quality Management Areas | 7 |
| 2.2 Progress and Impact of Measures to address Air Quality in the Borough of Great Yarmouth | 8 |
| 2.3 PM _{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations | 14 |
| 3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance | 16 |
| 3.1 Summary of Monitoring Undertaken | 16 |
| 3.1.1 Automatic Monitoring Sites | 16 |
| 3.1.2 Non-Automatic Monitoring Sites | 16 |
| 3.2 Individual Pollutants..... | 17 |
| 3.2.1 Nitrogen Dioxide (NO ₂) | 17 |
| 3.2.2 Particulate Matter (PM ₁₀)..... | 17 |
| Appendix A: Monitoring Results | 18 |
| Appendix B: Full Monthly Diffusion Tube Results for 2016 | 24 |
| Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC | 26 |
| Appendix D: Map(s) of Monitoring Locations and AQMAs | 29 |
| Appendix E: Summary of Air Quality Objectives in England | 31 |
| Glossary of Terms | 32 |
| References | 33 |

List of Tables

| | |
|---|----|
| Table 2.2 – Progress on Measures to Improve Air Quality | 10 |
|---|----|

1 Local Air Quality Management

This report provides an overview of air quality in Borough of Great Yarmouth during 2016 and 2017. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Great Yarmouth Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of the objectives.

Great Yarmouth Borough Council currently does not have any AQMAs.

Great Yarmouth Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date.

2.2 Progress and Impact of Measures to address Air Quality in the Borough of Great Yarmouth

Defra's appraisal of last year's ASR concluded "*The report is well structured, detailed, and provides the information specified in the Guidance. The following comments are made:*

1. *The local authority has identified the need to consider PM2.5 and this is supported. In future reports they could outline how they plan to work together with Public Health to address this health issue.*
2. *It would be very useful to develop KPIs to include in Table 2.1 so that it obvious how the measures being taken to improve air quality are being assessed."*

Great Yarmouth Borough Council has taken forward a number of measures – both new and building on existing ones – during the current reporting year of 2016 which has helped to improve local air quality. Details of all measures completed, in progress or planned are set out in **Error! Reference source not found..** Key completed measures are:

- Formation of a Cycling Hub;
- Review of domestic bin presentation;
- Payment of cycling allowance to Council staff;
- Work bike scheme;
- Energy efficient new build housing;
- Replacement heating system;
- Switch off of streetlights;
- Replacement of streetlights with energy efficient units;
- Establishment of county wide air quality group;
- Promotion of town walks;
- Carbon reduction and fuel poverty;
- Bike & Go scheme at Gt Yarmouth railway station;
- Leisure centre upgrade (to the Marina Centre);

- Leisure centre upgrade (2nd) (to the Phoenix Pool & Gym);
- Establishment of joint working with Director of Public Health, GYBC & county wide air quality group;

Great Yarmouth Borough Council expects the following measure to be completed over the course of the next reporting year:

- 'Introduction and improvement of safe cycle route between train station and town centre', which is expected to reduce motor vehicle use and emissions, by promoting safe walking and cycle active travel.

Great Yarmouth Borough Council's Local Air Quality Management programme ties in with the priorities within the Council's 'The Plan 2015-2020', by:

- Helping businesses with timely, accurate advice on air quality;
- Safeguarding the health of the population, through ensure a suitable and sufficient air quality monitoring network and programme for now and the future, to meet the air quality objectives, and to reduce the exposure of people to potentially harmful air quality
- Consulting and maintaining a dialogue with Norfolk County Council Highways, and Highways England – which is essential as transport related air quality emissions have the greatest impact in health;
- Working with Planning Authorities and Developers, to ensure that air quality is considered in business, transport, industrial, retail, and residential developments.

Table 2.1 – Progress on Measures to Improve Air Quality

| Measure No. | Measure | EU Category | EU Classification | Organisations involved and Funding Source | Planning Phase | Implementation Phase | Key Performance Indicator | Reduction in Pollutant / Emission from Measure | Progress to Date | Estimated / Actual Completion Date | Comments / Barriers to implementation |
|-------------|---|---|---|---|----------------|----------------------|--|--|------------------------|------------------------------------|--|
| 1 | Formation of a Cycling Hub | Promoting Travel Alternatives | Promotion of cycling | GYBC | Completed | Completed | Individual take-up | N/A | Slow growth in take-up | Complete | Not significant take-up to date, scheme continues to be promoted, particularly with tourists |
| 2 | Review of domestic bin presentation | Vehicle Fleet Efficiency | Fleet efficiency and recognition schemes | GYBC | Yes | Late February 2015 | Reduction in collection vehicle miles | N/A | Planning phase | Autumn 2016 | Initial thoughts are that this may remove one complete refuse vehicle |
| 3 | Payment of cycling allowance to Council staff | Alternatives to private vehicle use | Other | GYBC | Completed | Completed | Reduction in car mileage & take-up of scheme | N/A | Implemented | Complete | Small impact |
| 4 | Work bike scheme | Alternatives to private vehicle use | Other | GYBC | Completed | Completed | Reduction in car mileage & take-up of scheme | N/A | Implemented | Complete | Bikes regularly used by staff |
| 5 | Energy efficient new build housing | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | GYBC | Completed | Completed | Reduction in householder energy bills | N/A | Implemented | 2015 | Reduced energy bills for householders |
| 6 | Replacement heating system | Promoting Low Emission Plant | Public Procurement of stationary combustion sources | GYB Services | Completed | Completed | Reduction in energy bill | N/A | Implemented | 2015 | Reduced energy bill |
| 7 | Switch off of streetlights | Policy Guidance and Development Control | Other policy | GYBC | Completed | Completed | Reduction in energy bill | N/A | Implemented | 2014 | Reduced energy bills for the Council |

Great Yarmouth Borough Council

| | | | | | | | | | | | |
|----|---|---|--|------------------------|-----------|-------------|--|-----|--------------------------------------|-------------|---|
| 8 | Replacement of streetlights with energy efficient units | Policy Guidance and Development Control | Low Emissions Strategy | GYBC | Completed | Completed | Reduction in energy bill | N/A | Planned long term replacement scheme | 2018 | Reduced energy bills |
| 9 | Establishment of county wide air quality group | Policy Guidance and Development Control | Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality | Joint partnership | Completed | Completed | Better air quality in Norfolk | N/A | Implemented | Ongoing | Shared ideas & feeding into County Council policies on transportation & air quality |
| 10 | Work place parking levy | Promoting Travel Alternatives | Workplace Travel Planning | GYBC | Yes | Autumn 2015 | Reduction in car use | N/A | Planning phase | Autumn 2015 | Reduced vehicle commuting |
| 11 | Promotion of town walks | Promoting Travel Alternatives | Promotion of walking | GYBC | Completed | Completed | Reduction in vehicle use in town | N/A | Implemented | Ongoing | Reduction in vehicle use |
| 12 | Carbon reduction and fuel poverty | Policy Guidance and Development Control | Other policy | GYBC | Completed | Completed | Reduction in energy bills | N/A | Implemented | Ongoing | Reduction in energy bills for householders |
| 13 | Energy efficiency advice & links on GYBC website | Public Information | via the Internet | GYBC | Completed | Completed | Reduction in energy use for residents and businesses | N/A | Implemented | 2010 | Advice for residents & businesses |
| 14 | Bike & Go scheme at Gt Yarmouth railway station | Promoting Travel Alternatives | Promotion of cycling | Abellio Greater Anglia | Completed | Completed | Reduction in vehicle use in town | N/A | Implemented | 2014 | Reduction in vehicle emissions |

Great Yarmouth Borough Council

| | | | | | | | | | | | |
|----|--|---|------------------------|------------------------|-------------|-----------|----------------------------------|-----|-------------------|------|--------------------------------------|
| 15 | Leisure centre upgrade | Policy Guidance and Development Control | Low Emissions Strategy | GYBC | Yes | Completed | Reduction in energy bill | N/A | Implemented | 2015 | Reduced energy usage |
| 16 | Leisure centre upgrade | Policy Guidance and Development Control | Low Emissions Strategy | GYBC | Yes | Completed | Reduction in energy bill | N/A | Implemented | 2016 | Reduced energy usage |
| 17 | Leisure centre upgrade | Policy Guidance and Development Control | Low Emissions Strategy | GYBC | Preparation | 2019 | Reduction in energy bill | N/A | Preparation Phase | 2019 | Reduced energy usage |
| 18 | Introduction and improvement of safe cycle route between train station and town centre | Promoting Travel Alternatives | Promotion of cycling | Norfolk County Council | Completed | 2017 | Reduction in vehicle use in town | N/A | Planning phase | 2017 | Reduction in vehicle emissions |
| 19 | Introduction and improvement of safe cycle route between train station and town centre | Promoting Travel Alternatives | Promotion of walking | Norfolk County Council | Completed | 2017 | Reduction in vehicle use in town | N/A | Planning phase | 2017 | Reduction in vehicle emissions |
| 20 | Removal of unnecessary streetlights | Policy Guidance and Development Control | Other policy | GYB Services | Completed | Completed | Reduction in energy bill | N/A | Implemented | 2020 | Reduced energy bills for the Council |

Great Yarmouth Borough Council

| | | | | | | | | | | | |
|----|---|---|--|------------------------|-------------|-----------|---|-----|-------------------|---------|--|
| 21 | Establishment of joint working with Director of Public Health, GYBC & county wide air quality group | Policy Guidance and Development Control | Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality | Joint partnership | Completed | Completed | Better air quality in Norfolk | N/A | Implemented | Ongoing | Shared ideas & feeding into County Council policies on transportation, air quality & public health |
| 22 | Construction of third road river crossing in Great Yarmouth | Transport Planning and Infrastructure | Other | Norfolk County Council | Preparation | 2020 | Reduction in vehicle use in town & better air quality | N/A | Preparation Phase | 2022 | The County and the Borough Councils are working on the business case |

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Great Yarmouth Borough Council is taking the following measures to address PM_{2.5}:

- Reviewing our air quality monitoring arrangements: we consider that it would be beneficial to accurately measure and monitor the ambient atmospheric concentrations of PM_{2.5} within the Borough of Great Yarmouth, in order to be aware what concentrations our residents and visitors are exposed to, and also to enable us to work effectively to our exposure reduction targets. To this end, the Council is purchasing a new real time monitoring station so that we can start PM_{2.5} monitoring during this 2017-18 financial year;
- The Council is working through the Norfolk Environmental Protection Group's (NEPG) Air Quality Sub-Group, to ensure regular two-way engagement with representatives of Public Health England, and the Director of Public Health at Norfolk County Council;
- The Council has started a programme to encourage active travel, exercise, healthy choices, and avoidance of areas of poor air quality by residents and staff within the urban areas, and to produce some useful air quality data. This has been done by allocating out CleanSpace Tags via the Council's Neighbourhood Managers. The Office of Norfolk's Director of Public Health is interested in working with the Council, and so has applied for funding to get more Tags based upon what we are doing.
- The Council will also be meeting and working with the Director of Public Health's Office to help imbed air quality within their work, their Joint Strategic Needs Assessment, to ensure that it is discussed at the Norfolk Health and Wellbeing Board, and to ideally provide data to improve the Public Health Outcomes Framework indicator 3.01 'Fraction of mortality attributable to particulate air pollution' estimate;

Great Yarmouth Borough Council

- The Council is looking to work directly with Public Health England following an active travel and air quality workshop proposed for the 15th of June;
- The Council has direct dialogue with Officers of Norfolk County Council Highways, and also through the NEPG Air Quality Subgroup, on proposed significant changes to highways and traffic flows in the Borough, when possible improvements to PM_{2.5} exposure will also be considered;
- Also the Council's measures from section 2.2 and 'Table 2.2 – Progress on Measures to Improve Air Quality' above, also contribute to reducing PM_{2.5} emissions and/or exposure.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Great Yarmouth Borough Council undertook automatic (continuous) monitoring of nitrogen dioxide, particulate matter, and ozone at one site in Gorleston during 2016. Albeit particulate monitoring finished on the 27th of March 2016, and nitrogen dioxide and ozone monitoring finished on the 27th of October 2016; the former was due to equipment failure, and the latter was due to the landowner requiring removal of the monitoring station. Table A.1 in Appendix A shows the details of the site.

NB. Great Yarmouth Borough Council does not report on sulphur dioxide (SO₂), as previous assessments have shown that concentrations are so low that there is no need to monitor. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. National monitoring results are available at <https://uk-air.defra.gov.uk/interactive-map>

A map showing the location of the monitoring site is provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Great Yarmouth Borough Council undertook non-automatic (passive) plastic diffusion tube monitoring of NO₂ at 12 sites during 2016. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, “annualisation” and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. There were no exceedances of either the annual, or hourly air quality objectives here, with an improving trend for the annual mean objective, and the hourly objective unchanged at 0 exceedances.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year.

There were no exceedances of either the annual, nor 24 hour mean air quality objectives here, with an improving trend for both.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

| Site ID | Site Name | Site Type | X OS Grid Ref | Y OS Grid Ref | Pollutants Monitored | In AQMA? | Monitoring Technique | Distance to Relevant Exposure (m) | Distance to kerb of nearest road (m) | Inlet Height (m) |
|---------|-----------|------------------|---------------|---------------|----------------------|----------|----------------------|-----------------------------------|--------------------------------------|------------------|
| CM1 | Gorleston | Urban background | 652498 | 305600 | PM10 | N | BAM | 5 | 25 | 3 |
| | | | | | Ozone | N | UV Photometer | | | |
| | | | | | Nitrogen Dioxide | N | Chemiluminescence | | | |

Table A.2 – Details of Non-Automatic (diffusion tube) Monitoring Sites (including historic sites 2011-2015)

| Site ID | Site Name | Site Type | X OS Grid Ref | Y OS Grid Ref | Pollutants Monitored | In AQMA? | Distance to Relevant Exposure (m) ⁽¹⁾ | Distance to kerb of nearest road (m) ⁽²⁾ | Tube collocated with a Continuous Analyser? | Height (m) |
|---------|---------------------------|------------------|---------------|---------------|----------------------|----------|--|---|---|------------|
| DT1 | 12 Bridge Road | Roadside | TG52053 | 8188 | NO2 | NO | 0 | 4 | NO | 3 |
| DT2 | 44 North Quay | Roadside | TG52079 | 7828 | NO2 | NO | 0 | 2 | NO | 2.5 |
| DT3 | 60 North Quay (upper) | Roadside | TG52104 | 7665 | NO2 | NO | 0 | 1 | NO | 3 |
| DT5 | 110 South Quay | Roadside | TG52520 | 6862 | NO2 | NO | 0 | 6 | NO | 3 |
| DT6 | 9 Southgates Road | Roadside | TG52569 | 6537 | NO2 | NO | 0 | 3 | NO | 3 |
| DT7 | 41 Southgates Road | Roadside | TG52611 | 6223 | NO2 | NO | 0 | 2 | NO | 3 |
| DT4 | Southtown Road Junction | Roadside | TG52092 | 7419 | NO2 | NO | 0 | 2 | NO | 3 |
| DT8 | Maltings House, Gorleston | Urban Background | TG 52492 | 5612 | NO2 | NO | 5 | 26 | YES | 2.5 |
| DT8 | Maltings House, Gorleston | Urban Background | TG 52492 | 5612 | NO2 | NO | 5 | 26 | YES | 2.5 |
| DT8 | Maltings House, Gorleston | Urban Background | TG 52492 | 5612 | NO2 | NO | 5 | 26 | YES | 2.5 |
| DT9 | 81 North Quay | Roadside | TG52066 | 7874 | NO2 | NO | 0 | 3 | NO | 3 |
| DT3 | 60 North Quay (lower) | Roadside | TG52104 | 7665 | NO2 | NO | 0 | 1 | NO | 2 |

Great Yarmouth Borough Council

| | | | | | | | | | | |
|------|---------------|----------|---------|--------|-----|----|------|---|----|-----|
| DT10 | 1 South Quay | Roadside | TG52326 | 7376 | NO2 | NO | 0 | 3 | NO | 1.5 |
| DT11 | 25 South Quay | Roadside | TG52490 | 7174 | NO2 | NO | 0 | 4 | NO | 2 |
| DT12 | Pasteur Road | Roadside | 651993 | 307370 | NO2 | NO | 14.5 | 9 | NO | 1.5 |

Table A.3 – Annual Mean NO₂ Monitoring Results

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2016 (%) ⁽²⁾ | NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|---------|------------------|-----------------|---|--|---|--------------|-------------|-------------|-------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 |
| CM1 | Urban Background | Automatic | 99.8 | 81.9 | 18.8 | 18.2 | 17.1 | 16.8 | 14.5 |
| DT1 | Roadside | Diffusion Tube | 100 | 100 | 25.8 | 22.1 | 22 | 21.9 | 21.1 |
| DT2 | Roadside | Diffusion Tube | 100 | 100 | 24.8 | 23.95 | 24.1 | 22.5 | 21.2 |
| DT3 | Roadside | Diffusion Tube | 100 | 100 | 25.6 | 25.4 | 26.9 | 25.4 | 24.4 |
| DT5 | Roadside | Diffusion Tube | 100 | 100 | 25.1 | 25.31 | 23.5 | 23.8 | 22.9 |
| DT6 | Roadside | Diffusion Tube | 100 | 100 | 26.4 | 25.81 | 25.6 | 24.4 | 22.2 |
| DT7 | Roadside | Diffusion Tube | 100 | 100 | 23.8 | 20.84 | 22.9 | 20.9 | 20.3 |
| DT4 | Roadside | Diffusion Tube | 91.7 | 91.7 | 38.8 | 37.48 | 37.8 | 37.4 | 33.2 |
| DT8 | Urban Background | Diffusion Tube | 100 | 100 | 18.5 | 18.15 | 17.8 | 16 | 17.7 |
| DT8 | Urban Background | Diffusion Tube | 100 | 100 | 18.3 | 14.27 | 16.9 | 16.3 | 17.7 |
| DT8 | Urban Background | Diffusion Tube | 100 | 100 | 17.8 | 17.18 | 15.4 | 15.7 | 17.1 |
| DT9 | Roadside | Diffusion Tube | 83.3 | 83.3 | 20 | 20.21 | 18.7 | 19.9 | 18.5 |
| DT3 | Roadside | Diffusion Tube | N/A | N/A | <u>27.7</u> | <u>N/A</u> | <u>N/A</u> | <u>N/A</u> | <u>N/A</u> |
| DT10 | Roadside | Diffusion Tube | 75 | 75 | <u>33.2</u> | <u>33.97</u> | <u>30.6</u> | <u>32.8</u> | <u>33.7</u> |
| DT11 | Roadside | Diffusion | 100 | 100 | <u>28.8</u> | <u>N/A</u> | <u>N/A</u> | <u>31.6</u> | <u>27.4</u> |

| | | | | | | | | | |
|------|----------|----------------|----|----|------------|------------|------------|------------|-------------|
| | | Tube | | | | | | | |
| DT12 | Roadside | Diffusion Tube | 25 | 25 | <u>N/A</u> | <u>N/A</u> | <u>N/A</u> | <u>N/A</u> | <u>24.9</u> |

- Diffusion tube data has been bias corrected
- Annualisation has been conducted where data capture is <75%
- If applicable, all data has been distance corrected for relevant exposure

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.4 – 1-Hour Mean NO₂ Monitoring Results

| Site ID | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2016 (%) ⁽²⁾ | NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾ | | | | |
|---------|------------------|-----------------|---|--|--|------|------|------|-------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 |
| CM1 | Urban Background | Automatic | 99.8 | 81.9 | 0 | 0 | 0 | 0 | 0 (80.5) |

Notes:

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM₁₀ Monitoring Results

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2016 (%) ⁽²⁾ | PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|---------|------------------|---|--|--|------|------|------|------|
| | | | | 2012 | 2013 | 2014 | 2015 | 2016 |
| CM1 | Urban Background | 94.3 | 22.4 | 19.9 | 20.7 | 16.6 | 16.8 | 15.5 |

Annualisation has been conducted where data capture is <75%

Notes:

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

| Site ID | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2016 (%) ⁽²⁾ | PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾ | | | | |
|---------|------------------|---|--|---|------|------|------|-------------|
| | | | | 2012 | 2013 | 2014 | 2015 | 2016 |
| CM1 | Urban Background | 94.3 | 22.4 | 3 (30.6) | 8 | 4 | 0 | 0 (14.9) |

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2016

| Site ID | NO ₂ Mean Concentrations (µg/m ³) | | | | | | | | | | | | Annual Mean | | |
|--------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|--|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.83) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
| | | | | | | | | | | | | | | | |
| DT1 - 12 BRIDGE ROAD | 30.2 | 27.8 | 18.0 | 23.3 | 27.4 | 18.6 | 24.1 | 22.5 | 29.1 | 17.3 | 27.0 | 40.2 | 25.5 | 21.1 | 21.1 |
| DT2 - 44 NORTH QUAY | 26.3 | 27.3 | 22.8 | 27.4 | 27.1 | 23.4 | 20.9 | 20.1 | 30.3 | 22.8 | 26.4 | 32.1 | 25.6 | 21.2 | 21.2 |
| DT3 - 60 NORTH QUAY | 29.87 | 27.99 | 25.23 | 30.57 | 33.68 | 30.74 | 23.76 | 22.75 | 36.55 | 25.06 | 32.53 | 33.4 | 29.3 | 24.4 | 24.4 |
| DT5 - 110 SOUTH QUAY | 26.26 | 27.86 | 27.76 | 30.3 | 28.62 | 27.02 | 23.43 | 24.34 | 30.81 | 24.1 | 28.22 | 32.77 | 27.6 | 22.9 | 22.9 |
| DT6 - 9 SOUTHGATES ROAD | 28.4 | 28.22 | 25.59 | 26.36 | 28.6 | 25.61 | 22.94 | 20.09 | 31.32 | 23.67 | 27.75 | 33.05 | 26.8 | 22.2 | 22.2 |
| DT7 - 41 SOUTHGATES ROAD | 27.66 | 27.27 | 24.32 | 24.31 | 27.88 | 23.99 | 20.12 | 16.55 | 25.79 | 19.97 | 26.53 | 29.14 | 24.5 | 20.3 | 20.3 |
| DT4 - SOUTHTOWN ROAD | 41.12 | 41.7 | 33.42 | 33.3 | 41.42 | 44.6 | 38.93 | 35.86 | - | 41.01 | 41.19 | 47.54 | 40.0 | 33.2 | 33.2 |
| DT8 - MALTINGS HOUSE | 22.7 | 23.5 | 18.4 | 17.5 | 17.6 | 15.7 | 15 | 12.2 | 18.9 | 14.9 | 22.7 | 27.9 | 18.9 | 15.7 | 17.7 |

Great Yarmouth Borough Council

| | | | | | | | | | | | | | | | |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| DT8 - MALTINGS HOUSE | 21.6 | 21.6 | 19.1 | 16.8 | 18 | 16.2 | 14.6 | 13.1 | 20.5 | 15.9 | 22.4 | 27.7 | 19.0 | 15.7 | 17.7 |
| DT8 - MALTINGS HOUSE | 19 | 21.1 | 19.1 | 16.4 | 18.1 | 15.3 | 14.8 | 11.5 | 19.3 | 15.6 | 22.6 | 27.4 | 18.3 | 15.2 | 17.1 |
| DT9 - 81 NORTH QUAY | 24.43 | 23.96 | 19.83 | 24.03 | 22.3 | - | 17.72 | 15.2 | 22.04 | - | 25.55 | 28.1 | 22.3 | 18.5 | 18.5 |
| DT10 - 1 SOUTH QUAY | | 34.78 | 32.6 | 47.84 | 43.24 | 44.13 | 40.53 | 36.23 | - | 41.91 | 44.05 | - | 40.6 | 33.7 | 33.7 |
| DT11 - 25 SOUTH QUAY | 34.91 | 35.28 | 26.67 | 38.23 | 34.06 | 31.37 | 30.47 | 27.96 | 27.72 | 32.03 | 38.06 | 39.22 | 33.0 | 27.4 | 27.4 |
| DT12 - PASTEUR ROAD | - | - | - | - | - | - | - | - | - | 29.96 | 31.27 | 34.82 | 32.0 | 26.6 | 24.9 |

Local bias adjustment factor used

National bias adjustment factor used

Annualisation has been conducted where data capture is <75%

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

QA/QC of Diffusion Tube Monitoring

The diffusion tubes are supplied by Gradko Environmental, part of Gradko International Ltd. They consist of 20% TEA (Triethanolamine) in deionised water. Once received by post the tubes are stored in a refrigerator until required. Once the tubes have been placed in their holders, the end caps are removed and the tubes exposed for a month. At the end of the period the tubes are recapped and retrieved and stored in the refrigerator until returned by post to the laboratory for analysis. A travel blank is used. This travels everywhere with the exposed tubes but is not itself exposed. It is stored in the refrigerator and sent for analysis with the exposed tubes. Its purpose is to check on contamination of the tubes.

Gradko International is accredited by UKAS for the analysis of NO₂. Gradko also take part in the AIR NO₂ Proficiency Testing Scheme on a quarterly basis. Their AIR results over the last twelve rounds of testing gave 100% laboratory performance in terms of the accuracy and precision of results (Summary of Laboratory Performance in AIR NO₂ Proficiency Testing Scheme (April 2015 – February 2017))

Diffusion Tube Bias Adjustment Factors

The National bias adjustment factor for the period was 0.94 (Spreadsheet Version 2 3/17)

Factor from Local Co-location Studies

The Borough Council has co-located three diffusion tubes with its continuous air quality monitors. The site is set up as an urban background site. From the co-location study the local bias adjustment factor derived is 0.83 for 12 months of data – 10 of which the continuous monitor was running – as detailed in Figure C.1 below.

WeCare4Air who took over the original data handling contract the Council had for many years with Casella, then briefly Supporting U. Regular check calibrations and inlet filter changes are also carried out by local Council personnel.

The BAM unit was also maintained as part of the servicing contract with local Council personnel carrying out tape changes approximately every two months (when operational).

All site visits are recorded in the site log and describe adjustments, repairs, problems encountered etc. Following scheduled service visits reports are issued by the engineers.

PM Monitoring Adjustment

The Met-One BAM PM monitoring unit utilised an unheated inlet and meets the equivalence criteria for PM10 provided the results are corrected for slope.

Appendix D: Map(s) of Monitoring Locations and AQMAs

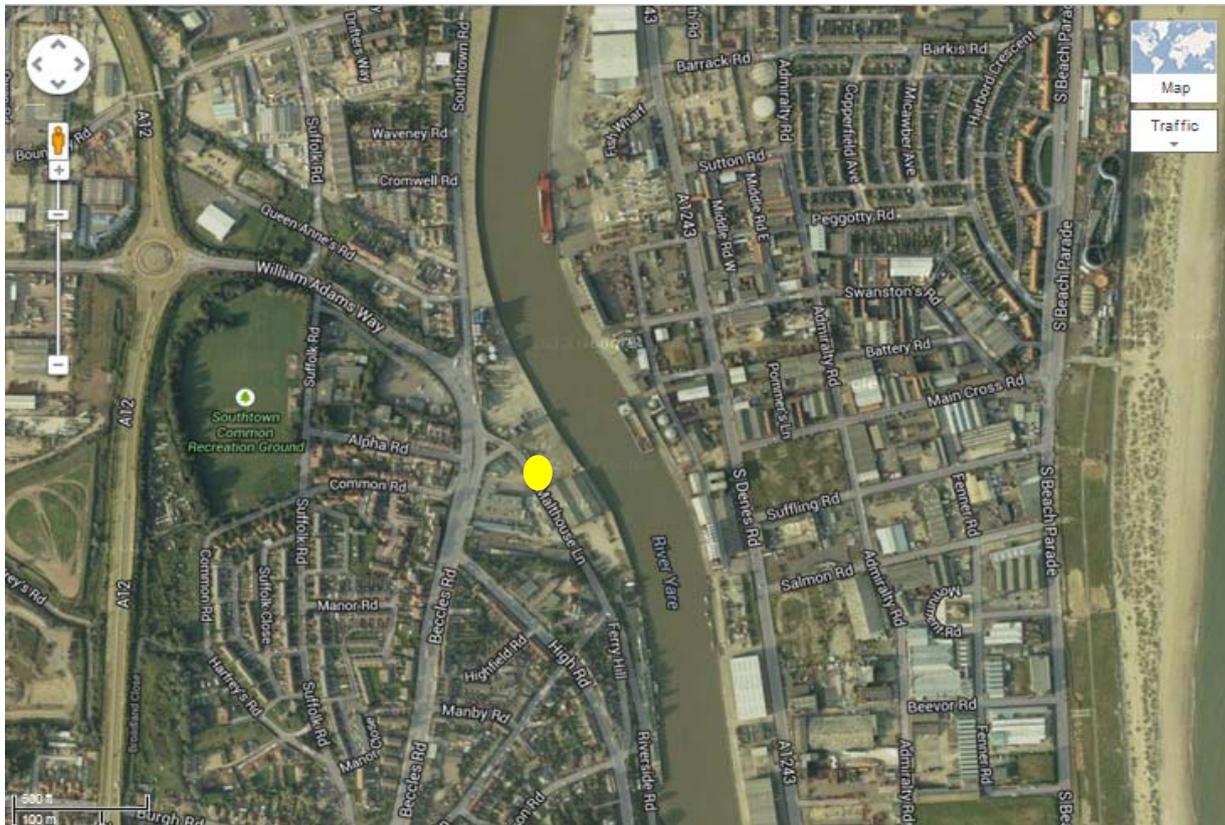


Figure D.1 Location of the Automatic Air Quality Monitoring Station

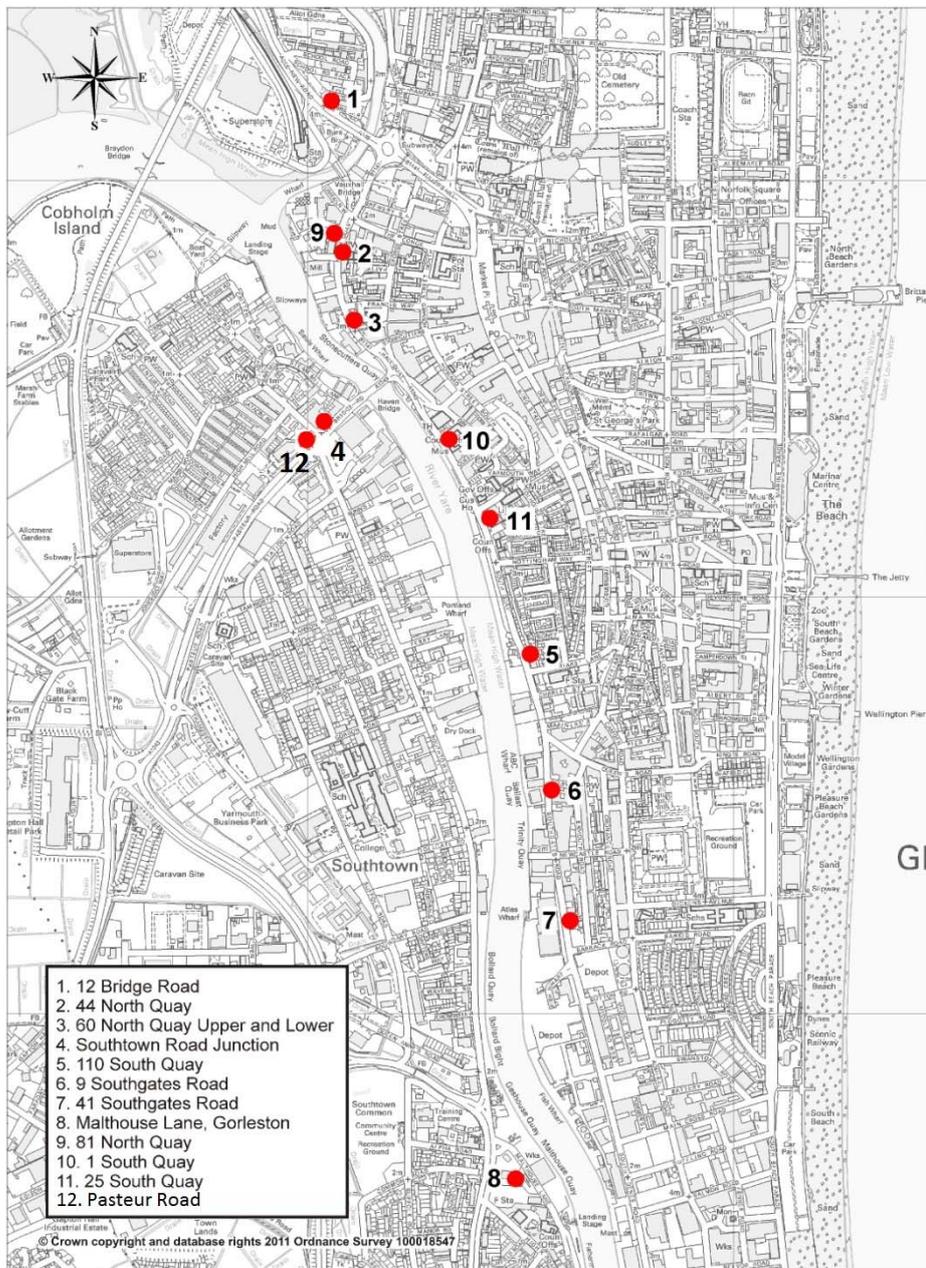


Figure D.2 Map(s) of Non-Automatic Monitoring Sites

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

| Pollutant | Air Quality Objective ⁴ | |
|--|--|----------------|
| | Concentration | Measured as |
| Nitrogen Dioxide (NO ₂) | 200 µg/m ³ not to be exceeded more than 18 times a year | 1-hour mean |
| | 40 µg/m ³ | Annual mean |
| Particulate Matter (PM ₁₀) | 50 µg/m ³ , not to be exceeded more than 35 times a year | 24-hour mean |
| | 40 µg/m ³ | Annual mean |
| Sulphur Dioxide (SO ₂) | 350 µg/m ³ , not to be exceeded more than 24 times a year | 1-hour mean |
| | 125 µg/m ³ , not to be exceeded more than 3 times a year | 24-hour mean |
| | 266 µg/m ³ , not to be exceeded more than 35 times a year | 15-minute mean |

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

| Abbreviation | Description |
|-------------------|---|
| AIR | Independent analytical proficiency-testing scheme by LGC Ltd. and the Health and Safety Laboratory (HSL) |
| AQAP | Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values' |
| AQMA | Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives |
| ASR | Air quality Annual Status Report |
| Defra | Department for Environment, Food and Rural Affairs |
| DMRB | Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England |
| EU | European Union |
| FDMS | Filter Dynamics Measurement System |
| GYTRC | Great Yarmouth Third River Crossing |
| LAQM | Local Air Quality Management |
| NEPG | Norfolk Environmental Protection Group |
| NO ₂ | Nitrogen Dioxide |
| NO _x | Nitrogen Oxides |
| PM ₁₀ | Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less |
| PM _{2.5} | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less |
| QA/QC | Quality Assurance and Quality Control |
| SO ₂ | Sulphur Dioxide |
| TEA | Triethanolamine: the reagent used in diffusion tubes as an absorbent for ambient NO ₂ |

References

Casella Monitor Data Services (2012). Air Quality Monitoring Station Report for Great Yarmouth Borough Council December 2011.

DEFRA (2009). Local Air Quality Management Technical Guidance (TG 16). London, DEFRA.

DEFRA (2009) Local Air Quality Management (PG16). London, DEFRA.

Great Yarmouth Borough Council (2014). 2014 Air Quality Progress Report for Great Yarmouth Borough Council.

Great Yarmouth Borough Council (2012). 2012 Updating and Screening Assessment for Great Yarmouth Borough Council.

Great Yarmouth Borough Council (2015). 2015 Updating and Screening Assessment for Great Yarmouth Borough Council.

Great Yarmouth Borough Council (2016). 2016 Air Quality Annual Status Report (ASR).

Mott McDonald (2012). Air Quality Data Review.

Mott McDonald (2010). Air Quality Detailed Assessment 2010.

Internet Sources

Defra (2017) National Diffusion Tube Bias Adjustment Factor Spreadsheet.
<https://laqm.defra.gov.uk/assets/databasediffusiontubebiasfactorsv0317v2.xls>
Date accessed 10/4/2017

Defra (2017) Summary of Laboratory Performance in AIR NO₂ Proficiency Testing Scheme (April 2015 – February 2017).

<https://laqm.defra.gov.uk/assets/airptrounds7to18apr2015feb2017.pdf>

Date accessed 10/4/2017.

Subject: Government Litter Strategy 2017

Report to: EMT 25th May 2017
Environment Committee 12th June 2017

Report by: Paul Shucksmith, Senior Environmental Ranger
Jane Beck, Director of Customer Services

SUBJECT MATTER/RECOMMENDATIONS

This report provides background information in respect of the new Government Litter Strategy which contains a number of proposals to curb litter through enforcement, education and good infrastructure.

Members are recommended to note the contents of the report

1. INTRODUCTION

This report provides a summary for Members about the Government's Litter Strategy for England which was published in April 2017. The strategy acknowledges the impact of litter and the implications it causes in taking up cleansing resource. The strategy highlights the Government's current work and future proposals that it will seek to implement before 2020 to create cultural change to reduce littering.

2. MAIN PROVISIONS

Measuring litter

The strategy acknowledges measuring the extent of littering in a given area is not always straightforward. The nature, size, quantity and type of litter can all affect how much impact there is on visual amenity but other factors including location and how often the area is cleansed must also be taken in account to measure the extent of a problem. A working group has been set up to develop a baseline and methodology to assess the extent of littering in England and to consider the feasibility of litter reduction targets for specific littered items.

The strategy also wishes to make recycling more openly available to small businesses and to ensure that residents are able to easily dispose of D.I.Y waste. The Government proposes to work with WRAP and local authorities to explore managing Household Waste and Recycling Centres to review charging practises and to facilitate access for waste streams, other than household waste, at a proportionate cost.

Education and Awareness

The Strategy highlights the current work and proposals seeking to changing behaviour through education and awareness. These include:-

- A working group has already been set up to deliver a national anti-littering campaign.
- Work will be done with teachers to review teaching resource on the subject and make sure they are easily accessible.
- Work will be done with youth associations to raise awareness of the environmental and economic costs of littering
- To continue to support and endorse national clean up days
- A working group has been set up to look at the barriers to engaging and involving citizens in tackling litter
- To support and encourage Councils and landowners to aspire to high levels of environmental quality and have them recognised through national award schemes.
- To encourage all business's to work in partnership with the local community to address littering near their premises
- To establish a working group to consider voluntary and/or regulatory controls to improve recycling and reuse of packaging
- To promote the role packaging artwork and the design of the packaging itself could have in reducing littering and littering behaviour

Improving Enforcement

The strategy acknowledges that to back up its education and awareness measure's it will also need appropriate and proportionate enforcement. These proposals include:-

- A consultation will be carried out on whether littering fines should be increased
- To make regulations to allow issuing of a Penalty Charge Notice against the keeper of a vehicle from which litter has been thrown
- Promote the use of new powers such as flytipping penalty notices and Community Protection Notices to improve local environmental quality and provide guidance to enforcement authorities on the use of its powers.
- To encourage local councils to communicate their enforcement activities more effectively
- To explore opportunities with Probation Services to promote activities involving removing litter and flytipped waste

Better Cleaning and Infrastructure

The strategy identifies how important it is for Councils to maintain cleanliness in order to attract business and potential investment. It states local authorities will need

to improve their cleansing and work more effectively with neighbouring authorities and Highways England to keep highways and roads into town clean. Proposals include:-

- A working group has been established to explore and understand the practical barriers in keeping roadside clear of litter and promote best practise in roadside litter prevention.
- To commission and publish an independent assessment of road cleanliness and publish cleanliness reviews by authority with a view to setting a deadline for improvement by underperforming authorities. A proposal to reallocate responsibility for cleansing activities from any authority that is not fulfilling its statutory duties on the road network and consider how to recover the cost of these activities from the local authority.
- To update The Code of Practise on Litter and Refuse, to clarify its standards and review the mechanism by which councils and land managers can be held accountable to the standards set out.
- A working group has been set up to explore and identify best practise in 'binrastructure' with a view to providing guidance on design, number and location of public litter bins.

3. **IMPLICATIONS FOR THE COUNCIL**

The strategy does not have any immediate implications for the Borough Council but should proposals go ahead the strategy may strengthen enforcement powers and educational work regarding littering. A review of the Code of Practise on Litter and Refuse and a focus on highway cleansing may mean more accountability with regard to litter and its removal with the potential sanction of having the cleansing duty, and budget, on main roads **removed from the Council**.

4. **RECOMMENDATION**

Members are recommended to note the report for information.

5. **BACKGROUND PAPERS**

Litter Strategy for England – April 2017

Areas of consideration:

| Area for consideration | Comment |
|--|----------------|
| Monitoring Officer Consultation: | No |
| Section 151 Officer Consultation: | No |
| Existing Council Policies: | No |
| Financial Implications: | No |
| Legal Implications (including human rights): | No |
| Risk Implications: | No |

| | |
|----------------------------------|----|
| Equality Issues/EQIA assessment: | No |
| Crime & Disorder: | No |
| Every Child Matters: | No |