

Friday, 5 June 2020

Dear Sir/Madam

A meeting of the Environment and Climate Change Committee will be held on Monday, 15 June 2020 (via Microsoft Teams) commencing at 7.00 pm.

Should you require advice on declaring an interest in any item on the agenda, please contact Legal Services at your earliest convenience.

Yours faithfully

MEHAL

Chief Executive

To Councillors: L A Ball BEM R H Darby S Easom L Fletcher T Hallam R I Jackson P Lally R D MacRae G Marshall P Roberts-Thomson H E Skinner (Chair) D K Watts (Vice-Chair) R D Willimott

<u>A G E N D A</u>

1. <u>APOLOGIES</u>

To receive any apologies and notification of substitutes.

2. DECLARATIONS OF INTEREST

Members are requested to declare the existence and nature of any disclosable pecuniary interest and/or other interest in any item on the agenda.

3. <u>MINUTES</u>

(Pages 1 - 2)

To approve the minutes of the previous meeting held on 3 February 2020.

	To update Members on the Pride in Parks initiative.	
5.	<u>CLEAN AND GREEN</u> To update Members on the progress of the 'Clean and Green' initiative.	(Pages 7 - 14)
6.	PERFORMANCE MANAGEMENT - REVIEW OF BUSINESS PLAN PROGRESS - ENVIRONMENT To report progress against outcome targets identified in the Environment Business Plan, linked to Corporate Plan priorities and objectives, and to provide an update as to the latest key performance indicators therein.	(Pages 15 - 22)
7.	CAPACITY FOR BURIALS AT CEMETERIES AND CHURCHYARDS To update Members as to the capacity for new burials at the various cemeteries and churchyards within the borough and consider the options available.	(Pages 23 - 28)
8.	AIR QUALITY STATUS REPORT To advise Members of, and to seek approval for, the latest Air Quality Status Report which is to be submitted to the Department of Food Environment and Rural Affairs (DEFRA).	(Pages 29 - 122)
9.	HOME COMPOSTING To update Members on the subject of home composting.	(Pages 123 - 128)
10.	WORK PROGRAMME To consider items for inclusion in the Work Programme for future meetings.	(Pages 129 - 130)

4. <u>PRIDE IN PARKS - PLAY AREA AND PARKS/OPEN</u> (Pages 3 - 6) <u>SPACE IMPROVEMENTS</u>

11. EXCLUSION OF PUBLIC AND PRESS

The Committee is asked to RESOLVE that, under Section 100A of the Local Government Act, 1972, the public and press be excluded from the meeting for the following item of business on the grounds that it involves the likely disclosure of exempt information as defined in paragraph 3 of Schedule 12A of the Act.

12. <u>CAPACITY FOR BURIALS AT CEMETERIES AND</u> (Pages 131 - 132) <u>CHURCHYARDS - APPENDIX 3</u>

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Agenda Item 3

ENVIRONMENT AND CLIMATE CHANGE COMMITTEE

MONDAY, 3 FEBRUARY 2020

Present: Councillor H E Skinner, Chair

Councillors: S J Carr (substitute) T A Cullen (substitute) S Easom L Fletcher T Hallam R I Jackson P Lally R D MacRae G Marshall P Roberts-Thomson P D Simpson (substitute) R D Willimott

Apologies for absence were received from Councillors L A Ball BEM, R H Darby and D K Watts.

20 DECLARATIONS OF INTEREST

There were no declarations of interest.

21 <u>MINUTES</u>

The minutes were confirmed and signed as a correct record.

22 <u>BUSINESS PLANS AND FINANCIAL ESTIMATES 2019/20 - 2021/22 -</u> <u>ENVIRONMENT</u>

The Committee consider the proposals for business plans, detailed revenue budget estimates for 2020/21, capital programme for 2020/21 to 2022/23 and proposed fees and charges for 2020/21 in respect of the Council's priority areas.

- 1. **RESOLVED** that the Environment Business Plan be approved.
- 2. RECOMMENDED that the Finance and Resources Committee recommends to Council that the following be approved:
 - a) The detailed revenue budget estimates for 2020/21 (base) including any revenue development submissions.
 - b) The capital programme for 2020/21 to 2022/23.
 - c) The fees and charges for 2020/21.

23 PRIDE IN PARKS UPDATE

The Committee received an update on the Pride in Parks initiative. It was noted funding had been allocated to undertake improvements to the Borough owned play areas that had been identified as high priority sites in the Play Strategy and to the Town and Parish Councils that maintain their own parks and outdoor recreational facilities to enable improvement and renovation works to be undertaken at these sites.

24 CLEAN AND GREEN UPDATE

The Committee received an update on the Clean and Green Initiative. It was noted that the bulky waste collection was popular with residents. The budget allocation for 2019/20 for Waste Days/Free Bulky Waste collections was £15,500. The expenditure incurred on the provision of these services throughout the year would be met within the existing budget.

25 BROXTOWE PARKS STANDARD

The Committee received an update on the outcome of the latest consultation and site assessments relating to the Broxtowe Parks Standard. It was noted that two sites were failing the standard and works had been scheduled to improve these sites.

26 <u>AIR QUALITY STATUS REPORT 2019</u>

The Committee were informed of the latest Air Quality Status Report. DEFRA requires all local authorities in England to produce an Annual Status Report in respect of air quality. It was noted that further monitoring of troubled areas was required. However, there had been an overall reduction in air pollution.

27 WORK PROGRAMME

The Committee considered the Work Programme.

RESOLVED that the work programme be approved.

Report of the Strategic Director

PRIDE IN PARKS – PLAY AREA AND PARKS/OPEN SPACE IMPROVEMENTS

1. <u>Purpose of report</u>

To update Members on the Pride in Parks initiative.

2. <u>Background</u>

Since April 2018 funding has been allocated to undertake improvements to the Borough owned play areas that were identified as high priority sites in the Play Strategy and to the Town and Parish Council's that maintain their own parks and outdoor recreational facilities to enable improvement and renovation works to be undertaken at these sites.

This report provides an update on progress made on the Pride in Parks Initiative and the proposals for 2020/21.

3. Financial Implications

The 2020/21 Capital Programme includes an allocation of £199,000 to fund 3 schemes. Further details are provided in the appendix.

Recommendation

The Committee is asked to NOTE the progress on the schemes identified in the 2019/20 and 2020/21 capital programmes as part of the Pride in Parks Initiative.

Background papers Nil

APPENDIX

1. Broxtowe Borough Council Schemes - 2019/20 Schemes

There were 4 remaining Borough Council sites identified as high priority in the Borough's Play Strategy for which there was budget provision in the 2019/20 Capital Programme.

(i) King George V Park, Bramcote

With a successful bid to FCC Environment for £50,000, together with £24,850 from an insurance settlement and £49,000 from the Council's own capital resources this scheme is now complete. An official opening event took place in January 2020. Reinstatement works to the grass areas around the site have now been undertaken.

(ii) <u>Sherman Drive Open Space, Chilwell</u>

The 2019/20 capital programme included £30,000 from the Council's capital resources towards replacement equipment and surfacing.

All works were completed in late summer 2019.

(iii) Hall om Wong Open Space, Kimberley

The 2019/20 Capital Programme included £20,000 from the Council's capital resources for work at this site. A bid was submitted to FCC Environment for £54,000 with a proposal to use the £20,000 funding together with a further allocation of £11,000 in the 2019/20 Capital Programme for access improvements at this site as the Council's contribution. In March 2020 it was confirmed that the bid for £54,000 had been successful and a scheme to the value of £85,000 is now currently in progress.

(iv) Hickings Lane Recreation Ground, Stapleford

The 2019/20 Capital Programme included a £165,500 scheme to refurbish the play area and install a new multi use games area. The cost of the scheme was met by contributions of £93,500 from FCC Environment, £18,500 from Section 106 receipts, £2,500 from United Living, £1,000 from Stapleford Town Football Club and £50,000 from the Council's own capital resources. Work on this site was completed in summer 2019.

2. Broxtowe Borough Council Schemes 2020/21

All the High Priority Schemes within the Borough Play Strategy at Council sites have now been funded and work undertaken to address the issues. The next phase of works concentrates on the schemes identified as Medium Priority where works need to be undertaken in the period 2020-23. In the 2020-21 Capital Programme there is £199,000 allocated for 3 schemes.

i) Dovecote Lane Recreation Ground, Beeston

A scheme to fully refurbish this very popular play area with new modern climbing units and a full range of equipment for younger children and new rubber surfacing is currently being drawn up. It is proposed to submit a bid to FCC Community Foundation for £90,000 with an allocation of £45,000 from the Council's Capital Programme and £5,000 from United Living, giving a total scheme value of £140,000. The submission date for the bid is 2 September 2020 with a decision in December 2020.

ii) <u>Swiney Way Open Space, Chilwell</u>

A scheme to replace the very outdated equipment at this small area that is specifically for younger children and also provide a full rubber surface. The scheme at a cost of $\pounds42,000$ will be funded from the Council's Capital Programme. Work is expected to take place in summer 2020.

iii) Play Area Improvements

A number of play areas, whilst not requiring a full refurbishment, do require extensive remedial works to make them fully compliant with relevant safety legislation. The Play Strategy identified that priorities may change during the period of the strategy due to issues such as increased usage of sites, vandalism and equipment failure. This budget recognises these changes and allows for the site specific issues to be addressed without undertaking a full refurbishment of the particular site.

The works costing £42,000 will be funded from the Council's Capital Programme.

COVID-19 Implications

Following Government guidance all play areas were closed in mid March with advisory notices erected. In general, this advice has been well respected. The play areas will be reopened in line with national guidance and a detailed inspection and cleanse undertaken in advance of opening. In terms of construction work on new sites there was an initial period when no works were carried out due to issues with suppliers and overall uncertainty. Contractors have now provided their necessary COVID-19 risk assessments and works have now commenced at Hall om Wong, Kimberley on the play area refurbishment.

3. Town/Parish Sites

There are 6 Town/Parish Councils that manage their own parks/recreation grounds as follows:

Awsworth Parish Council

- The Lane Recreation Ground
- Shilo Recreation Ground

Brinsley Parish Council

Brinsley Recreation Ground

Greasley Parish Council

- Beauvale Park
- Greenhills Road Recreation Ground
 <u>Kimberley Town Council</u>
 - Knowle Park
 - The Stag Recreation Ground

Nuthall Parish Council

- Basil Russell Playing Fields
- Temple Centre Recreation Ground

Trowell Parish Council

• Trowell Parish Hall

As part of the Pride in Parks project all 6 Town/Parish Councils were asked to consider their priorities for work over financial years 2018/19 and 2019/20.

Over the 2 year period the Town/Parish Councils chose to do a wide range of projects including play area improvements, provision of outdoor fitness equipment, upgrading and extensions of sports pavilions and habitat improvement works. All the works that were identified as high or medium priorities in the Play Strategy were completed as part of the initiative.

With the exception of a small underspend which Nuthall Parish Council requested to be carried forward into the 2020/21 financial year to allow it to be used as part of a match funding bid, all the works at the Town and Parish Council sites are now complete and invoices for the Borough Council contribution submitted and paid.

Report of the Strategic Director

CLEAN AND GREEN

1. <u>Purpose of report</u>

To update Members on the progress of the 'Clean and Green' initiative.

2. <u>Background</u>

On the 19 November 2018 Members approved the implementation of the Clean and Green initiative. The on-going activities as part of the project support the Council's vision to 'Protect the environment for the future'.

Information in the appendices provides an update with regards to the activities undertaken as part of the 'Clean and Green' initiative since the last Committee in February 2020.

3. Financial implications

Any financial implications of the Clean and Green initiative have been approved and are contained within budgets.

Recommendation

The Committee is asked to NOTE the Clean & Green activities which have taken place.

Background papers Nil

APPENDIX

1. Litter picking of the A610

During week commencing 23 March 2020 an additional litter pick took place between the IKEA roundabout and the M1 roundabout. Both sides of the road received a full cleanse and sweep and the work was undertaken in partnership with Via East Midlands utilising their traffic management.

Due to traffic restrictions the short section of the A610 between the Nuthall roundabout and M1 Island did not receive a litter pick as part of Clean and Green initiative.

This small section will be litter picked when the grass on the A610 is next cut. Due to restrictions relating to the coronavirus at the time of writing this report a date for the grass on the A610 to be cut has not yet been set.

2. Weed Killing

The first Borough wide weed killing application started during the week commencing 27 April 2020 and was completed by the end of May 2019.

The increased number of parked cars on the street, as a result of people being at home due to the Government coronavirus lockdown, did present an issue with regards the spraying application in some areas.

A further application within the Town Centres is scheduled for mid-July with the next borough wide application scheduled for September.

Should it be necessary for a further interim application on hot spots areas around the borough then this will be undertaken. This will be monitored and acted upon based on any complaints or observations.

3. Waste Days

The three free bulky collection weeks took place during week commencing 16 December 2019, 27 January 2020 and the 3 February 2020.

The free weeks were promoted through social media, the website and the local press. Local Members also promoted the scheme.

The information in Tables 1 to 5 show the analysis of the results of the free kerbside collections.

	w/c 16th D 201	ecember 9	w/c 27th J 202	lanuary 0	w/c 3rd Fe 202	ebruary 0
Waste Type	Number of households booked in for a collection throughout the week	Amount collected all week (tonnes)	Number of households booked in for a collection throughout the week	Amount collected all week (tonnes)	Number of households booked in for a collection throughout the week	Amount collected all week (tonnes)
Residual	141	8.66	194	11.74	176	10.66
Electrical	60	See Table 2	66	See Table 2	64	See Table 2

Table 1: Properties serviced and amounts collected

Note: Some households booked in items for both the residual and electrical

Following the learning from the first free week in that some residents did not have their items out for collection when the crews visited the collection capacity was increased for the second and third weeks.

Table 2: Electrical items collected

	w/c 16th December 2019	w/c 27th January 2020	w/c 3rd February 2020
Item	Number of items	Number of items	Number of items
Fridge/Freezer	46	46	42
Cooker (Electrical)	0	6	3
Tumble Dryer	2	0	5
Washing Machine	4	7	6
TV	13	6	10
Other Electrical	12	22	21
Total	77	87	87

It is evident from the information above that fridge/freezers are the most popular items to be requested for collection. A probable reason for this is the difficulty in transporting these items to the Household Waste and Recycling Centres.

Table 3: Properties serviced by area throughout the week on residual collection

	w/c 16th December 2019	w/c 27th January 2020	w/c 3rd February 2020
Area	Number of households serviced residual	Number of households serviced residual	Number of households serviced residual
Attenborough		5	4
Awsworth	2	2	4
Beeston	32	31	21
Bramcote	6	10	11
Brinsley	2	3	1
Chilwell	26	36	21
Cossall	1		1
Eastwood	6	15	17
Giltbrook			2
Greasley	1		
Kimberley	8	5	10
Moorgreen			1
Newthorpe	4	6	10
Nuthall	4	4	8
Stapleford	42	60	39
Toton	7	8	16
Trowell		9	5
Watnall			5
Total	141	194	176

Stapleford is consistently the highest area where items are requested to be collected from. This is followed by Beeston and then Chilwell.

Table 4: Properties serviced by area throughout the week on electrical collection

	w/c 16th	w/c 27th	w/c 3rd
	December	January	February
	2019	2020	2020
Area	Number of	Number of	Number of
	households	households	households
	serviced	serviced	serviced
	Electrical	Electrical	Electrical
Attenborough	1		4

	w/c 16th December 2019	w/c 27th January 2020	w/c 3rd February 2020
Area	Number of households serviced Electrical	Number of households serviced Electrical	Number of households serviced Electrical
Awsworth	1		2
Beeston	9	8	9
Bramcote	6	4	8
Brinsley			2
Chilwell	10	4	10
Cossall	2		
Eastwood	4	7	9
Greasley			
Kimberley	2	4	3
Newthorpe		7	5
Nuthall	1	1	3
Stapleford	22	21	9
Toton	2	9	2
Trowell	1	1	
Watnall			2
Total	60	66	64

Once again Stapleford is consistently the highest area where items are requested to be collected from. This is followed by Beeston and then Chilwell.

Table 5: Number of items booked in by resident

	w/c 16th December 2019	w/c 27th January 2020	w/c 3rd February 2020
Number of Items booked in by resident	Number of residents	Number of residents	Number of residents
1	82	99	117
2	44	82	54
3	59	46	24

Despite residents being able to request 3 free items the majority only requested one item to be collected. This mirrors the normal bulky waste collection where most residents request the collection of a single item.

In addition to the free kerbside collections a series of free bulky waste days were organised for March 2020. Unfortunately, all but one day were cancelled due to the measures implemented to restrict the spread of the coronavirus.

The results of the Waste Day held on the 14 March 2020 is shown in Table 6 below.

Date	Site	Number of Visits	Number of Fridge /Freeze r	Number of other electrica l items	Tonnag e collecte d
	Greenwood Centre, Toton	10	2	5	0.8
	Trowell Parish Hall	7	2	3	0.8
14th March 2020	White Lion Public House, Bramcote	19	3	4	1.52
2020	Beeston Fields Recreation Ground	8	4	5	0.24*
	Devonshire Avenue Car Park, Beeston	49		8	1.52*

Table 6: Results of Waste day held on 14 March 2020

*Estimate

The analysis shows that apart from the Beeston event there was a particularly low turnout. It is likely that this is attributable in the main to the coronavirus as although the lockdown was not in place on the 14 March 2020, there was still advice on social distancing and essential journeys.

The Waste Days which were postponed due to the coronavirus restrictions are shown in Table 7

Table 7: Waste days which were postponed

21 st March 2020	28 th March 2020
Brinsley Parish Hall	Lowes Estate Beeston (Hutton Close - Potters Court)
Awsworth Parish Hall	Stapleford Victoria Street Car Park, Stapleford
Mansfield Recreation Car Park, Eastwood	Station Road Car Park, Kimberley

21 st March 2020	28 th March 2020
Oldmoor Lodge Nuthall Car Park, Eastwood	Queens Head Pub Car Park, Watnall
Greasley Sports Centre Car Park, Greasley	

The provision of Waste Day events has been temporarily postponed in accordance with Government advice on social distancing and essential journeys.

The Council has been following guidance from the Government and the Waste Industry Safety and Health (WISH) Forum with regards the safe delivery of its waste services.

It is currently unclear exactly what measures will need to be in place for the safe delivery of any future waste day event. Once the long term implications are known a report will be brought back to Members for consideration of the long term plan with regards to the delivery of Waste Days and/or the free kerbside collections.

4. <u>Community Clean Teams Initiative</u>

Since the last report only one Community Clean Team litter picking event has taken place at Attenborough Nature Reserve. This happened at the beginning of March 2020 and involved members of the Street Cleansing team together with representatives from Attenborough Nature Reserve.

A further 9 events where scheduled for March 2020 but unfortunately these had to be cancelled due to the social distancing and the lockdown measures. No further events are planned and it is not currently known when such community events can recommence.

5. Delivery of Clean & Green within budget

The information in Table 8 below sets out the costs of delivering the Clean and Green for 2019/20.

Table 8: Clean and Green Budget 2019/20

Budget Heading	Budget (£)	Actual Spent (£)	Narrative
Combined budget for Community Clean Teams and Litter Picking the A610 (02 207 3980)	9450	7055	The original budget allocation is split between £4000 for Community Clean Teams Events and £5450 on the litter picking. The underspend is attributable to the reduced spend on litter picking the A610 which was achieved under budget.
Waste Days (02 140 3980)	28540	9366	The original budget was £15,500 but there was a carried forward of £13,040 which brought the total to £28,540. Due to the reduced delivery of Waste Days only £9366 was spent. A previous Clean & Green report made reference to the fact that the carry forward would be used to offset any reduction in the income from the bulky waste service as a result of the introduction of the trial free kerbside collection. The bulky waste income budget for 2019/20 was set at £60,000. The actual income received was £60,537. No impact on income was therefore realised. However, this may be due to the free service occurring nearer to the end of the financial year, should the free service continue a negative impact on income may occur in future years.

Report of the Strategic Director

PERFORMANCE MANAGEMENT – REVIEW OF BUSINESS PLAN PROGRESS – ENVIRONMENT

1. Purpose of Report

To report progress against outcome targets identified in the Environment Business Plan, linked to Corporate Plan priorities and objectives, and to provide an update as to the latest key performance indicators therein.

2. <u>Background</u>

The Corporate Plan 2016-2020 was approved by Cabinet on 9 February 2016. Business Plans linked to the five corporate priority areas of Housing, Business Growth, Environment, Health and Community Safety are subsequently approved by the respective Committees each year.

3. <u>Performance Management</u>

As part of the Council's performance management framework, each Committee receives regular reports during the year which review progress against their respective Business Plans. This will include a detailed annual report where performance management is considered following the year-end.

This report is intended to provide this Committee with an overview of progress towards Corporate Plan priorities from the perspective of the Environment Business Plan. It provides a summary of the progress made to date on key tasks and priorities for improvement in 2019/20 and the latest data relating to Key Performance Indicators (KPI). This summary is detailed in appendix 1.

Recommendation

The Committee is asked to NOTE the progress made in achieving the Business Plan for Environment and the current Key Performance Indicators for 2019/20.

Background papers Nil

APPENDIX 1

PERFORMANCE MANAGEMENT

1. <u>Background - Corporate Plan</u>

The Corporate Plan for 2016-2020 was approved by Cabinet on 9 February 2016. This plan sets out the Council's priorities to achieve its vision to make "Broxtowe a great place where people enjoy living, working and spending leisure time." Over the period, the Council will focus on the priorities of Housing, Business Growth, Community Safety, Health and Environment.

The Corporate Plan prioritises local community needs and resources are directed toward the things they think are most important. These needs are aligned with other local, regional and national plans to ensure the ambitions set out in our Corporate Plan are realistic and achievable.

2. <u>Business Plans</u>

Business Plans linked to the five corporate priority areas, including Environment, were approved by the Full Council on 6 March 2019, following recommendations from the respective Committees in January/February 2019.

The Council's priority for Environment is that 'The environment in Broxtowe will be protected and enhanced for future generations'. Its objectives are to:

- Reduce litter and fly tipping to make Broxtowe cleaner (En1)
- Maintain and improve the green infrastructure of Broxtowe (En2)
- Increase recycling, composting, renewables and energy efficiency projects as resources allow and reduce residual waste (En3)

The Business Plans detail the projects and activities undertaken in support of the Corporate Plan for each priority area. These cover a three-year period and are revised and updated annually. Detailed monitoring of progress against key tasks and outcome measures in the Business Plans is undertaken regularly by the relevant Committee. This will include a detailed annual report where performance management and financial outturns are considered together following the year-end as part of the Council's commitment to closely align financial and performance management.

3. <u>Performance Management</u>

As part of the Council's performance management framework, this Committee receives regular reports of progress against the Environment Business Plan. This report provides a summary of the progress made to date on key tasks and priorities for improvement in 2019/20 (as extracted from the Pentana Risk performance management system). It also provides the latest data relating to Key Performance Indicators (KPI).

The Council monitors its performance using the Pentana Risk performance management system. Members have been provided with access to the system via a generic user name and password, enabling them to interrogate the system on a 'view only' basis. Members will be aware of the red, amber and green traffic light symbols that are utilised to provide an indication of performance at a particular point in time.

The key to the symbols used in the Pentana Risk performance reports is as follows:

Action Status Key

lcon	Status	Description
I	Completed	The action/task has been completed
	In Progress	The action/task is in progress and is currently expected to meet the due date
	Warning	The action/task is approaching its due date (and/or one or more milestones is approaching or has passed its due date)
	Overdue	The action/task has passed its due date
\mathbf{X}	Cancelled	This action/task has been cancelled or postponed

Performance Indicator Key

lcon	Performance Indicator Status
	Alert
	Warning
0	Satisfactory
?	Unknown
	Data Only

Environment Key	Tasks and Priorities fo	r Improvement 2019/20

Status / Icon	Action Code	Action Title	Action Description	Progress	Due Date	Comments
Completed	ENV1620 _03	Implement the actions identified within the Waste Strategy	Implement the actions identified within the Waste Strategy	100%	Mar-2020	All 27 actions identified in the Waste Strategy Action Plan 24 have been addressed. Some activities are ongoing activities.
Completed	ENV1620 _04	Franchises and licensing within Parks and Open Spaces	Franchises and licensing within Parks and Open Spaces	100%	Mar-2020	Sponsorship of floral bedding has been reviewed. Sponsorship opportunities for facilities within Parks and Green Spaces continue to be explored.
Completed	ENV1720 _01	Strategic Tree Planting	Continue to apply a strategic approach to tree management and planting. Work with partners, land owners and other agencies.	100%	Dec-2019	 A new Tree Planting scheme was adopted in 2018/19 and the programme launched as part of the Clean and Green Campaign. The autumn/winter of 2019/20 saw 2,102 new trees planted. Schemes included - Free Fruit Trees – 500 apple and pear trees were given away to residents of the Borough at 2 events in January 2020. Community Tree Events – 700 trees were planted at Hetley Pearson Recreation Ground Memorial Trees – 21 trees were planted at Brinsley Recreation Ground. Community Orchards – two new orchards were created.

Status / Icon	Action Code	Action Title	Action Description	Progress	Due Date	Comments
In Progress	ENV1821 _03	Improve Play Areas and Parks & Open Spaces	Ensure sites are Health & Safety and DDA Compliant	95%	Mar-2020	All 'year 1' schemes as part of the £500k initiative have been completed. Most 'year 2' schemes have been completed with the Hall om Wong Scheme carried forward due to a late award of funding to enhance the scheme.
Completed	ENV1922 _01	Implementation of the Clean and Green Initiative	Implement a range of initiatives aimed at making Broxtowe a Cleaner and Greener place for residents and visitors to the Borough.	100%	Mar-2020	A number of activities were undertaken as part of the 2019/20 Clean and Green initiative. Unfortunately, some events planned for March 2020 were cancelled due to the coronavirus.
Completed	ENV1922 _02	Management of Water Safety measures for Council owned water courses	Assess all the Council owned water courses throughout the Borough and install and maintain appropriate safety measures and signage where applicable.	100%	Mar-2020	All sites have been assessed appropriate signage installed and water safety devices fitted at strategic locations.
Completed	ENV1922 _03	Evaluate/implement an integrated system for managing and monitoring work schedules for Environmental Services	To operate a system that will manage the work schedules of the frontline services.	100%	Mar-2020	The Bartec system has been upgraded and is used to managed the work schedules of refuse and some back office staff.

Environment Key Performance Indicators 2019/20

Status / Icon	Code & Short Name	Data Collection	Outturn 2017/18	Outturn 2018/19	Achieved 2019/20	Target 2019/20	Latest Note
Red O	BV82a(ii) Tonnes of Household Waste Recycled	Quarterly	8,312	8,018	8,006	10,000	Target missed. However, the reduction trend has slowed significantly compared to the previous two years.
Green	BV82b(ii) Tonnes of household waste composted	Quarterly	6,782	7,461	7,778	7,000	Target exceeded.
Green	BV84a Reduce household waste collected per head, in kilos	Quarterly	345	357	361	386	The target is achieved. There has been a very small increase in the amount of waste produced per head from the previous year.
Red O	NI 191 Reduce Residual household waste per household (Kgs)	Quarterly	477	493	496	512	There has been an increase in the amount of waste produced per household from the previous year but only a very small increase.
Green	NI 195b Improved street and environmental cleanliness (levels of litter, detritus, graffiti and fly posting)	Quarterly	95%	96%	96%	96%	A high level of cleanliness has been maintained as evidenced by the surveys undertaken.
Data Only	WMData_03b Number of garden waste subscriptions	Quarterly	19,211	19,664	20,094	19,600	The number of subscriptions has exceeded expectations.
Green	WMData_03c Income generated by Garden Waste Subscriptions	Quarterly	£623k	£661k	£702k	£680k	The income target has been exceeded.

Status / Icon	Code & Short Name	Data Collection	Outturn 2017/18	Outturn 2018/19	Achieved 2019/20	Target 2019/20	Latest Note
Amber 🛆	WMData_06a Income generated through Trade Waste (0,00s)	Quarterly	£550k	£579k	£585k	£597k	Although the target has not been achieved the waste disposal budget for 2019/20 was £13K under budget which negates any loss of income.
Green	WMData_08 Income generated through Street Scene	Quarterly	£17k	£45k	£64k	£38k	Target exceeded. This income is derived from areas such as Island Sponsorship, Kimberley Precinct cleansing, car park rental at the depot and Grounds Maintenance work for third parties.
Red	WMData_10 Savings through re-use of bins	Quarterl y	£10k	£12k	£5,152	£12k	The target has not been achieved as fewer bins which have been reclaimed where deemed safe and suitable for reuse.

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Report of the Strategic Director

CAPACITY FOR BURIALS AT CEMETERIES AND CHURCHYARDS

1. <u>Purpose of report</u>

To update Members as to the capacity for new burials at the various cemeteries and churchyards within the borough and consider the options available.

2. <u>Background</u>

Broxtowe Borough Council owns and operates 5 cemeteries in the borough:

Beeston, Chilwell, Eastwood, Kimberley, Stapleford

There is one additional cemetery in Nuthall managed by the Parish Council.

There are also 4 churchyards which are still used for burials. These are at:

Brinsley, Greasley, Strelley and Trowell.

Further detail regarding the capacity of the 10 sites for new burials is provided in Appendix 1. The short, medium and long term options available at each site are detailed at Appendix 2 with an assessment of options for Stapleford Cemetery in Appendix 3.

3. <u>Financial Implications</u>

At this stage there are no direct financial implications associated with this report. Indicative costs relating to a possible extension at Stapleford Cemetery are provided in Appendix 3.

Recommendation

The Committee is asked to NOTE the short, medium and long term capacities at the 10 burial grounds in Broxtowe and RESOLVE to:

- 1) Cease using Beeston Cemetery for new burials once all of the remaining grave spaces have been allocated and utilise Chilwell Cemetery as the alternative.
- 2) Enter into initial negotiations with the owners of the land to the east of Stapleford Cemetery with regards to a price for the land and a potential timescale to undertake a possible extension of the burial ground.

Background papers Nil

APPENDIX 1

Cemetery Capacity

Beeston

The cemetery opened in 1884 and is now nearly full for new burials. In recent years various initiatives have been undertaken to extend its capacity. This has been achieved by removing some overgrown trees and vegetation and by doing ground survey work to check for previously unused land which had in the past been considered unsuitable for burials due to the absence of historical burial records. A final area of the cemetery has been made available in the north/west corner by felling some trees that were originally planted as a tree nursery for the Council. This was done in response to the Coronavirus (COVID-19) situation to provide additional burial capacity. This work has created 80 new burial spaces.

<u>Chilwell</u>

The cemetery opened in 1934 and was extended in 2015 to create a dedicated area for Muslim burials. At the present time there is space for 60 new burials in the original cemetery and space for 280 burials in the Muslim cemetery. In addition the cemetery extension in 2015 provided the potential for a further 450 burials. Approximately 20% of this land is available to use immediately with access from the existing roadway providing around 90 burial spaces. When Beeston cemetery closes for new burials, Chilwell cemetery will provide the nearest alternative in the Borough.

Eastwood

The cemetery was opened in 1889 and was extended in the 1970s with an area of land to the south/west of Cemetery Walk. This large extension has a full network of paths and has the capacity for up to 120 new graves.

<u>Kimberley</u>

The cemetery was opened in 1883 and has been extended in various phases since the 1980s with a gradual change from temporary allotment land to new burial ground. The latest phase now provides capacity for an additional 360 graves.

<u>Nuthall</u>

The cemetery was opened in the 1930s when St Patrick's Church in Nuthall was full. It is owned and managed by Nuthall Parish Council with the Borough Council undertaking the grave digging function on their behalf. There are approximately 125 new graves available with the potential to extend onto adjacent land also in the ownership of the Parish Council but currently used as arable farm land. This has the potential for up to 800 additional grave spaces but would require significant capital investment to install the necessary infrastructure.

Stapleford

The cemetery was opened in 1881. Its capacity was doubled with a large extension in the period between the first and second world wars. The site has approximately 90 new graves spaces available with no realistic on site options to increase capacity. Based on current usage rates the cemetery will be full by 2029. It is therefore necessary to consider the options for the future use of this site. These are detailed in Appendix 3.

Churchyard Capacity

Brinsley

The burial ground extension at St James the Great Church was opened in the early 1990s when the churchyard was classified a closed churchyard. The extension is managed by the church and the diocese. There are approximately 45 new grave spaces available with the potential to extend the area into adjacent grazing land owned by the Borough Council.

<u>Greasley</u>

The current burial ground extension was opened in the early 1990s when the original extension area was classified as a closed churchyard. The extension is managed by the church and the diocese. There are approximately 175 new grave spaces available with the potential to extend the area into adjacent arable farm land.

Strelley

The burial ground at All Saints Church was extended in the early 1970's. It is managed by the church and the diocese. There is capacity in excess of 100 spaces for new graves

Trowell

The burial ground at St Helen's Church was extended some time after the First World War. It is managed by the church and the diocese. There is limited space for new graves with the potential to clear some overgrown land to increase short to medium term capacity. There is no real potential to extend the churchyard and when full the likely scenario is that it will become a closed churchyard.

APPENDIX 2

Options Available

Detailed below are the short, medium and long term scenarios on a site by site basis. The projected lifespan of the cemeteries and churchyards does not allow for any significant increase in burial numbers as a result of COVID-19. At the present time burial numbers have shown a slight increase but not the sort of differential seen at the Crematorium.

CEMETERY	NO. OF GRAVE SPACES AVAILABLE	APPROX. NO. OF BURIALS PER YEAR BASED ON LAST 5 YEARS	PROJECTED LIFESPAN OF CEMETERY	SHORT TERM 1-3 YEARS	MEDIUM TERM 3-8 YEARS	LONG TERM 8 YEARS PLUS
Beeston	80	26	3 years	Utilise recently created area for new burials	Formerly close cemetery for new burials and offer Chilwell Cemetery as alternative	Continue to use Chilwell Cemetery
Chilwell	60 in existing cemetery plus 90 in new extension. Total 150	8	19 years. This could potentially be reduced to 10 years when Beeston Cemetery closes for new burials	Continue to use the existing cemetery for new burials	Start to use the new extension working from the existing road network. The number of burials per year is likely to increase with the closure of Beeston Cemetery for new burials	Look to complete the phase 2 extension with additional tarmac surfaced paths
Chilwell – Muslim section	280	To date there have been no Muslim burials in this section	Until a usage pattern for the cemetery is established no lifespan can be forecast	It is expected that the area will start to be used. When this happens it is likely to increase in popularity	No medium term capacity issues are anticipated	No long term capacity issues are anticipated. There is potential to replicate the original extension on adjacent land in Council ownership currently used for horse grazing to the south of this area.
Eastwood	150	8	19 years	No capacity issues	No capacity issues	No capacity issues. Potential for alternative site should Greasley Churchyard be full

CEMETERY	NO. OF GRAVE SPACES AVAILABLE	APPROX. NO. OF BURIALS PER YEAR BASED ON LAST 5 YEARS	PROJECTED LIFESPAN OF CEMETERY	SHORT TERM 1-3 YEARS	MEDIUM TERM 3-8 YEARS	LONG TERM 8 YEARS PLUS
Kimberley	360	8	45 years	No capacity issues	No capacity issues	No capacity issues. Potential for alternative site should Greasley Churchyard be full
Nuthall	125	8	16 years	No capacity issues	No capacity issues	No capacity issues. In the very long term potential to extend into adjacent land
Stapleford	90	10	9 years	Continue to explore options to extend the cemetery into adjacent farm land. See Appendix 3	If the decision is taken to extend the cemetery undertake appropriate infrastructure works	This will be based on medium term decision for the cemetery
CHURCH YARD	NO. OF GRAVE SPACES AVAILABLE	APPROX. NO. OF BURIALS PER YEAR BASED ON LAST 5 YEARS	PROJECTED LIFESPAN OF CEMETERY	SHORT TERM 1-3 YEARS	MEDIUM TERM 3-8 YEARS	LONG TERM 8 YEARS PLUS
Greasley	175	20	9 years	No capacity issues	Start to explore costs/options to potentially extend the cemetery into adjacent arable farm land	This will be based on medium term decision for the cemetery
Brinsley	45	5	9	No capacity issues	No capacity issues	Consider extending into adjacent Broxtowe owned grazing land working with the church
Trowell	10	2	5	Look at the possibility of clearing back vegetation to increase short and medium term capacity	As short term	The likely scenario is that the church will become a closed churchyard with no options to extend into adjacent land
Suelley	Too pius	2	oo year s plus	issues	issues	issues

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Report of the Chief Executive

AIR QUALITY STATUS REPORT 2020

1. <u>Purpose of report</u>

To advise Members of, and to seek approval for, the latest Air Quality Status Report which is to be submitted to the Department of Food Environment and Rural Affairs (DEFRA).

2. <u>Detail</u>

Each year, DEFRA requires all local authorities in England to produce an Annual Status Report (ASR) in respect of air quality. The production of an ASR is intended to aid local transparency, increase accessibility of air quality to the wider public audience and encourage buy-in to delivering air quality improvement measures by those best placed to assist (e.g. directors of public health, transport managers etc). The format of the report is specified by DEFRA.

The latest Annual Status Report to be submitted by Broxtowe Borough Council is attached as an appendix. Some of the positive aspects contained in the report include the following:

- The 2019 nitrogen dioxide results show that the air quality levels are below the objective of 40µg/m³ for all of the monitoring locations throughout the Borough.
- Broxtowe Part 2 of the Local Plan (2018-2028), was adopted in 2019, which includes Policy 20 on Air Quality and Policy 26 that requires a Travel Plan to be submitted with any planning application for 10 or more dwellings or 1,000 square metres or more floor space.
- Broxtowe Borough Council's Cycle to Work Scheme to assist and give tax relief on bike purchases for employees of the council. Nine employees used this scheme in 2019.
- Broxtowe Borough Council purchased two new Euro 6 vehicles in 2019 / 20.
- Broxtowe Borough Council procured two electric vans in 2019 /20.

Recommendation

Committee is asked to APPROVE the 2020 Air Quality Status Report for submission to DEFRA.

Background papers Nil This page is intentionally left blank

Broxtowe Borough Council



DRAFT

2020 Air Quality Annual Status Report (ASR) for Broxtowe Borough Council

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

June 2020

Local Authority Officer	Kate Ratcliffe
Department	Environmental Health
Address	Council Offices Foster Avenue Beeston Nottingham NG9 1AB
Telephone	0115 9177777
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Report Reference number	BBC/AQ/ASR/2020
Date	June 2020
Executive Summary: Air Quality in Our Area

What is Air Pollution and where does it come from?

Air pollution is generally defined as any type of particulate (dust) or gaseous substance (e.g. Oxides of Nitrogen) that is emitted into the atmosphere due to the combustion of fuels such as coal, oil, gas, petrol, diesel and the burning of wood or natural gas from domestic central heating boilers or power stations. When these fuels are combusted, they are emitted into the atmosphere and they affect the air quality within the United Kingdom (UK).



The sources of air pollutants and their effects.

Source - Clean Air Strategy 2019, DEFRA

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf Poor air quality can affect people's health on a daily basis and can result in premature death. Therefore, it is imperative that poor air quality is recognised as a public health issue and that continual measures are taken to improve the air quality even if the air quality objectives in the UK are being met.

The two main types of air pollution within the United Kingdom are Nitrogen Dioxide (NO_2) and Particulate Matter $(PM_{10} \text{ and } PM_{2.5})$, therefore this report will explain the effects of these pollutants on health, the concentration levels within the Borough of Broxtowe and measures that have been, are being and will be taken to improve the air quality within the Borough.

What is Nitrogen Dioxide?

Nitrogen Dioxide is a reddish brown gas with the chemical formula NO_2 . Nitrogen Monoxide is a colourless gas with the chemical formula NO. Collectively NO_2 and NO are known as Oxides of Nitrogen and the chemical formula is NOx.

As mentioned previously NOx is emitted into the atmosphere due to the combustion of fuels such as coal, oil, gas, petrol, diesel and the burning of wood or as natural gas from domestic central heating boilers or power stations.

Some sources of NOx release NOx in the form of NO_2 into the atmosphere, these are known as primary sources of NO_2 , which are mainly emitted from vehicle exhausts. It was previously believed that it was petrol vehicles that were the main source of NO_2 however the use of diesel particulate filters within the exhaust systems of diesel vehicles have resulted in high concentrations of NO_2 being emitted into the atmosphere.

Another source of NO_2 in the atmosphere is due to a chemical reaction in the atmosphere between NO and Ozone (O₃). This is classed as a secondary source of NO₂. However, if concentrations of O₃ are low near to the source of NO then NO₂ will not be formed.

What is Particulate Matter?

Particulate matter is the term used for a mixture of solid particles and/or liquid droplets within the air. Particulate matter varies in size with some particles being easily visible to humans e.g. dust, soot, smoke and vapour from domestic boiler flues. However, some particles are so small that they cannot be seen with the naked eye and it is these particles that are easily absorbed deep into the lungs and cannot be expelled when they are breathed in.

Size of Particulate Matter



Source: USEPA - https://www3.epa.gov/pm/basic.html

Research has shown that there is significant harm to health at concentrations of Particulate Matter well below the current EU and UK limit values. (See Appendix K for the Air Quality Objectives for the UK).

There are many sources of particulate matter in the United Kingdom, examples of these are:

- Vehicle exhausts
- The wearing of brake pads, tyres and asphalt
- Rust from vehicles
- Poor fuel combustion
- Dust from demolition and building sites
- Bonfires and inefficient burning of solid fuel e.g. wood.

Within the United Kingdom the main particulate matter that causes concern is particulates that are classed as 'fine particles' ($PM_{2.5}$) or 'inhalable coarse particles' (PM_{10}). The particles are measured in size and referred to as microns (μ m). PM_{10} are particles that are 10 microns to 2.5 microns in size, and $PM_{2.5}$ are particles that are 2.5 microns or less.

What are the Health Effects of Poor Air Quality?

Air pollution is associated with a number of adverse health impacts both short term and long term. 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.

To be able to understand the full effects of poor air quality on humans an understanding of how the pollutants enter the body, where they go once they are within the body and the effects that they have are shown in the diagram below.

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

Where air pollutants go in our bodies and what they do



Source - Air Quality: A Briefing for Directors of Public Health, March 2017 https://lagm.defra.gov.uk/assets/63091defraairqualityguide9web.pdf

Health Matters

When people are within an area of poor air quality the length of time they are there is called the 'exposure' time'. There are two types of exposure, short-term and long term. Short-term is when the person is subjected to poor air quality for a short time e.g. a couple of hours and the effects are called 'Short-term effects'. Long term exposure is when people are consistently living or working with in an area where there is poor air quality. The short- term and long-term effects on the body are shown in the diagram below.

The short and long-term effects of air pollution

www. Public Health England

Health effects of air pollution short-term long-term effects effects stroke exacerbation (\circ) of asthma lung cancer cough, wheezing respiratory conditions and shortness of breath cardiovascular disease episodes of high air pollution increase respiratory and and cardiovascular hospital reduced life admissions and mortality expectancy



Health Effects of Nitrogen Dioxide

The main health effect of breathing in raised levels of Nitrogen Dioxide is the increased likelihood of respiratory problems, as Nitrogen Dioxide inflames the lining of the lungs, and it can reduce immunity to lung infections. This can cause problems such as wheezing, coughing, colds, flu and bronchitis and can exasperate pre-existing conditions like asthma and Chronic Obstructive Pulmonary Disease.

The Committee on the Medical Effects of Air Pollution (COMEAP) has produced estimates of the attributable deaths of people aged 25+ due to NO₂ and Particulate Matter based on 36,000 for all local authorities in the United Kingdom. The estimates are based on the researched evidence of mortality risk combined with modelled levels of background air pollution to which populations are exposed to at each local authority. Table i provides the results for the East Midlands, Nottinghamshire County Council, Nottingham City and all the District and Borough Councils within Nottinghamshire.

Table i – Estimated Attributable Deaths in 2018 due to NO ₂ and Particulate	Э
Matter based on 36,000.	

Area	Attributable deaths Age 25+ due to NO ₂ and PM based on 36,000	Associated Life-years Lost based on 36,000		
East Midlands	3,115	29,813		
Nottinghamshire County Council	567	5,430		
Nottingham City	181	1,734		
Ashfield	94	913		
Gedling	87	866		
Newark and Sherwood	87	863		
Bassetlaw	84	855		
Broxtowe Borough Council	86	844		
Mansfield	79	819		
Rushcliffe	77	728		

Source: COMEAP, Associations of long-term average concentrations of Nitrogen Dioxide with mortality, 2018.

Table i shows that in the Borough of Broxtowe out of 844 life years lost, 86 of these are attributable to NO_2 and Particulate Matter. However, the data also identifies that Broxtowe does not have the highest number of deaths that are attributable to air quality in comparison to other District and Borough authorities in Nottinghamshire

Health Effects of Particulate Matter

The health effects associated with short term and long-term exposure to particulate matter are; exacerbation of asthma, effects on lung function, increases in hospital admissions for respiratory and cardiovascular conditions, and also increases in mortality⁴. Public Health England (PHE) has produced estimates of the risk of mortality from particulates for all local authorities in the United Kingdom. The estimates are based on the researched evidence of mortality risk combined with modelled levels of background air pollution to which populations are exposed to at each local authority. Table ii provides the results for Nottingham City and Broxtowe Borough Council.

Table ii – Estimated Effects of Annual Mortality in 2018 of human-made $PM_{2.5}$ Air Pollution.

Area	Attributable fraction	Attributable * Deaths aged 30 and over	Associated life- years lost
Nottingham City	5.2	121	Work Out
Broxtowe Borough Council	4.9	55	Work Out

Source: Estimating Local Mortality Burdens associated with particulate air pollution, PHE, 2019.

*Air pollution is likely to contribute a small amount to the deaths of a larger number of exposed individuals rather than being solely responsible for the number of deaths equivalent to the calculated figure of attributable deaths.

Discuss Table ii

⁴Gowers, A.M. et al Estimating Local Mortality burdens associated with Particulate Air Pollution, Public Health England, 2017.

However, as previously mentioned in this report it must be noted that research has shown that there is significant harm to health at concentrations of Particulate Matter well below the current EU and UK limit values.

Air Quality in the Borough of Broxtowe

The main air quality issue within the Borough is due to the M1 and the A52, which is the main road that connects Nottingham to Derby and is used heavily by commuters. Residential properties are situated alongside the M1 and the A52.

The main pollutant of concern within the Borough is Nitrogen Dioxide, which is emitted from vehicle exhausts and is prevalent in areas where there are congested roads. However, it must also be noted that ambient background levels are affected by emissions from domestic heating e.g. Oxides of nitrogen from boilers and particulate matter from solid fuel burners.

Broxtowe Borough Council participates in the United Kingdom Nitrogen Dioxide diffusion tube network and has 43 diffusion tubes sites throughout the Borough. The sites are primarily monitoring the M1 corridor and the A52. Some of the diffusion tubes are sited within and near to the existing Air Quality Management Area (AQMA), which is situated in Trowell. Monitoring is still being undertaken in the three revoked AQMAs to ensure that the concentrations remain below the air quality objective. Further information on the AQMA is discussed in Chapter 2.1 of this report.

The 2019 nitrogen dioxide results show that the air quality levels are below the objective of $40\mu g/m^3$ for all of the monitoring locations throughout the Borough. The results are discussed in greater detail in Chapter 3.2.1 of this report.

Since January 2013, there are only thirteen NO_2 monitoring sites that have continued to be used for the past six years. Therefore, it is important to identify any trends in these sites. Out of the thirteen sites, twelve of the sites are showing a downward trend since 2013, The one remaining site has only shown a very slight downward trend but has increased in 2019 by $3\mu g/m^3$ in comparison to 2018. The trends are discussed in greater detail in Chapter 3.2.1 of this report and Appendix C contains the trend graphs for the thirteen sites.

In respect of particualtes, the modelled background level provided by Defra for the Borough of Broxtowe is predicted to be between $8\mu g/m^3$ and $11\mu g/m^3$ for 2019, with the annual mean for 2019 being $9.73\mu g/m^3$. The World Health Organisation (WHO) guideline level for PM_{2.5} is $10\mu g/m^3$.

Broxtowe Borough Council has a close working relationship with Highways England and Nottinghamshire County Council Highways Department. Highways England manages the M1 Motorway and the A52, which run through the Borough. Nottinghamshire County Council Highways Department manage the remaining roads that run through the Borough; this includes the A610/B600 Nuthall Roundabout.

The Council works with Highways England and Nottinghamshire County Council by continuing to monitor air quality levels throughout the Borough, to inform them of any changes to the air quality levels, to provide maps of the air quality management areas and to provide yearly air quality reports. By working together actions are implemented where possible to ease congestion by maintaining a steady flow of traffic throughout the Borough and to also promote sustainable travel.

The Environmental Health team at Broxtowe Borough Council also works closely with the Environment Agency who attends the Nottinghamshire Environmental Protection Working Group meetings and colleagues in the Planning department at the Council. This ensures that air quality issues are raised and considered throughout the planning process.

Actions to improve Air Quality

Below is a brief summary of the core actions to target sources of pollution in the Borough of Broxtowe over the past year.

UPDATE ALL ACTIONS

Further information on these core actions and progress on grant funded projects are discussed in greater detail in Table 2.2 of this document.

Conclusions and Priorities

The 2019 nitrogen dioxide results show that the air quality levels are below the objective of $40\mu g/m^3$ for all of the monitoring locations throughout the Borough including the AQMA. Although the objectives are being met it is very important to continue to improve air quality within the UK as poor air quality is a public health concern.

Therefore, to continue to improve the air quality in the Borough the priorities for Broxtowe Borough Council in addressing air quality for the coming year are to:

- Review the NO₂ diffusion tubes network annually, discontinue sites where the annual air quality levels are comfortably below the objective, and relocate them to new sites within the Borough. Extensive monitoring will allow Broxtowe Borough Council to identify and focus on 'problem' areas.
- Continue to reduce the levels of NO₂ in the Borough by working with Highways England and Nottinghamshire County Council.
- Continue to be a member of the East Midlands Air Quality Network (EMAQN), to liaise with colleagues in Public Health and other local authorities.
- Continue to promote the final version of the "EMAQN Air Quality and Emissions Mitigation: guidance for developers" document.
- Continue to be a member of the Nottinghamshire Environmental Protection Working Group, and to liaise with colleagues in Public Health and the Health and Wellbeing Boards (Nottingham City and Nottinghamshire County) to ensure that Air Quality continues to be included in the Joint Strategic Needs Assessment for the County and any future work that involves air quality issues.
- Engage with the public about air quality and raise awareness of the health effects of air quality.
- Continue to provide the public, companies and businesses within the Borough with methods that they can use to improve air quality for themselves and also the health of their employees.
- Continue to provide information on green travel e.g. walking, cycling by providing leaflets.

- Continue to support bus companies and taxis that operate within the Borough to reduce emissions.
- Continue to review suitable research methods for reducing air quality levels for both NO₂ and particulate matter.
- Broxtowe Borough Council is an active member in the Air Quality Strategy Task Group.

• UPDATE ABOUT NAQS

• Review the measures in Broxtowe Borough Councils Air Quality Action Plan and to continue to report on them in the next ASR as well as all the measures that are being implemented in the Borough to reduce air quality levels.

• DISCUSS LOCAL PLAN ABOUT AQ AND EVCP

 Continue to attend regional HS2 meetings to ensure that suitable mitigation measures are made during the construction phase and when HS2 is operational.

One of the challenges associated with addressing the air quality in the Borough is that the main source of the air quality problem is the M1 Motorway, which is managed by Highways England and is not under the control of Broxtowe Borough Council. Although Broxtowe Borough Council have a close working relationship with Highways England it is unable to impose or make any changes to the M1 to improve the air quality within the neighbouring residential areas. However, Highways England has undertaken projects at great expense in the past to improve the air quality within the Borough e.g. widening scheme and Smart Motorway scheme.

Apart from the M1 and the A52 all of the roads within the Borough are managed by Nottinghamshire County Council who manages the traffic flows, repairs, diversions etc. There are several challenges associated with this. The first challenge is that Broxtowe Borough Council is unable to impose or make any changes to the structure or flow of the roads. The second challenge is that the allocated County Council integrated transport funding has been reduced by approximately £3.5m from 2015/16 onwards. This significantly reduces the funding available for transport improvements that will deliver air quality improvements.

A lack of funding and resources is also a challenge that Broxtowe Borough Council face in trying to address the air quality in the Borough. The lack of resources/funding does not allow the monitoring of PM_{10} and $PM_{2.5}$ within the Borough as the equipment is expensive to buy and also maintain. However although monitoring is not carried out, there are measures that are enforced in the Borough which would reduce airborne particulates, see Chapter 2.3 in this report for further information.

Local Engagement

Since the 2019 Annual Status Report (ASR) Broxtowe Borough Council (BBC) has continued to be in the East Midlands Air Quality Network (EMAQN), who review current air quality issues for the area. EMAQN is run by Public Health England. EMAQN has collectively produced a report to assist local authorities and developers when determining whether an air quality assessment is needed during the planning application process. The aim of EMAQN is to engage decision makers from different disciplines to assist in reducing AQ levels as a whole in the East Midlands. This also enables neighbouring counties to communicate more openly, which is vital for BBC due to it being next to Derbyshire because the A52 is a major source of air pollution, which runs through Derbyshire and Nottinghamshire.

Defra have identified Derby and Nottingham as exceeding the air quality objective therefore, they are mandated to implement a Clean Air Zone (CAZ). However, Nottingham City Council subsequently undertook air quality modelling of several potential CAZ options (charging and non-charging) alongside planned actions (e.g. measures to provide and promote sustainable transport infrastructure) to determine if they would deliver the required air quality objectives. This modelling has identified that air quality objectives are anticipated to be met without the introduction of a charging CAZ. Broxtowe Borough Council was selected in 2018 to be in the Air Quality Task and Finish Group, which has been set up to update the Nottinghamshire Air Quality Strategy (NAQS). **UPDATE ABOUT NAQS**

How to Get Involved

Residents and Businesses living or working in Nottinghamshire can improve the air quality in the area by taking simple measures. One of the main changes that can be made is to use sustainable travel more and reduce dependency on the car when possible. Below are some of the actions that people can take, and particularly for short journeys.

 Public transport – To use all means of public transport whenever possible e.g. trams, buses and trains. In addition to printed materials, an integrated public transport planning tool detailing local bus, rail and tram networks, as well as for trips further afield can be found at

https://www.nottinghamshire.gov.uk/travelchoice/journey-planner and http://www.traveline.info/ Details on travelling on school buses to Nottinghamshire schools and assistance available to do so, can be found at http://www.nottinghamshire.gov.uk/education/travel-to-schools. The tram timetable is available at http://www.thetram.net/ The Big Wheel promotes sustainable travel within the Nottingham urban area (including parts of Broxtowe); it assists people and businesses with journey planning and advice. Further information can be found at http://www.thebigwheel.org.uk/

- Car sharing schemes Nottinghamshire have a car share scheme which is available to anyone at <u>https://liftshare.com/uk/community/nottinghamshare</u> but all businesses can produce their own.
- Park and Ride There are a variety of Park and Ride sites within Nottinghamshire, which serve the Nottingham Tram and buses. Information for these Park and Ride sites which includes maps of their locations are found at <u>http://www.nottinghamshire.gov.uk/transport/public-transport/park-and-ride</u>
- Walking and Cycling The health benefits of physical activity e.g. walking or cycling outweigh the risks from air pollution. You can easily avoid the worst pollution by travelling along quieter streets. Even walking on the side of the pavement furthest from the road can help.

Walking -

- Walk short distances rather than drive; this also has the benefit of improving your health as well.
- Information on walking networks in Nottinghamshire can be found at <u>http://www.nottinghamshire.gov.uk/planning-and-environment/walking-cycling-and-rights-of-way/walking_and</u> <u>http://www.nottinghamcity.gov.uk/transport-parking-and-streets/rights-of-way-walking-and-cycling/walking-in-nottingham/</u> and a planning tool for deciding your route when walking can be found at <u>http://walkit.com/</u>
- Walking and cycling to school School travel plans promote group cycling and walking for pupils to safely get to school. Information on the travel to school options can be found at

http://www.nottinghamshire.gov.uk/education/travel-to-schools.

Cycling -

- Use the extensive cycle routes that are available throughout Nottinghamshire. Maps and cycling journey planners that cover all of Nottinghamshire, including the city and further afield are available at http://www.nottinghamshire.gov.uk/planning-and-environment/walkingcycling-and-rights-of-way/cycling. Maps of just the city cycle routes for Nottingham are available at http://www.nottinghamcity.gov.uk/cycling. There are also cycle centres within Nottinghamshire that are run by RideWise who are a Nottingham based charity. RideWise provide weekly advice, training, bike rides, free bike loans and information about routes and journey planning. Further information about RideWise can be found at http://www.ridewise.org.uk/ride/index.php Sustrans is also a charity that promotes sustainable travel and further information can be found at http://www.sustrans.org.uk/
- Driving- When you have to drive you can still help to improve air quality by;
 - Make sure that your car is at its most efficient and think about how you drive, this will also save you money. Tips on how to save money on fuel and reduce your emissions are available at http://www.energysavingtrust.org.uk/travel/driving-advice.

- If you are thinking about changing your car consider buying a lowemission vehicle, you can get more information on these vehicles and the support available at http://goultralownottingham.org.uk/
- Bonfires To not have bonfires at all and to compost all garden waste and recycle rubbish rather than burn it.
- Heating your home
 - Smoke Control Area Large parts of Nottinghamshire is a smoke control area, therefore you cannot emit smoke from a chimney unless you are burning an authorised fuel or using an exempt appliance e.g. some burners or stoves. Further information on suitable fuels and exempt appliances can be found at <u>https://smokecontrol.defra.gov.uk/index.php</u> All appliances must be kept in good working order to ensure that they are working efficiently and it is advised that you contact your Local Council to determine whether you are in a smoke control area or not
 - House Boilers Ensure that boilers are serviced regularly and kept in good working order. If a boiler needs replacing then purchase one that has a low NOx emission rating



Source - Clean Air Strategy 2019, DEFRA

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

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1 Local Air Quality Management

This report provides an overview of air quality in Broxtowe Borough Council during 2019. 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 Broxtowe 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 L.1 in Appendix L.

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.

Further information about the remaining AQMA declared by Broxtowe Borough Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <u>https://www.broxtowe.gov.uk/for-you/environmental-health-noise-and-pollution/airguality/</u> Alternatively, see Appendix E: Maps of Monitoring Locations and Appendix F: Map of AQMA in Trowell, which provides a map of all the monitoring locations throughout the Borough and also a map of the AQMA in Trowell.

Section 2.4 of this report provides an update on the Air Quality Action Plan.

Table 2.1 – Declared Air Quality Management Areas

_	AQ MA Na me	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exe (maximum r concentration a relevant ex At Declaration µg/m ³	ceedance nonitored t a location of tposure) Now µg/m ³	Action Plan (inc date of publication)
Page 53	AQ MA 1 Tro well	1 st February 2006	NO ₂ Annual Mean	Trowell, Nottingham	AQMA 1 encompasses twenty properties on parts of Iona Drive and Tiree Close next to the M1 motorway in Trowell	Yes	45	30	<u>Action Plan</u> 2008.

2.2 Progress and Impact of Measures to address Air Quality in Broxtowe Borough

Defra's appraisal of last year's ASR concluded that;

- The Local Authority provide a very detailed discussion of the NO₂ trends within the borough. In addition to this they discuss the trends in relation to locations which is extremely useful and this approach to data discussion is encouraged in future reports. BBC will continue to report data in this manner.
- There have been no exceedances of national air quality objectives in 2018 and concentrations in the Trowell AQMA continue to fall. The Council have stated that they plan to implement measures to ensure NO₂ concentrations are below the AQOs and when long-term compliance is achieved they will revoke the AQMA. If current NO₂ trends continue and concentrations decline, then the revocation of the AQMA is strongly supported. See Section 2.4 of tis report for an update on the AQMA and AQAP.
- It would be useful if Section 2.3 could make reference to the Public Health Outcomes Framework, and the local indicator for PM2.5 in the district. The Council may wish to consider comparing the '3.01 Fraction of mortality attributable to particulate air pollution indicator' value for Broxtowe to nearby LAs and National indicator values. This can be found in the link below. https://fingertips.phe.org.uk/profile/public-health-

outcomesframework/data#page/0/gid/1000043/pat/6/par/E12000005/ati/101/-are/E07000194. -BBC has done this see Section 2.3 of this report

Broxtowe Borough Council (BBC) and Nottinghamshire County Council (NCC) have taken forward a number of measures during the current reporting year of 2018/2019 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2 More detail on these measures can be found in BBC Action Plan, the Nottinghamshire Local Transport Plan 2011-2026 (and its implementation plans) and Highways England Reports (Post opening project evaluation reports for the M1 Junction 25 to 28 widening and the A52 West of Nottingham Corridor Improvements).

Key completed measures are: UPDATE

DISCUSS BARRIERS AND CHALLENGES

ບັດ Biscuss HS2 CONSULTATION AND THE POSSIBLE EFFECTS ON AQMA ເງ

Table 2.2 - Progress on Measures to Im	provo Air Quality — HD	
Table 2.2 - Frogress on measures to in	prove All Quality - OFI	JATE NON DEC MILASURES

Me sur No	e Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
1	Light rail tram infra- structure	Transport Planning and Infrastructur e	Public transport improveme nts- interchange s stations and services	2015	NCiC/NCC; DfT/WPL funding	Increased passenger transport patronage		 NET Phase 2 (with route through Broxtowe) opened 2015 No further schemes other than a possible extension to the HS2 Terminus in Toton. 	Complete
2	Car sharing scheme	Alternatives to private vehicle use	Car & lift sharing schemes		NCC	In 2018: 1.69 tonnes reduction in NOx; 647.13kg reduction in CO2		•3,351 current members.210 members in 2018	On-going
3	Introductio n of car club	Alternatives to private vehicle use	Car Clubs		NCC/NCiC	Restrain average journey times in the morning peak to a 1% increase per year		 Nottm city scheme introduced in 2014. Provider reviewed in 2018. Expansion of scheme into county dependent on its success which is still unclear Funding for implementation to be determined 	On-going

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
4	Nottingham Go-Ultra Low programme - introductio n of areawide EV charging network	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructur e to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	NCiC/NCC/ BBC; OLEV funding	On-going take-up of cleaner vehicles		 £6.1m funding secured for 2016-2021 Site investigation to determine feasibility and installation of infrastructure underway. To date 38 publicly-available charge points have been installed across the Borough. 28 are installed in BBC car parks in Beeston, Eastwood, Kimberley and Stapleford. Grants also available to help businesses install charging infrastructure 	2021
5	Nottingham Go-Ultra Low programme - promoting uptake of LEVs	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructur e to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	NCiC/NCC; OLEV funding	On-going take-up of cleaner vehicles		 £6.1m funding secured for 2016-2021 Preferred partner to deliver EV charging infrastructure procured during 2018 Promotion events held for public, businesses and fleet operators including loans of LEVs for trial use in 2018 	2021

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
6	Nottingham City Clean Air Zone	Promoting Low Emission Transport	Low Emission Zone (LEZ) or Clean Air Zones (CAZ)	2019/20	NCiC; DfT funding	Reduced Emissions		•Nottingham City Council undertook air quality modelling of several potential CAZ options (charging and non-charging) alongside planned actions (e.g. measures to provide and promote sustainable transport infrastructure) to determine if they would deliver the required air quality objectives. This modelling has identified that air quality objectives are anticipated to be met without the introduction of a charging CAZ.	2020
7	Joint Strategic Needs Assessmen t	Policy Guidance and Developme nt Control	Air Quality Planning and Policy Guidance	2017	NCC/NCiC/Bo rough and District councils	Raising awareness and reduced emissions		 Air Quality is now a chapter in the Joint Strategic Needs Assessment and part of the Health and wellbeing Board considerations. Currently being reviewed and updated in 2019. 	On-going
8	Nottingham shire Air Quality Strategy	Policy Guidance and Developme nt Control	Air Quality Planning and Policy Guidance	2019	NCC/NCiC/Bo rough and District councils	Improving Air Quality, reduced Emissions and Raising awareness.		 Strategy reviewed and rewritten. Due to be approved at Nottinghamshire Health & Wellbeing Board in June 2019 	2019
9	Planning and Policy Guidance	Policy Guidance and Developme nt Control	Air Quality Planning and Policy Guidance	2019	BBC	Reduced Emissions	0.2µg/m ³	• Broxtowe Part 2 of the Local Plan (2018- 2028), which includes Policy 20 on Air Quality, was adopted in 2019. This policy ensures that air quality remains an important consideration when granting planning permission and to encourage developers to include sustainable travel measures as part of the planning application.	Complete

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
10	Developer requiremen ts to provide of EV charging points at new developme nt	Policy Guidance and Developme nt Control	Air Quality Planning and Policy Guidance	2019	BBC	Reduced Emissions	0.2µg/m ³	•Review of the Broxtowe Local plan includes Policy 26 that would require a Travel Plan to be submitted with any planning application for 10 or more dwellings or 1,000 square metres or more floorspace. This policy is was adopted in September 2019.	Complete
11	Inspection of Permitted Processes	Environmen tal Permits	Introduction /increase of environmen t charges through permit systems and economic instruments	On-going	BBC	Reduced Emissions	Reduction in air bourne pollutants from the various processes throughout the Borough.	• Annual inspections of permitted processes were undertaken; all permitted processes were risk rated with the higher risk processes incurring a higher annual subscription fee. The risk rating did not change in 2019, and all permitted processes were fully compliant.	On-going
12	Encourage ment of low- emission public transport fleets	Vehicle Fleet Efficiency	Vehicle Retrofitting programme s	2018	NCC/operator s; NCC/OLEV - Green Bus Technology Fund	Reduced Emissions and On-going take-up of cleaner vehicles		 NCC secured £1.3m; and NCiC secured £1.5m from the Green Bus Technology Fund in Feb 2018 to retrofit older buses This includes 21, 34, 35, Indigo, Rainbow 1 and Rapid 1 services in the Borough. 	2020
13	Encourage ment of low- emission public transport fleets	Vehicle Fleet Efficiency	Promoting low emission public transport	2017	NCC; NCC/OLEV - Green Bus Fund	On-going take-up of cleaner vehicles		 NCC secured £527,000 OLEV funding and will match fund the scheme with £410,000 from its transport budget. Introduction of two electric buses (and their associated infrastructure) on route 510, serving communities in Beeston and Stapleford. 	On-going Complete

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Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
14	Encourage ment of low- emission public transport fleets	Promoting Low Emission Transport	Company Vehicle Procureme nt - Prioritising uptake of low emission vehicles	On-going	NCC/NCiC/PT operators; NCT (operator) funding	Reduced Emissions		•The Statutory Quality Partnership Schemes (SQPSs), which includes fleet standards is in place affecting all buses travelling through AQMA.	On-going
15	Review of on-street car parking in and around the AQMA	Traffic Manageme nt	Workplace Parking Levy, Parking Enforcemen t on highway	On-going	NCC	Restrain average journey times in the morning peak to a 1% increase per year		 Introduction of junction protection and targeted roadside parking restrictions (including bus stop clearways) along feeder corridors into the AQMA to help traffic flows/journey times. Parking restrictions already in place, no additional side-road/off-line locations currently identified as requiring restrictions to aid trraffic flow 	On-going Implemented and On- going
16	Optimisatio n of traffic signals	Traffic Manageme nt	UTC, Congestion manageme nt, traffic reduction	2017	NCC/Via EM Ltd: NCC revenue funding	Restrain average journey times in the morning peak to a 1% increase per year	0.2µg/m ³	 All traffic signalling equipment at A610 Nuthall Island were replaced during 2017/18. Also the introduction of additional traffic monitoring cameras and advanced remote control systems were also installed to enable reactive and pro-active interventions to improve traffic flow A review of the signal timings and linking at the signal junction was also undertaken during 2017/18 	Complete Complete Complete

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
17	Traffic control and information	Traffic Manageme nt	UTC, Congestion manageme nt, traffic reduction	On-going	Nottinghamshi re County Council (NCC)/Via EM Ltd/Nottingha m City Council (NCiC): NCC and NCiC revenue funding	Restrain average journey times in the morning peak to a 1% increase per year		 Traffic control centre that monitors traffic movement on the local highway network (not the trunk road/motorways) and provides real time traffic control over many traffic signal installations, including on A610 at Nuthall Potential barrier: Lack of future revenue funding 	On-going On-going
18	Co- ordination of street works	Traffic Manageme nt	UTC, Congestion manageme nt, traffic reduction	On-going	NCC/Via EM/NCiC: NCC and NCiC revenue funding	Restrain average journey times in the morning peak to a 1% increase per year		 Systems for notice management and coordination have been upgraded to enhance noticing handling, monitoring of works proposals, coordination of works and directing timing of works Street designations/network hierarchy review is on-going to improve data quality for works promoters and network managers and to prioritise works management Regular coordination meetings held between all works promoters and regional partners in additional to regular meetings between HE and regional partners to create a framework programme of planned works affecting strategic and local routes Detailed journey time monitoring undertaken annually since 2005/06 Implementation on-going 	On-going On-going On-going

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
19	Real time travel information	Public Information	Other	On-going	NCC/Via EM Ltd: NCC revenue funding	Restrain average journey times in the morning peak to a 1% increase per year		 Information conveyed by all forms of media (press, radio, website, social media etc.). The Travelwise centre remains in operation 24hrs a day, every day. Implementation on-going 	On-going On-going
20	Contingenc y planning, and effective event and incident manageme nt	Traffic Manageme nt	UTC, congestion manageme nt, traffic reduction	On-going	NCC/Via EM/NCiC/High ways England (HE): NCC, NCiC, HE revenue funding	Restrain average journey times in the morning peak to a 1% increase per year		 The local operating agreement between the authority and HE has been comprehensively reviewed to identify the relevant parts of the network which have interaction on each authority and to put in place appropriate communication channels for management of incidents and dissemination of information Key locations on the local network have been identified and associated diversion routes investigated in line with the developing network hierarchy Incidents dealt with through agreed procedures and regular partnership meetings held. Working in close collaboration with the City and HE, tactical diversion routes have been developed for the emergency diversion of traffic from any part of the strategic road network, to reduce the delay in rerouting traffic to ease congestion at the time of incidents Detailed journey time monitoring undertaken annually since 2005/06. Implementation on-going 	On-going On-going On-going

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
21	Bus service improve- ments	Transport Planning and Infrastructur e	Public transport improveme nts- interchange s stations and services	On-going	NCC/PT operators	Increased passenger transport patronage		 Review of all of the bus services in the county, including commercial, supported and specialist services. The aim of this work is to review and design cost effective services that meet local needs. 	On-going
22	Bus infra- structure	Transport Planning and Infrastructur e	Public transport improveme nts- interchange s stations and services	On-going	BBC and NCC; integrated transport block funding	Increased bus patronage	Reduced emissions due to increased bus patronage.	 An annual programme of updates and maintenance of all stops including updating network maps to ensure all information is current and accurate is on- going. Implementation on-going BBC provides 50% of the funds for the installation of new bus shelters and real time bus information at bus stops. 	On-going On-going
23	Sustainabl e Travel information for the Public	Public Information	Via leaflets, internet, other	On-going	BBC	Increased use of public transport	Reduced Emissions of N02 and PM	 BBC have leaflets on safe cycling on the tram lines, bus routes, Broxtowe cycling map, Broxtowe Country and Erewash Valley routes and walking leaflets. These are all available in the Council reception Sustainable Travel methods are also available on the main council website. 	On-going
24	Concessio n-ary fare schemes	Transport Planning and Infrastructur e	Other	On-going	NCC/PT operators	Increased passenger transport patronage		Implementation on-going	On-going

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
25	Nottingham city workplace parking levy (WPL)	Traffic Manageme nt	Workplace Parking Levy, Parking Enforcemen t on highway	2012	NCiC	Restrain average journey times in the morning peak to a 1% increase per year		•NCiC introduced WPL within the city in 2012 and have used funding to make passenger transport improvements in the city	Introduced 2012 and on-going
26	Public sector LEV procureme nt	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2015	NCC/BBC	Reduction in vehicle emissions due to less polluting vehicles replacing older more polluting vehicles		 NCC upgraded its pool vehicles to lower emission diesel vehicles. All new fleet vehicles at BBC are Euro6 emissions complaint. There are 90+ fleet vehicles and they are on a 10 year replacing rolling programme Dependant on whether funding from Central Government continues 	2024
27	Vehicle emissions testing	Vehicle Fleet Efficiency	Testing Vehicle Emissions	On-going	BBC	Reduced emissions	Reduction in NO2 and PM as regular serviced and maintained vehicles t ensure they are operating efficiently.	 All BBC Fleet vehicles (98 road vehicles including 20 LGV's) are annually emission tested in house prior to MOT Emission testing. BBC also undertakes additional emissions tests on all fleet vehicles if any new fuel or engine components have been changed. This is to ensure vehicle emission compliance. 	On-going On-going
28	Marketing and promotion of passenger transport	Promoting Travel Alternatives	Other	On-going	NCC/NCiC/ PT operators	Increased passenger transport patronage		 Various marketing campaigns undertaken in partnership with operators and Nottingham City Council. Co-ordinated through the Greater Nottingham Bus Quality Partnership. Network maps produced to coincide with route/timetable changes 	On-going Complete

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N S N	lea ure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
									 No cars normally older than 8 years will be licensed as a taxi within the borough. A review of the taxi licensing conditions will be undertaken to establish a common policy of conditions throughout the 	Estimated Completion Date On-going Complete Complete Complete Implement ed and On- going on-going
29	29	Taxi Licensing Conditions	Promoting Low Emission Transport	Taxi Licensing Conditions	2011 and 2019	BBC	Reduced emissions	Reduction in NO2 and PM as cleaner vehicles	 From 13th June 2018, all petrol vehicles are required to meet Euro 5 standards, all new diesel vehicles are required to meet Euro 6 emissions. Hybrid and Electric Vehicles to be licensed as "Taxi's" by quoting minimum 70kW and reducing boot space requirement to allow for battery storage. 	Complete
										Complete
;	30	Civil Parking Enforceme nt	Traffic Manageme nt	Workplace Parking Levy, Parking Enforcemen t on highway	2008	NCC; NCC revenue funding	Manage parking to improve journey time reliability.		 Introduced on County roads in May 2008 to help ensure parking does not interfere with the free flowing traffic. Implemented and on-going 	Implement ed and On- going
		ССТУ	CCTV forceme t vehicle CCTV Traffic Traffic Manageme nt Workplace Parking Levy, Parking Lavy, Enforcemen Enforcemen CCTV Manageme CCTV C		NCC; NCC	Manage parking to		 'Camera car' to enforce school keep clear and bus stop clearway markings became fully operational during 2016 	on-going	
	31	enforceme nt vehicle		eme Manageme Parking 2016 a icle nt Enforcemen	2016 and 2019	a revenue funding	improve journey time		•A second CCTV vehicle was purchased in 2018.	Complete
				t on highway			reliability		•Third CCTV vehicle planned to be purchased in 2019.	2019.

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
32	Encouragin g the use of emissions standards when procuring school bus contracts and supported bus services	Promoting Low Emission Transport	Company Vehicle Procureme nt - Prioritising uptake of low emission vehicles	On- going	NCC/PT operators	Reduced Emissions and On-going take-up of cleaner vehicles		•On-going take-up of LEVs	On-going
33	20mph speed limits outside schools	Traffic Manageme nt	Reduction of speed limits, 20mph zones	2013	NCC; integrated transport block funding	Increased walking/cyclin g trips		 Advisory 20mph speed limits installed outside all feasible schools 	Complete
34	School travel plans	Promoting Travel Alternatives	School Travel Plans	2000	N/A	Restrain average journey times in the morning peak to a 1% increase per year		 STPs have been developed and approved at all but 3 schools in Broxtowe Update - Funding withdrawn by DfT in 2010; no pro-active STP work undertaken since that date. NCC considering the development of online advice tool for schools. 	Complete Complete
35	Cycling networks - developme nt of Local Cycling and Walking Infrastructu re Plan (LCWIP)	Transport Planning and Infrastructur e	Cycle network	2019	NCC/NCiC/D CC/DCiC/bor ough and district councils/Sus trans/other stakeholders ; DfT funding	Increased levels of cycling		 Funding secured to develop D2N2 wide LCWIP. Data collected, three stakeholder events held Prioritised list of improvements to be included in final LCWIP 	2019

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Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
36	Cycling networks	Transport Planning and Infrastructur e	Cycle network	2018/19	NCC/Via EM/NCiC: LGF, s106 funding	Increased cycling trips		 Construction of improved cycle links between Beeston, Enterprise Zone and the City underway during 2018/19 Other cycling improvements are developed and delivered as part of the annual integrated transport programme and through developer funded improvements 	2018/19 Schemes dependent on funding being made available for such improvement s
37	Cycle hire scheme	Transport Planning and Infrastructur e	Public cycle hire scheme		NCiC/NCC; funding source to be determined	Increased cycling trips		 Hire schemes at the nearby University of Nottingham in place Feasibility study undertaken on a city based hire scheme which potentially could include parts of the county such as Beeston Scheme dependent on commercial cycle hire scheme providers committing to, and delivering a scheme 	Not known - dependent on commercial cycle hire scheme providers
38	Cycle training	Promoting Travel Alternatives	Promotion of cycling		NCC; DfT funding/PH funding	Increased cycling trips		 •7,544 people received cycle training in 2018/19. •Scheme dependent on DfT funding being made available for Bikeability •Implementation on-going 	On-going
39	Cycle parking facilities	Transport Planning and Infrastructur e	Cycle network	2015	NCC/BBC; integrated transport block/ developer contributions	Increased cycling trips		 Cycle hub installed in 2015 to integrate with bus/rail services Ad-hoc parking provided where required 	Complete On-going

	Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
40	40	Marketing of cycling	Promoting Travel Alternatives	Promotion of cycling	2010 and 2017	NCC	Increased cycling trips		 Cycling in Nottinghamshire has increased by 10% between 2010 and 2017; and in Broxtowe district there has been a 12% increase in cycling between 2010 and 2017. Marketing of cycling is undertaken in a variety of formats for both commute and 	On-going
									leisure trips. Various NCC campaigns have been undertaken including 'cycling week', 'Notts Routes & Rides'.	On-going
	41	Cycle maps	Promoting Travel Alternatives	Promotion of cycling	2018 and 2019	NCC; DfT funding	Increased cycling trips		 Greater Nottingham cycling maps reviewed during 2018, updated and available as a leaflet and online Cycling maps to be reviewed again in 2019 	Complete 2019 and on-going
	?	Cycle to work Scheme	Promoting Travel Alternatives	Promotion of cycling	2018/19	BBC	Increased cycling trips	Reduced Emissions	•Cycle to work Scheme – to assist and give tax relief on bike purchases for employees of BBC. UPDATE ONCE GOT DAA FROM PAYROLL	?
	?	Encouragin -g the use of Hybrid or Electric vehicles for BBC staff	Promoting Low Emission Transport	Other	2018/19	BBC	On-going take up of cleaner vehicles	Reduced Emissions	•To encourage employees of BBC to purchase hybrid vehicles and electric vehicles for their personal ad business use. UPDATE ONCE GOT DATA FROM PAYROLL	?
Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date	
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42	Marketing of cycling	Promoting Travel Alternatives	Promotion of cycling	2010 and 2017	BBC	In Broxtowe district there has been a 30% increase in cycling between 2010 and 2014	Reduced Emissions of N02 and PM	 Cycling in Broxtowe has increased by 12% between 2010 and 2017. UPDATE New cycle stands were installed at Beeston Train station and in Eastwood and Beeston Town Centres. Improved more stands Kimberley Leisure Centre and Council Offices. Develop and promote the Broxtowe Cycle Quest 2016 and 2017, which includes 8 routes in Broxtowe. Promoted through social media and Broxtowe Matters to every household in the borough. As a follow on from the TravelRight project in Broxtowe two cycle centres will be kept open until September 2017 being run by Ridewise Ltd. Hi Vis slap bands and rucksack covers have been given out at events. Cycle security events and locks have been given away in Beeston Produce and promote Broxtowe Cycling Map. 	On-going Complete Complete Complete Complete Complete	
43	Marketing of walking	Promoting Travel Alternatives	Promotion of walking	On- going	NCC	Increased walking trips		 Marketing of walking is undertaken in a variety of formats for both commute and leisure trips. Various NCC campaigns have been undertaken including 'walk week', 'Notts Routes & Rides'. 		
44	Marketing of walking	Promoting Travel Alternatives	Promotion of walking	On- going	BBC	Increased walking trips	Reduced Emissions of N02 and PM	 Develop Broxtowe Country Trail and promote it. BBC promote walking for health programmes Promotion of Erewash Valley Trail and other local walks. 	Complete Complete Complete	

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
45	Pedestrian infrastructu re improveme nts	Transport Planning and Infrastructur e	Other	On- going	NCC/BBC	Increased walking trips	Reduction in NO2 and PM emissions	 Pedestrian improvements developed and delivered as part of the annual integrated transport programme. Funding also secured to deliver improvements through the planning process. Potential barrier: Lack of future funding 	On-going
46	Review of off-street car parking charging	Traffic Manageme nt	Workplace Parking Levy, Parking Enforcem ent on highway	2019	BBC	Restrain average journey times in the morning peak to a 1% increase per year	Reduction in NO2 and PM emissions	 BBC is currently consolidating all of their Off-Street Parking Orders into one Order which will be made legal in 2020 Charges will also be reviewed on an adhoc basis with the next review being due in 2020 for the 2020/21 charges. This review will also include the use of electric vehicle charging points. 	2020 2020
47	Flexible working arrange -ments	Promoting Travel Alternatives	Encourage / Facilitate home- working	2010 and 2019	NCC/BBC	Restrain average journey times in the morning peak to a 1% increase per year	Reduction in NO2 and PM due to employees not commuting	 NCC operates flexible working arrangements for all its staff BBC New Ways of Working was introduced in 2019, which allows and encourages employees to work from home when practical to do so. 	On-going Complete

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
48	Workplace travel plans	Promoting Travel Alternatives	Workplace Travel Planning	On- going	BBC planning/ NCC	Restrain average journey times in the morning peak to a 1% increase per year	0.2µg/m ³	 Broxtowe Part 2 of the Local Plan (2018-2028), which includes Policy 26 on Travel Plans, was adopted in 2019. It is expected in this policy that all planning applications for large development sites (10 or more dwellings or 1,000 square metres or more gross floor space) must include a travel plan. BBC and NCC have a travel plan BBC has undertaken a review of the Councils travel plan by reviewing Lease cars, car allowances and work place parking. Produced a transport map specifying the modes of transport the organisation considers acceptable if other modes or transport are not suitable. Feasibility study of having bus card/Tickets for employee use. 	Complete Complete Complete
49	NCC car pool vehicles	Alternatives to private vehicle use	Car Clubs	2016/17	NCC	Restrain average journey times in the morning peak to a 1% increase per year	0.2µg/m ³	 NCC upgraded its pool vehicles to lower emission diesel vehicles 	Complete

Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
50	Low emission vehicle procureme nt	Promoting Low emission transport	Company vehicle Procureme nt - prioritising uptake of low emission vehicles	2017, 2019 and2020	BBC	Reduced emissions	Reduction in NO2 and PM due to cleaner vehicle technology and the procurement oft two electric fleet vehicles.	 All new fleet vehicles at BBC are Euro6 emissions complaint. There are 90+ fleet vehicles and they are on a 10 year replacing rolling programme. BBC has purchased three new Euro 6 vehicles in 2017/2018 replacing three older vehicles. Two new Euro 6 vehicles purchased in 2019 / 2020 BBC have procured two electric vans in 2019 Subject to satisfactory trials another two vehicles will be purchased in 2020. 	2024 Complete Complete Complete 2020
51	Eco-driver training sessions	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2012	NCC	Reduced emissions	Reduction in NO2 and PM due to improved driving efficiency.		Complete
52	Fleet vehicle tracking system	Vehicle Fleet Efficiency	Driver Training and ECO driving aids	2015- 2017	BBC/NCC	Reduced emissions	Reduction in NO2 and PM due to improved driving efficiency and efficient routes.	 All BBC and NCC fleet vehicles are fitted with a vehicle tracking system, which records vehicle speed and idling time. A review of the journeys undertaken will ensure that if necessary measures can be implemented e.g. staff training, to improve fleet efficiency. 	Complete Complete
53	Zoning of refuse collections	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2016- 2017	BBC	Reduced emissions	Reduction in NO2 and Particulate Matter as there is one less fleet vehicle used.	 A review of the refuse collection areas at BBC to enable the areas to be zoned to ensure that the collection rounds are within the designated zone, which reduces the amount of non-productive travelling time. Update - The Refuse round restructure is now complete and we have reduced the fleet size by one vehicle. 	Complete

	Mea sure No.	Measure	EU Category	EU Classificati on	Date Measure Introduced	Organisation involved and funding source	Key Performance Indicator and reduction in pollutant	Reduction in Pollutant/Emission from Measure	Progress to Date, comments / barriers of implementation	Estimated Completion Date
	54	Integrated ticketing	Transport Planning and Infrastructur e	Other	2014/15	NCC/NCiC/ PT operators	Increased passenger transport patronage		 Integrated ticketing strategy developed in 2014/15. New smartcard platform introduced in 2014. Robin Hood card scheme introduced in 2015 Further smartcard/contactless improvements being developed 	On-going
-	55	Personalis ed travel planning	Promoting Travel Alternatives	Personalise d Travel Planning	2016/17	NCC/AECOM	Restrain average journey times in the morning peak to a 1% increase per year		 Personalised Travel Planning undertaken in Beeston during 2016/17 No DfT funding currently available 	Complete On-hold.
age 73	56	Web based journey planners	Public Information	Via the Internet		NCC	Increased walking/cyclin g/ passenger transport trips		 Nottinghamshire is part of the national, multi-modal Traveline journey planner Web links to the Traveline site are publicised and available from the County Council's website. Implementation on-going 	On-going

BBC= Broxtowe Borough Council, **NCC**= Nottinghamshire County Council, **HE** = Highways England, **NCiC**= Nottingham City Council, **DfT** = Department for Transport

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

NOTE - MAKE REFERENCE TO THE PUBLIC HEALTH OUTCOMES FRAMEWORK, AND THE LOCAL INDICATOR FOR PM2.5 IN THE DISTRICT. THE COUNCIL MAY WISH TO CONSIDER COMPARING THE '3.01 - FRACTION OF MORTALITY ATTRIBUTABLE TO PARTICULATE AIR POLLUTION INDICATOR' VALUE FOR BROXTOWE TO NEARBY LAS AND NATIONAL INDICATOR VALUES

However, as previously mentioned in this report it must be noted that research has shown that there is significant harm to health at concentrations of Particulate Matter well below the current EU and UK limit values.

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.

As BBC does not currently monitor $PM_{2.5}$ the only methods that can be used to try and determine what the potential levels of $PM_{2.5}$ in the Borough are is to review the nearest relevant Automatic Urban and Rural Network (AURN) site which monitors $PM_{2.5}$ and to identify the modelled background levels for the Borough from Defra's webpages.

The nearest AURN site is in Nottingham City and for 2019 the annual mean concentration is $10.84\mu g/m^3$. The modelled background level provided by Defra for the Borough of Broxtowe are predicted to be between $8\mu g/m^3$ and $11\mu g/m^3$ for 2019, with the annual mean for 2019 being $9.73\mu g/m^3$. The modelled background concentrations are shown to be in the higher range along the M1 Motorway, The background maps are shown in Appendix G.

The Air Quality Objective (AQO) for $PM_{2.5}$ is an annual mean of $25\mu g/m^3$. However, the World Health Organisation guideline value are more stringent for $PM_{2.5}$, as it is currently $10\mu g/m^3$ (although it is believed that the guideline value will be reviewed in the future) therefore the modelling results show that parts of the Borough are exceeding WHO guideline but meeting the AQO. Therefore, BBC are working towards reducing the $PM_{2.5}$ levels by taking the following measures:

- Ensuring that dust management plans are requested during the planning application stage for all sites that involve large scale demolition and building works.
- To ensure that best practicable means of dust control measures are being used regardless of how large the development is. These measures can include the use of bowsers, road sweepers and dust suppression to prevent 'trackout'. Also minimise dust generating activities on dry windy days and if there are stockpiles ensure they are covered to prevent wind-whipping.
- Ensuring that developers are carrying out dust suppression monitoring on site at large development sites.
- Ensuring that water suppressants are in use when Nibblers and mobile crushers are on site.
- Educating the public in matters that contribute to air quality e.g. not having bonfires.
- Educate and advise the public about using exempt appliances with the correct fuel for that appliance in BBCs smoke control areas.
- Enforcing the Clean Air Act 1993 and the Environmental Protection Act 1990 where necessary to minimise the risk of particulates becoming air borne.
- To continue to manage, advice and enforce the Pollution Prevention and Control Regulations 1999 and the Environmental Permitting (England and Wales) Regulations 2010 on permitted processes when necessary
- To encourage, support and promote sustainable travel within the Borough by working with a variety of organisations and neighbouring local authorities.
- To continue to promote green travel e.g. walking, cycling, low emissions/ electric vehicles and the tram network.

- To continue to support bus companies and taxis that operate within the Borough to reduce emissions.
- To continue to review suitable research methods for reducing air quality levels for particulate matter e.g. the use of vegetation.
- Promote and encourage the use of the final version of the "EMAQN Air Quality and Emissions Mitigation: guidance for developers" document.
- To assist and advice consultants working on the proposed HS2 project. This ensures that suitable dust control measures will be used throughout the project.

2.4 Update on Air Quality Action Plan

NOTES: DISCUSS THE AQMA, SMART NETWORKS DATES, OUT OF OUR CONTROL ETC..

COMMENTS FROM DEFRA FROM PREVIOUS REPORTS MENTION THESE

- THE BOROUGH HAS MADE SOME GOOD PROGRESS TOWARDS DEVELOPING THEIR AQAP AND IMPLEMENTING AQAP MEASURES IN THE LAST YEAR, WHICH IS COMMENDED.
- THE BOROUGH HAS STATED THAT THEY WILL CONTINUE TO MONITOR AND KEEP THE AQMA UNDER REVIEW WHILST THE EFFECTS OF THE SMART MOTORWAY SCHEME ARE BEING DETERMINED, AND UNTIL A SIGNIFICANT DECREASING TREND CAN BE DEMONSTRATED. THIS IS SUPPORTED, AND IT IS SUGGESTED THAT THE AQMA COULD BE CONSIDERED FOR REVOCATION AFTER DEMONSTRATING COMPLIANT NO₂ CONCENTRATIONS BELOW 36 μG/M³ FOR THREE CONSECUTIVE YEARS. – BBC WILL CONTINUE MONITORING AT THIS SITE AND WILL CONSIDER REVOCATION OF THE AQMA IF IT IS CONSISTENTLY BELOW THE ANNUAL MEAN FOR FIVE OR MORE CONSECUTIVE YEARS. SEE CHAPTER 3.2.1 OF THIS REPORT FOR THE RESULTS.
- ★ THERE HAVE BEEN NO EXCEEDANCES OF NATIONAL AIR QUALITY OBJECTIVES IN 2018 AND CONCENTRATIONS IN THE TROWELL AQMA CONTINUE TO FALL. THE COUNCIL HAVE STATED THAT THEY PLAN TO IMPLEMENT MEASURES TO ENSURE NO₂ CONCENTRATIONS ARE BELOW THE AQOS AND WHEN LONG-TERM COMPLIANCE IS ACHIEVED THEY WILL REVOKE THE AQMA. IF CURRENT NO₂ TRENDS CONTINUE AND CONCENTRATIONS DECLINE, THEN THE REVOCATION OF THE AQMA IS STRONGLY SUPPORTED.

NOTE: PUT IN TABLE OF FIGURES HERE

NOTE: TALK ABOUT EMAIL CONVERSATION WITH LAQM, SAY UPDATING LAQM ON FIGURES.

MEASURES WE ARE CURRENTLY DOING FOR THE BOROUGH

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

3.1 Summary of Monitoring Undertaken

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

3.1.1 Automatic Monitoring Sites

BBC does not currently utilise any automatic air quality monitoring within the Borough

3.1.2 Non-Automatic Monitoring Sites

BBC undertook non- automatic (passive) monitoring of NO_2 at 43 sites during 2019. Table A.1 in Appendix A shows the details of the sites. There were no changes to the site locations in 2019.

Maps showing the location of the monitoring sites are provided in Appendix E. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. "annualisation" and/or distance correction), are included in Appendix D.

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 D.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.2 in Appendix A compares the ratified and adjusted monitored Nitrogen Dioxide (NO₂) annual mean concentrations for the past 5 years with the air quality objective of $40\mu g/m^3$.

For diffusion tubes, the full 2019 dataset of monthly mean values are provided in Table B.1 of Appendix B.

Nitrogen Dioxide Diffusion Tube Monitoring Results

The results from the bias corrected NO₂ diffusion tube monitoring have shown that there are no exceedences of the $40\mu g/m^3$ air quality objective at any of the 43 monitoring locations within the Borough for 2019.

Although there are no exceedances of the NO₂ objective there is still one AQMA within the Borough, which is situated in Trowell. The monitoring results from the diffusion tubes sited in the AQMA will be discussed in greater detail below.

As well as discussing the results from the recently revoked AQMA in Nuthall and the current AQMA. The following chapter will discuss areas of concern within the Borough where the air quality levels are higher than average, but still within the Air Quality Objective. This is to determine whether any trends are developing, which will allow suitable measures if necessary, to be put in place to reduce the likelihood of an exceedance in the future.

Revoked AQMA in Nuthall

There are three diffusion tube sites located on Nottingham Road in Nuthall that are located within the recently revoked AQMA in Nuthall. The results below show that since 2012 the levels of NO_2 are consistently below the objective of $40\mu g/m^3$ for all three sites.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)										
	2012	2013	2014	2015	2016	2017	2018	2019			
BX01 or 33	31	33	29	28	29	29	23	25			
BX05 or 34	32	33	32	29	29	27	28	26			
BX13 or 35	35	33	34	34	32	34	30	30			

Table 3.1 -	Results fo	r the Revoked	AQMA in	Nuthall 2012	- 2019
	- Nesulis IO	I LITE INEVOREU		Nuthan 2012	- 2013.

Monitoring will continue to be undertaken at these three sites and the results will be reported in the 2021 Air Quality Annual Status Report.

AQMA in Trowell

Since January 2016 there are now two monitoring sites within the AQMA in Trowell as opposed to just one site. They are situated between Junction 25 and 26 of the M1 and are monitoring NO_2 levels from the M1 Motorway. The tubes are sited on the façade of properties that are the closest to the M1.

The original monitoring site is on the façade of a property on Iona Drive, which has been there since 2011. The new monitoring site is on the façade of a property that is in Tiree Close (See Appendix F for the map of the AQMA and the tube locations). The diffusion tube monitoring results from 2012 to 2019 are shown below.

Site ID		NO ₂ Annual Mean Concentration (μg/m ³)									
	2012	2013	2014	2015	2016	2017	2018	2019			
18	-	-	-	-	34	33	28	28			
BX11 or 19	42	39	38	42	38	37	32	31			

Table 3.2 – Results for AQMA in Trowell 2012 – 2019.

Although the 2016 and the 2017 NO_2 results for both sites in the AQMA are below the air quality objective, the 2015 data did show an increase in NO_2 . This may have been as a result of the Smart Motorway scheme on the M1 between junctions 28 and 31 (junctions 25 to 28 were completed in 2010), which had just been opened at the time of writing the 2016 report. Therefore it was considered that this may have caused congestion further South, which could have had an effect on increasing the air quality levels in 2015.

However, the results do show that there is a decreasing trend (if the 2015 data is seen as an anomaly due to the Smart Motorway Scheme), as the NO₂ levels have reduced by $6\mu g/m^3$ from 2016 to 2019 for site 18 and $7\mu g/m^3$ from 2016 to 2019 for site 19. BBC will continue to monitor NO₂ levels in this area and work alongside

Highways England to improve air quality levels. Please view Section 2.4 of this report on an Update on the Air Quality Action Plan for this AQMA.

A610/B600 Nuthall Island

Since 2016 there have been two new sites for monitoring the air quality levels on the Nuthall Island (Site's 36 and 37). The reason for changing the origional site (BX 22) was due to the diffusion tube being located less than 1m from Nottingham Road which was very near to the A610/B600 Nuthall Island but not near the residential properties. Therefore, the site was not a true representation of the levels that receptors are receiving at their properties so the site was relocated to the façade of a residential property in January 2016 (See Appendix H for the Map of the roundabout and the current monitoring locations).

In January 2016 a second site was also chosen to determine what the NO_2 levels are on a residential property that is situated on the opposite side of the roundabout to Site 36 where the traffic is leaving Nottingham City and travelling into the Borough of Broxtowe. The results from 2012 to 2015 are shown for the 'old' site and the 2016 to 2019 results for the 'new' sites are shown below.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)										
	2012	2013	2014	2015	2016	2017	2018	2019			
BX 22	42	41	39	41	-	-	-	-			
36	-	-	-	-	35	35	33	32			
37	-	-	-	-	32	30	29	26			

Table 3.3	– Results	for Nuthall	Island	2012 - 2019.
10010 010	noouno	ioi matman	Iolalia	2012 2010.

The results above show that that the origional site did not provide a true representation of NO₂ levels at the façade of the properties. However, the two 'new' sites are showing that the levels are below the air quality objective by $8\mu g/m^3$ for site 36 and $14\mu g/m^3$ for site 37 in 2019 and are showing a decreasing trend.

BBC will continue to monitor NO₂ levels at these sites and provide an update in the 2021 ASR. BBC will continue to work alongside Nottinghamshire County Council to improve air quality levels.

Bramcote Island, Derby Road, Bramcote

Since January 2016, increased monitoring has been undertaken at this location due to the original site showing exceedances of the air quality objective of 40µg/m³. The original site (BX04) was discontinued and relocated in January 2016 to a neighbouring property at a more suitable height and nearer to Bramcote Island (Site 41). An additional site was also choosen to determine whether the concentration reduces further away from the roundabout (Site 40). Both sites are on the façade of properties on Derby Road. (See Appendix I for the Map of the roundabout and the monitoring locations).

As discussed in the 2016 ASR, the diffusion tube results were believed to be over the objective level for several years as there were a number of parallel traffic schemes which were being undertaken in the Borough and also within Nottingham City. Therefore as suspected, the traffic schemes affected the results when comparing the past results to the results since 2016.

Site ID	NO ₂ Annual Mean Concentration (µg/m ³)										
	2012	2013	2014	2015	2016	2017	2018	2019			
BX 04	42	38	42	41	-	-	-	-			
40	-	-	-	-	38	33	34	32			
41	-	-	-	-	37	36	34	31			

Table 3.4 -	Results for	Bramcote	Island	2012 - 2019.

The table above shows that in 2019 Site 40 is $32\mu g/m^3$, which is a reduction of $2\mu g/m^3$ and Site 41 is $31\mu g/m^3$, which is a reduction of $3\mu g/m^3$ in comparison to the 2018 results.

Although this is an overall downward trend for both sites from 2016 and they are below the objective level. There is a slight increase by $1\mu g/m^3$ at Site 40 in 2018. This

could have been due to localised roadworks that were taking place on the A52, which has resulted in an increase in stationary traffic near to this site. However, in 2019 this site has a measured reduction of $2\mu g/m^3$ in comparison to 2018 figures which further indicates that theslight increase was due to localised roadworks which were completed in 2018.

BBC will continue to monitor and report on the NO₂ levels in this area, to note any works that are being undertaken and to continue to work alongside Highways England to improve the air quality levels in this area.

Town Street, Bramcote.

In December 2016 a review was undertaken of the mornitoing network and as Town Street is often used as a 'rat run' in rush hour to avoid the A52 a decision was made to monitor at this location.

The new site started in January 2017 and the exact location was picked as the street is narrowed due to resdients parking outside their properties, which tends to cause a 'bottle neck' situation in rush hour (See Appendix J for the Map identifying the monitoring location). The siting of the tube has been choosen so that it is parallel with the façade of a nearby residential property as there were no suitable downpipes to attach it to the façade of the property.

Site ID	NC	D₂ Annual Mean C	oncentration (µg/m ³)
	2016	2017	2018	2019
48	-	38	36	30
56	-	-	25	23

Table 3.5 – Resu	Its for Town	Street	2016 - 2019.

Above is the result for the sites for 2017 to 2019. The result for 2017 is $38\mu g/m^3$. The result at site 48 for 2019 is $30\mu g/m^3$ which is a reduction of $8\mu g/m^3$ in comparison to the 2017 results, which shows a downward trend.

Due to the result in 2017, a decision was made to start monitoring at a second location on Town Street (Site 56) in 2018 (the tube is sited on the façade of a house that is near to the Bramcote Island end of Town Street). The additional site in 2018 was to determine whether there is a potential issue along all of Town Street, or just at the site where there is a bottle neck. The result at site 56 for 2019 is $23\mu g/m^3$ which is a reduction of $2\mu g/m^3$ in comparison to the 2018 result. This enforces the theory that the results are higher on site 48 due to the 'Bottle neck' situation.

BBC will continue to monitor NO₂ levels at these sites and provide an update in the 2021 ASR. BBC will continue to work alongside Nottinghamshire County Council to improve air quality levels.

The Results and Trends for the Thirteen Monitoring Sites 2013 - 2018.

As mentioned previously in Chaper 2.2 of this report. Defra requested that trend graphs and comparisons are made for the thirteen sites that have been continuously monitored since 2013. See Appendix C for the trend graph for all thirteen sites.

The trend graph in Appendix C shows that out of the thirteen sites, twelve of the sites are showing an overall downward trend since 2013 (Sites 1, 5, 7, 19, 20, 22, 33, 34, 35, 38,39 and 43). The one remaining site (site 31) has only shown a very slight downward trend. Site 31 will therefore be discussed in greater detail below.

Since 2013, Sites 1 & 33 have shown an overall downward trend but in 2019 both of these sites have shown a slight increase between $1\mu g/m^3$ and $2\mu g/m^3$ in comparison to 2018 results. Therefore these sites will be discussed in greater detail below.

Site 1 – Near 113 Wollaton Road, Beeston.

Since 2013, Site 1 has shown a downward trend until 2016 when there was a slight increase of $1\mu g/m^3$ in comparison to 2015 result. Then it has continued to reduce in 2017 and again in 2018. However in 2019 there has been a slight increase of $1\mu g/m^3$ in comparison to 2018 result. Overall since 2013 there has been a decrease

of $6\mu g/m^3$ with the highest concentration being $32\mu g/m^3$ it is currently $27\mu g/m^3$, which is comfortably below the air quality objective of $40\mu g/m^3$. This is one of the main roads into Beston town centre and is a busy road that is used by commuters. Road works have been undertaken on this road to improve the road surface which may have resulted in a localised slight increase of NO₂.

Site 31 – 15 Hayley Close, Kimberley

Since 2013, Site 31 has shown a slight downward trend overall between 2013 and 2019 as there has been a decrease of $6\mu g/m^3$ with the highest concentration being $32\mu g/m^3$ and the lowest concentration being $26\mu g/m^3$ in 2018. There have been fluctuatons at this site where the concentrations have increased or decreased slightly throughout this monitoring period. Although it must be noted that even with these fluctuations the concentrations are below the air quality objective of $40\mu g/m^3$.

In 2019 there has been an increase of $3\mu g/m^3$ in comparision to 2018 result. It is thought that this increase is due to the increased acitivity and vehicle movements on the former Beamlight site that is currently undergoing development and is situated near to this location.

This site will be closely monitored and an update will be provided in the ASR in 2021.

Site 33 – 19a Nottingham Road, Nuthall.

Since 2013, Site 33 has shown a downward trend until 2019 when there has been a slight increase of $2\mu g/m^3$ in comparision to 2018 result. Overall since 2013 there has been a decrease of $10\mu g/m^3$ with the highest concentration being $33\mu g/m^3$ and the lowest being $23\mu g/m^3$ it is currently $25\mu g/m^3$ which is below the air quality objective of $40\mu g/m^3$.

The reason for the slight increase is unknown as this is a co-location study with Site 34 which has not shown an increase. However, this site will be closely monitored and an update will be provided in the ASR in 2021.

The breakdown of the annual figures for each year from 2013 to 2019 can be viewed in Appendix A, Table A.2 of this report.

3.2.2 Particulate Matter (PM₁₀)

BBC does not currently monitor PM_{10} within the Borough. However, discussions are currently taking place with Nottinghamshire District and Borough Authorities and Nottinghamshire County Council, to collectively buy and maintain particulate monitors in the future. The outcome of this will be discussed in the air quality report for 2020.

3.2.3 Particulate Matter (PM_{2.5})

BBC does not currently monitor $PM_{2.5}$ within the Borough. However, discussions are currently taking place with Nottinghamshire District and Borough Authorities and Nottinghamshire County Council, to collectively buy and maintain particulate monitors in the future. The outcome of this will be discussed in the air quality report for 2020.

3.2.4 Sulphur Dioxide (SO₂)

Previous air quality reports have shown there are no relevant sources of Sulphur Dioxide within the Borough. Subsequently, the Council does not monitor for this pollutant

Appendix A: Monitoring Results

 Table A.1 – Details of Non-Automatic Monitoring Site.

	Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
	1	113 Wollaton Road, Beeston	R	452527	337313	NO ₂	Ν	0	1^	Ν	1.9
Page 8	50	309 Wollaton Road, Beeston	R	452114	338018	NO ₂	Ν	0	16^	Ν	1.7
88	2	166 Derby Road, Beeston	R	452091	338122	NO ₂	Ν	0	7^	Ν	1.8
	3	8 Queens Road East, Beeston	R	453659	337412	NO ₂	Ν	0	12^	Ν	1.8
	4	226 Queens Road, Beeston	R	453361	336627	NO ₂	N	0	6^	Ν	1.8
	51	36 Meadows Road, Beeston	R	453537	336100	NO ₂	N	0	4^	Ν	1.7

	Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
	52	228 Station Road Beeston	R	453287	336349	NO ₂	Ν	0	4^	Ν	1.7
	5	Chilwell Olympia School, Beeston	UB	451782	335320	NO ₂	Ν	0	104^	Ν	1.9
	7	31 Hickton Drive, Chilwell	R	450756	334328	NO ₂	Ν	0	10^	Ν	1.9
Page 89	53	1 Calverton Close, Chilwell	R	450360	334982	NO ₂	N	0	5^	Ν	1.7
	8	The Manor Pub, 350 Nottingham R Road, Toton		450422	334243	NO ₂	Ν	0	5^	Ν	1.8
	9	Toton branch Surgery, 2 Banks Road, Toton	R	449876	334804	NO ₂	Ν	0	8^	Ν	1.8

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	Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
	10	1 Katherine Drive, Toton	R	449748	335472	NO ₂	N	0	13^	Ν	1.7
	11	269 Stapleford Lane, Toton	R	449694	335501	NO ₂	N	0	7^	Ν	1.8
	12	Lamppost, Stapleford Lane, Toton	R	449615	335664	NO ₂	N	0	2^	Ν	1.9
	45	209 Toton Lane, Stapleford	R	449467	336220	NO ₂	N	0	16^	Ν	1.8
	15	George Spencer Academy, Stapleford	R	449406	336135	NO ₂	N	0	9^	Ν	1.9
-	13	George Spencer Lower School, Toton	R	449266	336075	NO ₂	N	0	16^	Ν	1.8

Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
16	24 Brampton Drive, Stapleford	R	449516	336216	NO ₂	N	0	11^	Ν	1.7
54	195 Derby Road, Stapleford	R	448467	336591	NO ₂	N	0	4^	Ν	1.8
17	Lamppost Church Street, Stapleford	R	448890	337190	NO ₂	N	0	3^	Ν	1.8
55	12 Ilkeston Road, Stapleford	R	449814	338471	NO ₂	N	0	11^	Ν	1.8
18	20 Tiree Close, Trowell	R	448560	338889	NO ₂	Y	0	26	Ν	1.7
19	15 Iona Drive, Trowell	R	448586	339023	NO ₂	Y	0	23	Ν	1.9
20	30 Derbyshire Avenue, Trowell	R	448652	339652	NO ₂	N	0	39	Ν	1.9

Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
22	81 Nottingham Road, Trowell	R	448832	340098	NO ₂	Ν	0	33	Ν	1.8
44	32 Mansfield Road, Eastwood	R	446509	347091	NO ₂	Ν	0	2^	Ν	1.8
27	Sun Inn Pub, 6 Derby Road, Eastwood	R	446465	346985	NO ₂	Ζ	0	6^	Ν	1.8
30	560 Nottingham Road, Giltbrook	R	448544	345241	NO ₂	Ν	0	3^	Ν	1.9
31	15 Hayley Close, Kimberley	R	448826	344883	NO ₂	Ν	0	11^	Ν	1.9
32	59b Main Street, Kimberley	R	450122	344658	NO ₂	Ν	0	5^	Ν	1.8
33	19a Nottingham Road, Nuthall*	R	451631	344526	NO ₂	Ν	0	42	N	1.7

Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
34	19a Nottingham Road, Nuthall*	R	451631	344526	NO ₂	N	0	42	Ν	1.7
35	20 Nottingham Road, Nuthall	R	451728	344440	NO ₂	N	0	32	Ν	1.9
36	113 Nottingham Road, Nuthall	R	452232	344033	NO ₂	N	0	20^	Ν	1.7
37	114 Nottingham Road, Nuthall	R	452331	343910	NO ₂	N	0	27^	Ν	1.7
38	Opp Sherwin Arms, Derby Road, Bramcote	R	450389	337866	NO ₂	N	2	1^	Ν	1.8
39	9 Bembridge Court, Bramcote	R	450434	337781	NO ₂	N	0	6^	Ν	1.6
56	10 Town Street, Bramcote	R	450570	337851	NO ₂	N	0	10^	Ν	1.9

	Sit e ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQM A?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m)) ⁽²⁾	Tube co- located with a Continuous Analyser?	Heig ht (m)
	40	153 Derby Road, Bramcote	R	450632	337929	NO ₂	Ν	0	14^	Ν	1.7
	41	169 Derby Road, Bramcote	R	450555	337909	NO ₂	Ν	0	11^	Ν	1.8
Pa	48	Near 73 Town Street, Bramcote	R	450817	337592	NO ₂	Ν	0	2	Ν	1.8
ge 94	43	Broxtowe Borough Council Offices	UB	452733	336962	NO ₂	Ν	0	10^	Ν	1.8

Notes:

(1) Om if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

(^) All distance to kerb to nearest road relate to the M1 which is the primary source of NO₂ throughout the borough unless indicated using the ^ symbol

(*) Co-located tubes

Table A.2 – Annual Mean NO2 Monitoring Results

	Site	X OS Grid	Y OS Grid	Site	te Monitoring Capture for Capture		NO ₂ /	Annual (µ	Mean C g/m ³) ⁽³⁾	oncentr ⑷	ation	
	ID	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019
	1	452527	337313	R	DT	100	100	29	30	28	26	27
	50	452114	338018	R	DT	100	100	-	-	-	28	29
	2	452091	338122	R	DT	100	100	-	31	29	27	27
	3	453659	337412	R	DT	100	100	-	26	22	22	23
5	4	453361	336627	R	DT	100	100	-	30	28	26	26
	51	453537	336100	R	DT	83	83	-	-	-	18	16
	52	453287	336349	R	DT	100	100	-	-	-	23	24
	5	451782	335320	UB	DT	92	92	20	20	19	17	16

Site	X OS Grid	Y OS Grid	Site	Monitoring	Valid Data Capture for	Valid Data	NO ₂ /	Annual (µ	Mean Co g/m ³) ⁽³⁾	oncentr ⑷	ation
ID	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019
6	451482	334936	R	DT	-	-	-	26	25	-	-
7	450756	334328	R	DT	100	100	26	27	26	23	23
53	450360	334982	R	DT	100	100	-	-	-	19	20
8	450422	334243	R	DT	92	92	-	31	29	27	24
9	449876	334804	R	DT	100	100	-	24	21	22	22
10	449748	335472	R	DT	92	92	-	26	26	21	22
11	449694	335501	R	DT	100	100	-	30	29	26	28
12	449615	335664	R	DT	83	83	-	29	25	24	20
13	449266	336075	R	DT	100	100	-	31	34	26	25

	Site	X OS Grid	Y OS Grid	Site	Monitoring	Valid Data Capture for	Valid Data	NO ₂ /	Annual (µ	Mean Co g/m ³) ⁽³⁾	oncentr ⑷	ation
	ID	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019
	45	449467	336220	R	DT	100	100	-	28	29	26	27
	15	449406	336135	R	DT	92	92	-	36	26	28	29
	16	449516	336216	R	DT	100	100	-	28	26	26	25
	54	448467	336591	R	DT	100	100	-	-	-	30	30
2 2 0 7	17	448890	337190	R	DT	92	92	-	37	35	33	33
	55	449814	338471	R	DT	100	100	-	-	-	25	24
	18	448560	338889	R	DT	100	100	-	34	33	28	28
	19	448586	339023	R	DT	100	100	42	38	37	32	31
	20	448652	339652	R	DT	100	100	26	26	24	34	23

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Site	X OS Grid	Y OS Grid	Site	Monitoring	Valid Data Capture for	Valid Data	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}							
ID	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019			
22	448832	340098	R	DT	100	100	26	27	24	24	24			
23	448195	342287	R	DT			-	24	22	-	-			
24	448230	344446	R	DT			-	26	24	-	-			
44	446509	347091	R	DT	100	100	-	36	33	34	32			
27	446465	346985	R	DT	92	92	-	26	24	24	20			
28	44601	346920	R	DT	-	-		25	21	-	-			
30	448544	345241	R	DT	92	92	-	27	28	23	22			
31	448826	344883	R	DT	100	100	30	30	32	26	29			
32	450122	344658	R	DT	100	100	-	30	29	29	29			

	Site	X OS Grid	Y OS Grid	Site	Monitoring	Valid Data Capture for	Valid Data	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}							
	ID	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019			
	33	451631	344526	R	DT	100	100	28	29	29	23	25			
	34	451631	344526	R	DT	100	100	29	29	27	28	26			
	35	451728	344440	R	DT	100	100	34	32	34	30	30			
	36	452232	344033	R	DT	100	100	-	35	35	33	32			
22200	37	452331	343910	R	DT	100	100	-	32	30	29	26			
	38	450389	337866	R	DT	100	100	31	34	30	30	27			
	39	450434	337781	R	DT	100	100	28	31	26	27	25			
	56	450570	337851	R	DT	100	100	-	-	-	25	23			
	40	450632	337929	R	DT	100	100	-	38	33	34	32			

Site ID	X OS Grid	Y OS Grid	Site	Monitoring	Valid Data Capture for	Valid Data	NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)}							
	(Easting)	(Northing)	Туре	Туре	Monitoring Period (%) ⁽¹⁾	2019 (%) ⁽²⁾	2015	2016	2017	2018	2019			
41	450555	337909	R	DT	100	100	-	37	36	34	31			
48	450817	337592	R	DT	100	100	-	-	38	36	30			
43	452733	336962	UB	DT	100	100	21	21	18	19	18			

votes: Exceedances of the NO₂ annual mean objective of $40\mu g/m^3$ 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 Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details

R = Roadside

UB = Urban Background

DT= Diffusion Tube

☑ Diffusion tube data has been bias corrected

☑ Annualisation has been conducted where data capture is <75%

Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

Example Trend Chart illustrated below. It is recommended that, where an AQMA is present, separate charts are provided for each AQMA. Sites outside of AQMAs also to be shown. Delete if not required>

NOTE: DO TREND CHARTS FOR ALL SITES



Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2019

				NO ₂ Mean Concentrations (μg/m ³)														
															Annual Mean			
Site ID Pa	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.93) and Annualised (1)	Distance corrected to Nearest Exposure (²)	
∋Ďt	452527	337313	32	42	32	25	24	23	22	26	28	28	32	32	29	27	-	
الم 0	452114	338018	54	57	34	24	24	22	16	18	24	34	30	38	31	29	-	
رگر	452091	338122	35	42	25	27	22	22	22	29	25	30	29	34	28	27	-	
3	453659	337412	33	31	22	28	21	21	15	18	23	27	35	24	25	23	-	
4	453361	336627	38	40	31	21	21	19	20	25	21	29	34	33	28	26	-	
51	453537	336100	31	28			17	18	16	21	24	26	32	25	17	16	-	
52	453287	336349	40	36	27	22	17	19	18	17	23	25	37	33	26	24	-	
5	451782	335320		25	19	14	12	13	12	15	18	20	29	25	17	16	-	
7	450756	334328	35	35	24	23	18	18	16	20	22	26	37	28	25	23	-	
53	450360	334982	31	26	21	18	18	16	14	16	20	22	30	24	21	20	-	
8	450422	334243	37	36	30		23	23	22	26	29	29	32	28	26	24	-	
9	449876	334804	31	30	23	25	20	17	16	17	22	23	31	23	23	22	-	

	X OS Grid Ref (Easting)		NO ₂ Mean Concentrations (μg/m ³)														
																Annual Mea	n
Site ID		Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov 31	Dec	Raw Data	Bias Adjusted (0.93) and Annualised	Distance corrected to Nearest Exposure (²)
10	449748	335472		38	29	16	20	20	19	25	26	26	31	31	23	22	-
11	449694	335501	36	37	34	24	28	27	24	26	30	29	32	31	30	28	-
12	449615	335664	38	36	21	25		20	16	18	24	27		25	22	20	-
Д 3	449266	336075	36	31	27	31	23	23	18	19	26	27	34	24	29	27	-
ağ	449467	336220	36	41	26	24	23	23	22	22	29	31	35	33	35	29	-
1 5	449406	336135	38	42	33	32	31		29	36	36	41	38	38	31	25	-
G 36	449516	336216	34	39	25	28	21	22	19	25	25	30	35	26	27	25	-
54	448467	336591	38	41	48	35	26	24	21	25	25	34	39	29	32	30	-
17	448890	337190	44	47	43	24	27	23	27	34	39	36	42		35	33	-
55	449814	338471	33	38	24	22	20	21	16	22	25	28	35	23	26	24	-
18	448560	338889	39	37	38	21	27	21	25	32	31	29	35	30	31	28	-
19	448586	339023	42	45	38	19	30	29	27	35	36	32	36	32	33	31	-
20	448652	339652	28	30	22	30	24	23	20	19	20	26	31	26	25	23	-
22	448832	340098	26	36	22	30	20	25	23	24	24	28	28	25	26	24	-
44	446509	347091	39	43	38	28	32	27	28	28	37	36	41	31	34	32	-

			NO ₂ Mean Concentrations (μg/m ³)														
																Annual Mea	n
Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.93) and Annualised	Distance corrected to Nearest Exposure (²)
27	446465	346985	32	30	24	27	23	22	20	19		27	37	40	22	20	
30	448544	345241	39	36	30	23	21	21	20	23		30	38	26	24	22	-
ل ط	448826	344883	38	37	37	23	23	27	28	32	30	29	34	31	31	29	-
a 0 0 0 0	450122	344658	38	38	34	36	28	26	25	24	29	32	38	25	31	29	-
3 3	451631	344526	31	37	25	30	24	25	25	23	26	27	35	31	27	25	-
420	451631	344526	32	36	32	27	20	23	22	26	26	32	38	28	28	26	-
35	451728	344440	36	40	39	19	27	26	29	35	34	34	33	30	32	30	-
36	452232	344033	39	49	40	25	26	25	34	37	33	39	39	37	34	32	-
37	452331	343910	34	32	34	29	29	23	22	23	29	29	35	21	28	26	-
38	450389	337866	36	37	30	34	23	24	22	23	28	26	37	25	29	27	26
39	450434	337781	32	34	25	36	25	25	21	21	28	28	31	23	27	25	-
56	450570	337851	35	30	27	20	22	23	17	23	24	25	34	22	25	23	
40	450632	337929	41	40	34	36	34	28	30	29	37	38	46	32	34	32	-
41	450555	337909	40	38	36	36	32	28	26	26	36	35	39	33	33	31	-
48	450817	337592	42	32	22	27	32	31	30	37	41	43	43	32	33	30	-
Broxtowe Borough Council

									NO ₂ M	ean C	oncen	tratio	ns (µg/	/m³)			
																Annual Mea	n
Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.93) and Annualised	Distance corrected to Nearest Exposure (²)
43	452733	336962	27	26	21	18	15	13	12	12	18	22	30	22	20	18	-

Notes:

Exceedances of the NO₂ annual mean objective of $40\mu g/m^3$ 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.

(a) Missing tubes

(b) Result not valid

☑ Local bias adjustment factor used

 \boxtimes National bias adjustment factor used

Annualisation has been conducted where data capture is <75%

☑ Where applicable, data has been distance corrected for relevant exposure

Appendix C: A Trend Graph for 13 Continuous Monitoring Sites from 2013 to 2019



Figure C.1 – Trend Graph of 13 Sites 2013 to 2019.

- Site ID 1 = 113 Wollaton Road, Beeston
- Site ID 5 = Chilwell Olympia School, Beeston
- Site ID 7 = 31 Hickton Drive, Chilwell
- Site ID 19 = 15 Iona Drive, Trowell
- Site ID 20 = 30 Derbyshire Avenue, Trowell
- Site ID 22 = 81 Nottingham Road, Trowell
- Site ID 31 = 15 Hayley Close, Kimberley
- Site ID 33 = 19a Nottingham Road, Nuthall
- Site ID 34 = 19a Nottingham Road, Nuthall
- Site ID 35 = 20 Nottingham Road, Nuthall
- Site ID 38 = Opposite Sherwin Arms, Derby Road, Bramcote
- Site ID 39 = 9 Bembridge Court, Bramcote
- Site ID 43 = Broxtowe Borough Council Offices

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

Nitrogen Dioxide Diffusion Tube Adjustment Information

BBC diffusion tubes are supplied and analysed by Gradko Ltd. Since April 2008 BBC has entered into a contract with Gradko along with all Nottinghamshire Local Authorities to ensure that any deviations within different laboratory practices are ruled out. This enables data to be easily compared between the County authorities. The tubes are prepared using a 20% solution of triethanolamine (TEA) in de-ionised water. The tubes are exposed for one month before being returned for laboratory analysis.

Diffusion Tube Bias Adjustment Factors

The national bias adjustment factor was used to bias correct the data. The adjustment factor specific to each year is shown below.

2019 Figures

The Review and Assessment (R&A) Helpdesk Database 2019 bias adjustment factor for Gradko 20% TEA in water tubes = 0.93. This figure is the average of 27 studies and was taken from Spreadsheet Version Number: 03/20.

Diffusion tube precision was good for 25 of the 27 studies used to derive the national bias adjustment factor. Tube precision is categorised as "good" where the coefficient of variation (CV) of triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10% (LAQM.TG(16)).

Annualisation

As the data capture was not below 75%, it was not necessary for the data to be annualised.

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Distance Correction

One site (Site 38) has been distance corrected to the nearest public exposure using the NO2 fall-off with distance calculator available on the LAQM website http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html .

B U R E A		Enter data into the pink cells
Step 1	How far from the KERB was your measurement made (in metres)?	1.6 metres
Step 2	How far from the KERB is your receptor (in metres)?	3 metres
Step 3	What is the local annual mean background NO $_2$ concentration (in $\mu g/m^3$)?	18 µg/m ³
Step 4	What is your measured annual mean NO $_2$ concentration (in $\mu g/m^3$)?	27 μg/m ³
Result	The predicted annual mean NO_2 concentration (in $\mu g/m^3)$ at your receptor	25.7 µg/m ³

Figure D.1 - Road Calculation to nearest Receptor for Site 38.

QA/QC Data for Non-Automatic Sites

Broxtowe Borough Council

The QA/QC procedure's that are followed when deploying diffusion tubes are:

- The diffusion tubes on arrival are labelled (including the travel blank), put back in a sealed bag then stored in a fridge until they are deployed.
- The diffusion tubes (including the travel blank) are removed from the fridge 10 minutes before undertaking the changeover.
- All of the diffusion tubes are deployed vertically in a spacer at each location and the date and time of their removal is recorded. The travel blank is not exposed e.g. the end cap is not removed.
- After all of the diffusion tubes have been changed over, they are then put back into the fridge until they are sent to the laboratory.

• The paperwork is then filled in and the diffusion tubes and the associated paperwork are sent to the laboratory for analysis.

Gradko

Gradko International (diffusion tube supplier and analyst) is United Kingdom Accreditation Service (UKAS) accredited; it is assessed annually for compliance to ISO 17025 and participates in other proficiency schemes.

Gradko International confirms that:

- Their procedures have been amended to follow the guidance issued on behalf of Defra (AWA Energy & Environment, Feb 2008) relating to the preparation, extraction, analysis and calculation procedures for passive NO₂ diffusion tubes. And
- That most of these procedures were in force before the guidance was introduced and any amendments necessary in achieving compliance were minimal

Gradko International also participates in a number of QA/QC monitoring systems to demonstrate satisfactory performance:

- The Workplace Analysis Scheme for Proficiency (WASP) programme to ensure uniformity of data throughout the year. Only laboratories that are in the WASP scheme are used for analysing tubes from the National Nitrogen Dioxide Diffusion Tube Network.
- The monthly field inter-comparison exercise with other laboratories to enable assessment of bias and precision undertaken by AEA Energy & Environment

An external QC scheme to check solutions is run by AEA Energy & Environment

Appendix E: Map of All Monitoring Locations within the Borough of Broxtowe.



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Figure E.1 – 2019 Diffusion Tube Locations

Appendix F: Map of AQMA in Trowell.



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Figure F.1 - AQMA 1 encompassing twenty properties on parts of Iona Drive and Tiree Close next to the M1 motorway and the Trowell Park estate (boundary marked in blue). Appendix G: Map of the Borough showing the 2019 modelled background levels of PM_{2.5.}



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Figure G.1 - Map of the Borough showing the modelled background levels of $\ensuremath{\mathsf{PM}_{2.5.}}$

Appendix H: Map of A610/B600 Nuthall Island showing the Monitoring Locations.



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Appendix I: Map of Bramcote Island, Derby Road, Bramcote showing the Monitoring Locations.



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Appendix J: Map of Town Street, Bramcote showing the Monitoring Location.



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Figure J.1 – Map of Town Street, Bramcote and Diffusion Tube Location Page 115

Appendix K: Air Quality Action Plan Email Conversation with LAQM Helpdesk

NOTE: PUT IN EMAILS WITH LAQM IN HERE

Appendix L: Summary of Air Quality Objectives in England

Table L.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁵				
Follutant	Concentration	Measured as			
Nitrogen Dioxide	200 μg/m ³ not to be exceeded more than 18 times a year	1-hour mean			
(\mathbf{NO}_2)	40 μg/m ³	Annual mean			
Particulate Matter	50 μg/m ³ , not to be exceeded more than 35 times a year	24-hour mean			
(r ivi ₁₀)	40 μg/m ³	Annual mean			
Particulate Matter (PM _{2.5})	Work towards reducing emissions/concentrations of fine particulate matter (PM _{2.5})	Annual mean			
	350 μg/m ³ , not to be exceeded more than 24 times a year	1-hour mean			
Sulphur Dioxide (SO ₂)	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			

⁵ The units are in microgrammes of pollutant per cubic metre of air (μ g/m³).

Glossary of Terms

Abbreviation	Description
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
AURN	Automatic Urban and Rural Network
BBC	Broxtowe Borough Council
CAZ	Clean Air Zone
COMEAP	Committee on the Medical Effects of Air Pollution
CV	Coefficient of Variation
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
D2N2	Local Enterprise Partnership for Derby, Derbyshire, Nottingham and Nottinghamshire
EMAQN	East Midlands Air Quality Network
EU	European Union
HE	Highways England
HGV's	Heavy Goods Vehicles
HS2	High Speed Train 2
ITSO	Integrated Transport Smartcard Organisation
LAQM	Local Air Quality Management
LAQM.PG(16)	LAQM Policy Guidance 2016
LAQM.TG(16)	LAQM Technical Guidance 2016
LCWIP	Local Cycling and Walking Infrastructure Plan

LGA	Local Government Association
LSTF	Local Sustainable Transport Fund
µg/m ³	Microgrammes of pollutant per cubic metre of air
NEPWG	Nottinghamshire Environmental Protection Working Group
NET	Nottingham Express Transit
NCT	Nottingham City Transport
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
Notts CC	Nottingham City Council
NCC	Nottinghamshire County Council
O ₃	Ozone
OLEV	Office for Low Emission Vehicles
PHE	Public Health England
PHE PM	Public Health England Particulate Matter
PHE PM PM ₁₀	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PHE PM PM ₁₀ PM _{2.5}	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
PHE PM PM ₁₀ PM _{2.5} PTP	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning Quality Assurance and Quality Control
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC R&A	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning Quality Assurance and Quality Control Review and Assessment
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC R&A SAFED	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning Quality Assurance and Quality Control Review and Assessment Safe And Fuel Efficient Driving
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC R&A SAFED SO ₂	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning Quality Assurance and Quality Control Review and Assessment Safe And Fuel Efficient Driving Sulphur Dioxide
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC R&A SAFED SO ₂ SQPS	Public Health England Particulate Matter Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less Airborne particulate matter with an aerodynamic diameter of 2.5µm or less Personalised Travel Planning Quality Assurance and Quality Control Review and Assessment Safe And Fuel Efficient Driving Sulphur Dioxide Statutory Quality Partnership Schemes
PHE PM PM ₁₀ PM _{2.5} PTP QA/QC R&A SAFED SQPS SQPS TEA	Public Health EnglandParticulate MatterAirborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or lessAirborne particulate matter with an aerodynamic diameter of 2.5µm or lessPersonalised Travel PlanningQuality Assurance and Quality ControlReview and AssessmentSafe And Fuel Efficient DrivingSulphur DioxideStatutory Quality Partnership SchemesTriethanolamine

ULEVs	Ultra Low Emission Vehicles
WASP	Workplace Analysis Scheme for Proficiency
WHO	World Health Organisation
WPL	Workplace Parking Levy

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Report of the Strategic Director

HOME COMPOSTING

1. <u>Purpose of report</u>

To update Members on the subject of home composting.

2. <u>Background</u>

The Council provides a kerbside garden waste collection service with around 20,000 residents subscribing to the scheme. The materials collected as part of the garden waste collection are composted using an outdoor windrow system. Due to biosecurity, food waste collected on a commercial scale (not individual households) can only be composted using enclosed in vessel systems. Consequently, the Council does not provide a kerbside collection service for composting of food waste.

There is an alternative way to disposing of certain food wastes as opposed to putting the waste in the black lidded bin. Home composting provides residents the opportunity to dispose of food waste in an environmentally friendly way. At the end of the process a nutrient rich product is produced, thereby creating a closed loop circular effect from waste product to new product within the home environment.

As well as certain food waste, garden waste can also be home composted. Further information relating to the value of home composting is shown in the appendices.

3. Financial implications

There are no financial implications.

Recommendation

The Committee is asked to APPROVE the actions outlined in the recommendations for inclusion in the Climate Change and Green Futures action plan.

Background papers Nil

APPENDIX 1

1.What is Composting

Composting is the use of organic matter such as garden waste or uncooked kitchen vegetable scraps which decompose to form a dark brown soil-like material rich in plant nutrients.

2. Why Home Composting

Composting is an inexpensive, natural process that transforms kitchen and garden waste into a valuable and nutrient rich food for the garden. Research suggests one third of household waste could be suitable for composting at home. Composting is one of the most effective actions that can be taken at home to reduce the amount of waste in the black lidded bin.

Waste analysis undertaken by Measurement Evaluation Learning (M.E.L) in 2014 suggested that 38.7% of the residual waste collected in the black lidded bins is food waste with up to two thirds (67.2%) of this food waste being raw fruit and vegetable matter which could potentially be home composted. In Broxtowe during 2019/20 this would equate to approximately 6232 tonnes of waste.

Whilst home composting itself would not contributed directly towards the Council's recycling rate it is calculated that if the 6232 tonnes of residual waste where to be diverted away from the collection rounds, this would result in an overall increase in the recycling rate to approximately 45%. This is an increase of around 6%. This is based on all the other tonnages collected remaining the same.

3. Nitrogen and Carbon mix

The composting process relies on the right mix of ingredients to make it work. The recommended ratio is commonly referred to as a 50:50 mix of green 'wet' (Nitrogen rich materials) and brown 'dry' (carbon rich materials) organics.

The green items are quick to rot and provide important nitrogen and moisture whereas the brown are slower to rot. They provide fibre and carbon and also allow important air pockets to form in the mixture. Examples of the green and brown materials are shown in Table 1.

Greens	Browns
Vegetable peelings	Cardboard egg boxes
Fruit waste	Scrunched up paper or newspaper
Teabags	Fallen leaves
Plant prunings	Crushed eggshells
Grass cuttings	Twigs

Table 1: Example of items which can go in a home composter

In order to establish the correct balance, it is it recommended that the organics should be added in layers starting with a brown dry layer followed with a green wet layer, followed by a brown dry layer and so on.

For a normal home composting set up it is recommended that the following materials are not put in the composter:

- cooked vegetables
- meat
- dairy products
- diseased plants
- dog poo or cat litter

Putting these in the bin can encourage unwanted pests and can also create odour issues. It is also advisable to avoid composting perennial weeds (such as dandelions and thistle) or weeds with seed heads. If the temperature does not rise enough these may not breakdown fully in the composting process and therefore weeds could be spread and dispersed around when applying the compost to the garden.

The contents of the compost bin need to be aerated and this can be achieved by turning the organics inside the composter periodically. The composting process can take between 6-12 months. The breaking down process can be aided by chopping up the materials into small pieces as it is added to the compost bin.

4. Placing of the compost bin

A compost bin should ideally be located on a level, well-drained area. This allows excess water to drain out and makes it easier for creatures such as worms to get in and get working on breaking down the contents. Placing the bin in a partially sunny spot can help speed up the composting process.

5. The composting process

The composting process involves microorganisms. Three types of organisms – fungi, bacteria and actinomycetes – begin to grow all over the material and break down the waste. This produces heat, further increasing the activity of the bacteria.

Once the bacteria have used up all the starch and sugars, the temperature falls again, creating a better environment for the fungi, which then begins breaking down any woody material.

The compost is ready to use when it is crumbly in appearance and has a slightly earthy smell. Compost will help improve soil structure, maintain moisture levels, and keep the soil's pH balance in check while helping to suppress plant disease. The compost will have everything plants need including nitrogen, phosphorus and potassium and it will help buffer soils that are very acidic or alkaline.

6. Limitations to home composting

Unfortunately, there are limitations with regards to home composting. Space can be an issue both in and outside of the home. Most households who participate in home composting have some sort of kitchen caddy, which as the name suggests is kept in the kitchen, to store all the peelings and scraps of food. Whilst caddies specifically designed for home composting can be purchased a simple container with an air tight lid will suffice.

The process can be a lengthy one. This in itself can be problematic. Unless there is a large area to make the compost the turnover in to a usable product may not be quick enough if large amounts of garden waste, for example, are being produced on a regular basis.

7. Common problems with home composting

Whilst the process is a natural one there are often common problems associated with home composting. The examples in appendix 2 show common problems and the possible resolutions to aid the composting process.

8. How the Council promotes home composting

The Council has a dedicated webpage to Food Waste and Composting. The page gives tips about reducing food waste and some basic facts about composting. This page is in the process of being reviewed and updated to provide more information to residents on how they can participate and benefit from home composting.

For those that are interested in purchasing a home composter the webpage also signposts people to getcomposting.com. All districts Councils in Nottinghamshire signpost and work in partnership with 'getcomposting'.

9. Different types of home composting system

There are a wide variety of different composter type products on the market. These products vary in price and do not all serve the same purpose. The information in Table 2 identifies some of the main types and the differences in the products.

Composter	Purpose
Traditional style composter bin either	Used to compost green and brown
made of plastic or wood for example	materials within the garden setting.
HotBin	Self-contained unit which can be
	located on hard standing. Suitable for
	composting all food waste including
	cooked food, meats and fish.
Green Johanna	Located within the garden and has a
	sealed bottom. Is suitable for
	composting all food waste including
	cooked food, meats and fish.

Table 2: Different types of home composter and their purpose

Composter	Purpose
Wormery	Use a special type of worm (often Tiger
	Worms) to break down kitchen waste in
	a container and turn it into compost and
	a concentrated liquid feed.

10. Recommendations

To ensure the value of home composting is recognised it is proposed that a number of actions to promote this topic are included within the Recycling Strand as part of the Climate Change and Green Futures programme.

The proposed actions to be included in the Climate Change and Green Futures action plan are:

- 1) Provide improved guidance aimed at influencing behaviours in relation to home composting
- 2) Publicise to the community examples of individuals who home compost and the benefits of home composting through the various media channels
- Identify community champions or work with Allotment Associations to provide one to one guidance or open day events to provide hints and tips on composting
- 4) Consider ways in which we can promote waste reduction through home composting, for example, competitions targeted at households reducing the amount of waste they produce through home composting

APPENDIX 2

Common problems associated with home composting

Common Problem	Remedial action
Compost pile won't heat up	The materials may be too dry. This can happen quickly during the summer months. Try to keep the compost materials moist to the touch. Cover the pile. Another possibility is that the pile may be low in nitrogen. Fast-working microorganisms can quickly consume all the nitrogen and leave undecomposed carbon materials behind. Replenish the nitrogen content of the pile with fresh green grass clippings, kitchen scraps, manure. Another possible cause is that the pile is too small. Collect more materials and mix everything into a pile that measures 3 feet on each side, and is at least 3-feet high.
Soggy Compost	Dense or water-logged compost piles don't contain enough oxygen for the microorganisms to survive. Often these piles give off an unpleasant odor. The solution is to aerate the pile and add more dry materials.
Smelly Compost	If the pile smells like ammonia, it may contain too much nitrogen. Add carbon materials such as straw, leaves, or hay to correct the balance.
Finished product is too coarse.	Some materials, such as eggshells and corncobs, take a long time to break down. To produce finely textured compost such items can be shredded or chopped up before they are put in the compost bin. These item can also be sifted out and put back in the compost for further decomposition

Report of the Strategic Director

WORK PROGRAMME

1. <u>Purpose of report</u>

To consider items for inclusion in the Work Programme for future meetings.

2. <u>Background</u>

Items which have already been suggested for inclusion in the Work Programme of future meetings are given below. Members are asked to consider any additional items that they may wish to see in the Programme.

14	 Performance Management – Review of Business Plan
September	Progress – Environment Pride in Parks Update Improving the boroughs recycling rates and providing more
2020	opportunities for residents to recycle Clean and Green Update Green Futures and Climate Change Strategy progress Covid 19 – Climate Change issues Boiler Funding – Housing Stock
23 November 2020	 Performance Management – Review of Business Plan Progress – Environment Garden Waste Charges 2021/22 Subscription Fee Clean and Green Update Free Tree Giveaway Trade Waste Fees and Charges
1 February	 Business Plans and Financial Estimates 2020/21 –
2021	2022/23 – Environment Pride in Parks Update Clean and Green Update Broxtowe Parks Standard Climate Change and Green Futures Update Transport and Fleet Strategy Update

<u>Recommendation</u> The Committee is asked to CONSIDER the Work Programme and RESOLVE accordingly.

Background papers: Nil This page is intentionally left blank

Agenda Item 12

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