

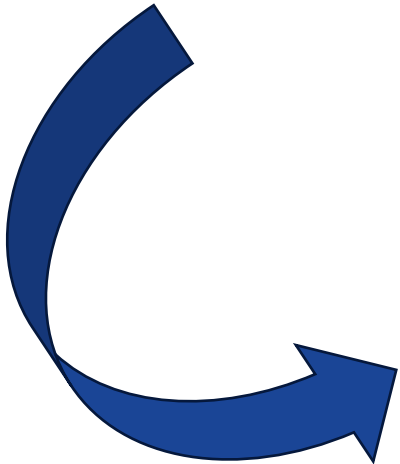


Ricardo Spotlight on Air Quality

20th March 2024

Ricardo Spotlight on Air Quality: The Polls

Access via the QR code with your smart phones



.....Or join us at [menti.com](https://www.menti.com)

and use joining code **3772 5236**



Let the voting begin!

Ricardo Spotlight on Air Quality: An Introduction

- Welcome!
- Local authority (and their air quality partners') webinar
- Free!
- Interactive
- Current topics
- Who are the presenters?

Jo Solan



Pedro Abreu



Ben Fowler



Mark Attree



AGENDA

Air Quality Public Engagement; Oxford City Council

Defra Grants 2024

Pollution Route Monitoring

Air Quality Sensors QA/QC

Case Study: Air Quality Strategy (AQS) & Air Quality Action Plan (AQAP)

Q&As



Air Quality Public Engagement

Pedro Abreu: Oxford City Council

Does your LA manage any air quality public engagement?



Behavioural change

Voluntary behavioural change is a challenge as it cannot be imposed. The power to change lies with the individuals themselves.



- [World Bank](#) - empowering citizens to participate and integrating their voice in the development process act as key accelerators to achieving results.
- [Global action Plan](#) - as part of Clean Air Day revealed that people tend to respond well when given accurate information and the means to do something about air pollution
- [Department for Transport \(DfT\)](#) - People need to know about new or existing initiatives or types of behaviour and understand what the benefits are for them (...) they need to trust the source of information and they need it to be communicated in a language they can engage with



<https://www.oxonair.uk/>

Website's vision

“To develop an innovative AQ website, to be used as an important tool to communicate and raise awareness of air pollution with visitors and residents across Oxfordshire.”



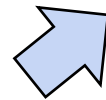
- Complete Integration of all relevant AQ info from all Districts
- Designed with significant input from members of the public
- Inclusion of specific features and interactive tools to promote constant interaction
- Provide evidence, information and advice in a simple and accessible manner
- Info tailored to different age groups and levels of expertise



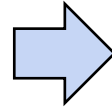
DEFRA Air Quality Grant 2020/2021



£162,500



Social User Research Element



Website Development



Website Maintenance (next 9 years)



Social User Research

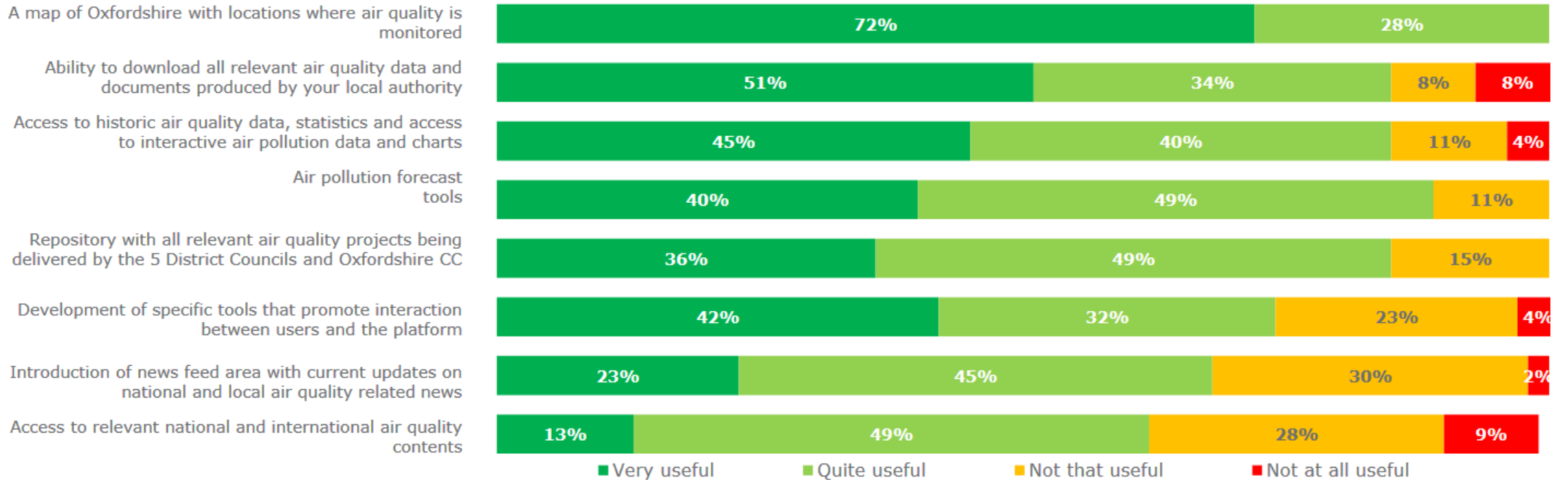
An Online Survey ‘Public Consultation’ (5th July to 5th September 2021) – 300 completed responses

53 Telephone Semi-Structured Interviews “User’s research” to 6 groups, lasting 30min (22nd October to 26th November)

| | Total | |
|--|-----------|-----|
| Total | 53 | |
| I Consultants/researchers/government | 11 | 21% |
| II Public health | 6 | 11% |
| III Schools | 4 | 8% |
| IV Charities / campaigning / community | 11 | 21% |
| V Councilors / council staff | 17 | 32% |
| VI Residents (low income communities) | 4 | 8% |

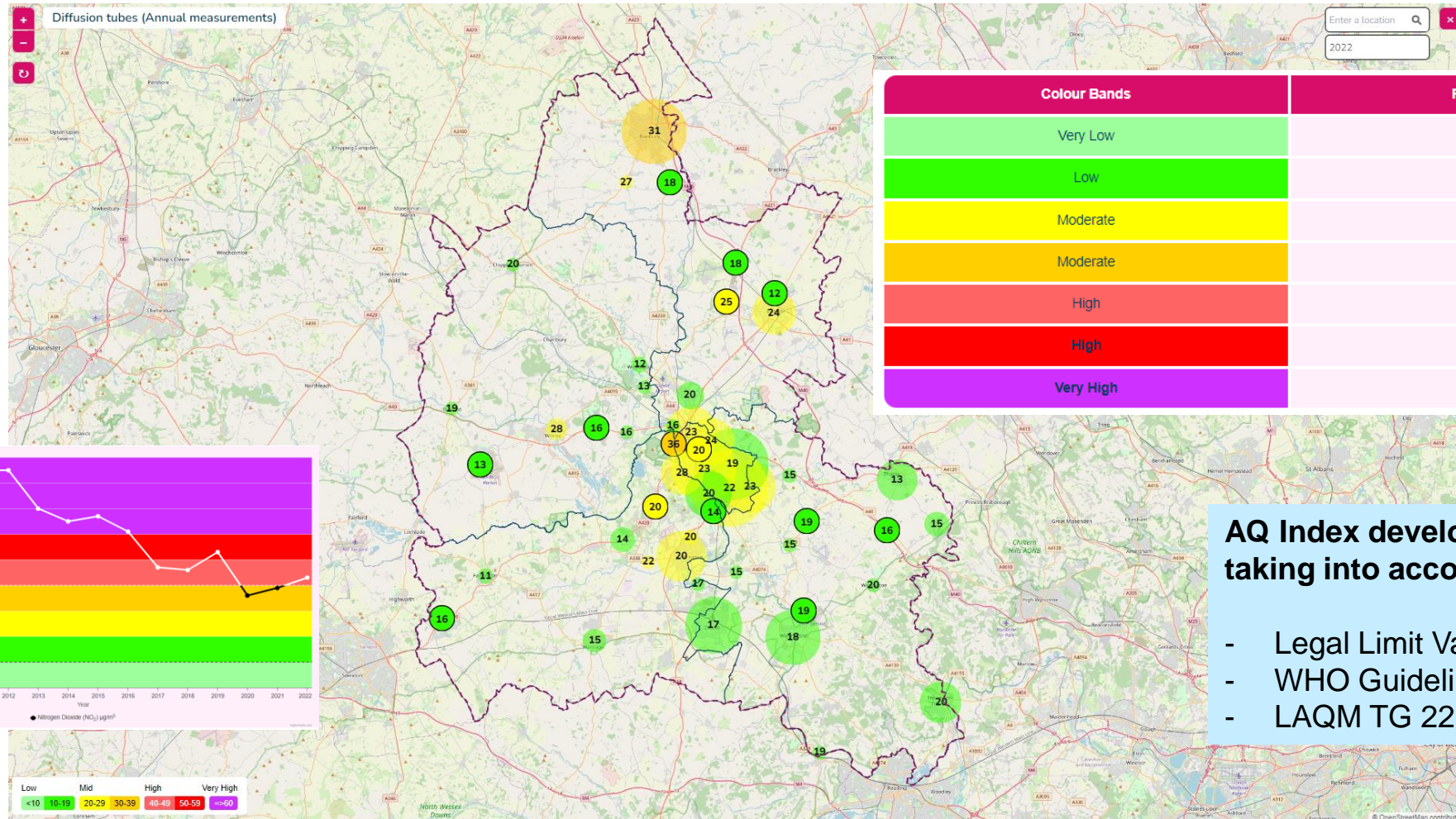
| | Total |
|--------------------------------------|------------|
| Total | 300 |
| Local Authority Area: | |
| Oxford | 27% |
| Vale of White Horse | 23% |
| South Oxfordshire | 20% |
| West Oxfordshire | 16% |
| Cherwell | 12% |
| Outside Oxfordshire | 2% |
| Not answered | 9% |
| Capacity in Which Responding: | |
| Resident living in Oxfordshire | 90% |
| Resident living outside Oxfordshire | 4% |
| Local councillor | 5% |
| Representative of an organisation | 1% |
| Representative of a business | 0% |
| Not answered | 0% |

Social User Research: Results



<https://www.oxford.gov.uk/downloads/file/855/oxfordshire-air-quality-website-research-report>

Air Quality Maps, Post Code search engine & Diffusion tube Index



AQ Index developed taking into account:

- Legal Limit Values
- WHO Guidelines
- LAQM TG 22

Free Subscription to Air Quality Alerts for Oxfordshire

Login to your Air Quality Alerts profile

Email

Password

[Login](#) [I forgot my password](#)

Do not have an account?
[Sign up](#)

Our Air Quality Alerts system provides a free subscription service that sends registered users an alert message if air pollution in Oxfordshire is forecast to be MODERATE, HIGH or VERY HIGH. The description of the level of pollution is based upon the UK Daily Air Quality Index (DAQI). Guidance outlined by health professionals is provided with each alert to enable you to make informed decisions and take any precautions necessary.

The alert service is provided for anyone wishing to know about the quality of the air they breathe. It will be of particular benefit to people with medical conditions that may be affected by pollution, such as asthma, bronchitis and emphysema. It may also benefit people whose breathing gets worse when air pollution increases. This early warning service allows you to make informed decisions and take action if necessary to minimise the effects of pollution episodes.

The Air Quality Alerts service is not designed to report on levels of pollen. For further information on levels of pollen please visit the [pollen forecast](#).

Terms and Conditions for the service can be found [here](#).

The Daily Air Quality Index (DAQI) is used to describe and communicate the current and/or forecast levels of air pollution in the UK.

It has been approved by the **Committee on Medical Effects of Air Pollution (COMEAP)**

| Air Pollution Banding | Value |
|-----------------------|-------|
| Low | 1-3 |
| Moderate | 4-6 |
| High | 7-9 |
| Very High | 10 |



Air Quality Forecasts

Forecast for Oxfordshire

Today 
Air pollution levels are forecast to be Low today

Tomorrow 
Air pollution levels are expected to be Low tomorrow

Outlook 
Air pollution levels are expected to be Low beyond tomorrow

Last updated: 5:00 AM on Thu 22nd February 2024

5 day summary »

| Local Authority | Thu 22nd Feb | Fri 23rd Feb | Sat 24th Feb | Sun 25th Feb | Mon 26th Feb |
|---------------------|--------------|--------------|--------------|--------------|--------------|
| Cherwell | 3 Low | 3 Low | 2 Low | 2 Low | 2 Low |
| Oxford | 3 Low | 2 Low | 2 Low | 2 Low | 2 Low |
| South Oxfordshire | 3 Low | 2 Low | 2 Low | 2 Low | 2 Low |
| Vale of White Horse | 3 Low | 2 Low | 2 Low | 2 Low | 2 Low |
| West Oxfordshire | 3 Low | 3 Low | 2 Low | 2 Low | 2 Low |

Last updated 22/02/2024 06:00

Daily Air Quality Index (More Info)

| Low | | | Medium | | | High | | | Very High |
|-----|---|---|--------|---|---|------|---|---|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Local Area Air Quality Projects

Oxford City

Find details of air quality projects in Oxford City

Click on read more in each of the projects to find out more details

Vale of White Horse West Oxfordshire South Oxfordshire **Oxford City** Cherwell Oxfordshire

OxARIA
AIR QUALITY IN OXFORD CITY
Awaiting funding

Oxfordshire Air Quality Website
In progress

Do You Fuel Good? campaign
In progress

Eco-moorings trial for visiting boats at Aristot Lane
In progress

Policy guidance Public information

OxARIA is a collaboration between the University of Birmingham and the University of Oxford, supported by...

Read more »

Public information Raising awareness

Delivery of an air quality website for Oxfordshire, in partnership with all the other Districts and County, with the...

Read more »

Public information Raising awareness

Delivery of a city-wide awareness raising campaign, in partnership with local Friends of the Earth and the...

Read more »

Promoting low emission transport Promot emissio

Delivery, in partnership with t & River trust, of 3 eco-moorin the visitor moorings in Aristot

Read more »

STOP Project

Read more »

Do You Fuel Good? campaign

In progress

Public information

Raising awareness

Funding source: DEFRA AQ Grant 2020/2021

Total amount of funding allocated: £45,000

Description: Delivery of a city-wide awareness raising campaign, in partnership with Friends of the Earth, specifically addressing wood burning and the use of inappropriate fuels; highlighting wood burning as a major source and providing best practice and advice on how to minimise your exposure and reduce emissions.

Air Quality Impacts: Not estimated. However, annual Clean Air day communication and awareness raising campaign is expected to result in a behaviour change of up to 6%.

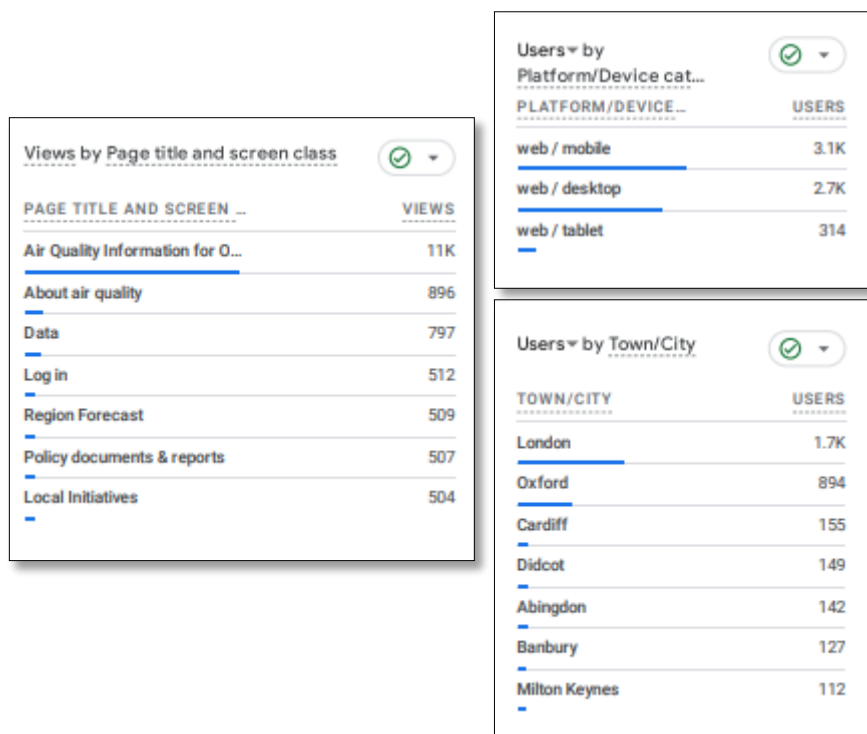
Find out more:

[Do You Fuel Good? campaign](#)

Evaluation and other areas of interest

From 18th September to the 22nd February....

- total amount of user views since launch – **23,182**
- total amount of users since launch – **6,116**



Other website information tools:

- Kids Area
- Personal Air Quality Footprint tool (Clean air hub)
- Policies and Reports
- Data selector tool (diff tubes + automatic data)
- Pollution Episodes
- Air Quality & Health education and advice



Thank You

Pedro Abreu – Principal Air Quality Officer (Oxford City Council)

airquality@oxford.gov.uk

Any Questions?



Defra Grants 2024

- For the Autumn 2023 submission Defra will announce the recipients (Winners 😊) in the next week or so.
- Another chance to submit August 2024
- Happy to provide ideas on previously successful applications

Examples of successful Defra Grant projects

- Behavioural change campaigns
- Public engagement
- Education: helping the public understand their own emissions and how to reduce them
- Sensor monitoring
- Reducing roadside NO₂
- Lower pollution travel routes
- Air quality website development
- Modelled changes in pollutant concentration, to feed into updated Smoke control Areas, which;
 - Assess the health impacts resulting from these changes in emissions and concentrations
 - Carry out a cost benefit analysis of each option
 - Consider how these costs and benefits would be distributed between different social groups and business sectors.



287

Air pollution levels are forecast to be **low**

Air Quality England

A resource, providing local air quality and data provision to the public.



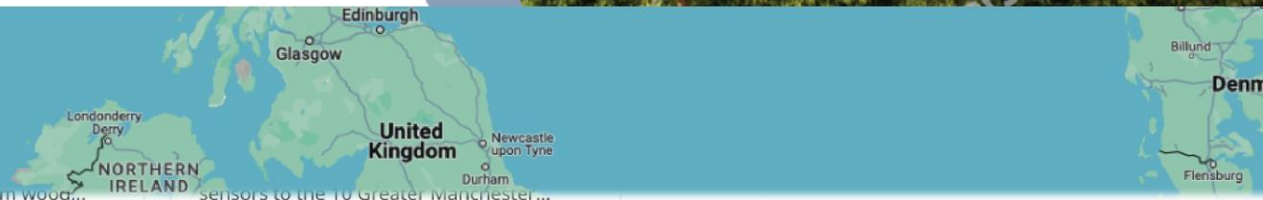
ARTICLE

QA/QC inst and Maide

Ricardo is applying its expertise in air quality to enable the Royal Borough of Windsor...

[Read more >>](#)

Latest Measured Air Quality



Contribution to air pollution from wood...

[Read more >>](#)

sensors to the 10 Greater Manchester...

[Read more >>](#)

Quality
and

Local air quality and
public.



Live summary

Below are the number of monitoring sites that appear in each band.



Air pollution levels are forecast to be **low**



Air pollution levels are forecast to be **moderate**



Air pollution levels are forecast to be **high**

Sign up for air pollution alerts

Receive free alerts via SMS or email when air pollution is forecast to be moderate, high or very high.

News

Read some of the ways we are improving air quality



Windsor
Ricardo is applying its expertise in air quality to enable the Royal Borough of Windsor...

Air pollution tackled in Greater Manchester
Ricardo enables local authorities across Greater Manchester to monitor the contribution to air pollution from wood...

Praxis air quality sensors selected for 41 locations in partnership with Ricardo, South Coast Science is supplying 41 PraxiS sensors to the 10 Greater Manchester...

What is air pollution?

Air pollution is defined as a mixture of gases and particles that have been emitted into the atmosphere by man-made processes. The combustion of fossil fuels such as coal, oil, petrol or diesel is the most significant source of the key pollutants of concern to local authorities. Air pollution is of concern as it has negative impacts on human health and the natural environment.

Our Services

Here are some of Air Quality services provided by Ricardo. To find out more contact a member of the team here



Air Quality and Monitoring

Specialising in air quality data management, dissemination, LSO services, QC audits, air by mobile monitoring reporting and low emission strategies.



EMAQ

A training provider for local authorities, environmental protection officers, specialist air quality, emission monitoring, contaminated land and noise monitoring.



Reporting Data

Output your annual data reports by setting a region and local authority on the map above.



Pollution Route Monitoring

Ben Fowler: Ricardo

Where do you deploy sensors, within your LA?



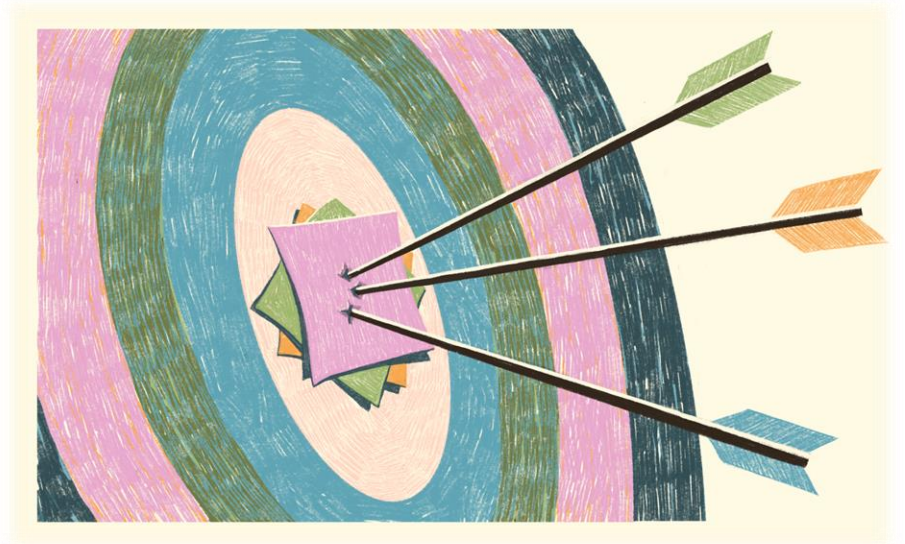
What is Pollution Route Monitoring & Mapping?

- **Travel paths** designed to mitigate the negative effects of transportation on air quality.
- A way of measuring air quality along a given route.
 - Routes can be associated with **pedestrians**, **cyclists** and any other modes of movement.
- **Mobile measurements** rather than static.
- Illustrated by a **heat map** of the monitoring data along the routes.



Aims & Objectives

- Uses:
 - **Assess exposure** of pedestrians to harmful pollution across given routes. E.g. school/work commutes
 - To create a **visual tool** that aids users in making informed decisions regarding exposure to pollution.
 - As a tool used within Air Quality Action Plans for objectives focussed around:
 - ✓ Raising **awareness**
 - ✓ Reducing **exposure**
 - ✓ **Local community engagement**
 - ✓ Promotion of **Active Travel**
- Effectiveness of the technique:
 - Can low-cost sensors be used to assess these questions?
 - If the route you use to get to your destination has an impact on your exposure.



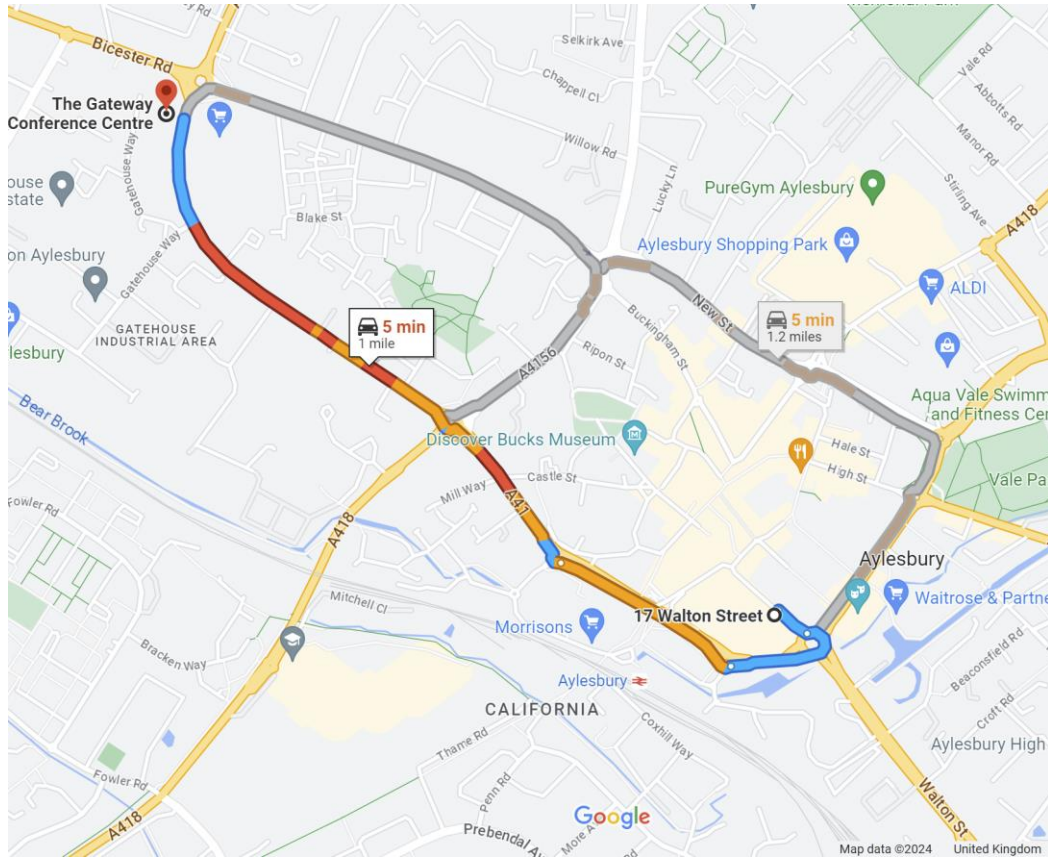
The Day

- Our plan was to **walk between two Buckinghamshire Council buildings** in Aylesbury, The Gateway Conference Centre and Buckinghamshire Council Offices in Walton Street.
- Commonly used route for LA employees between the two offices – currently **more common to go along A41 route**.
- 2 people, on circular routes, clockwise and anticlockwise to get to destination – one along A41 and one through parks & town centre – **process repeated twice**.

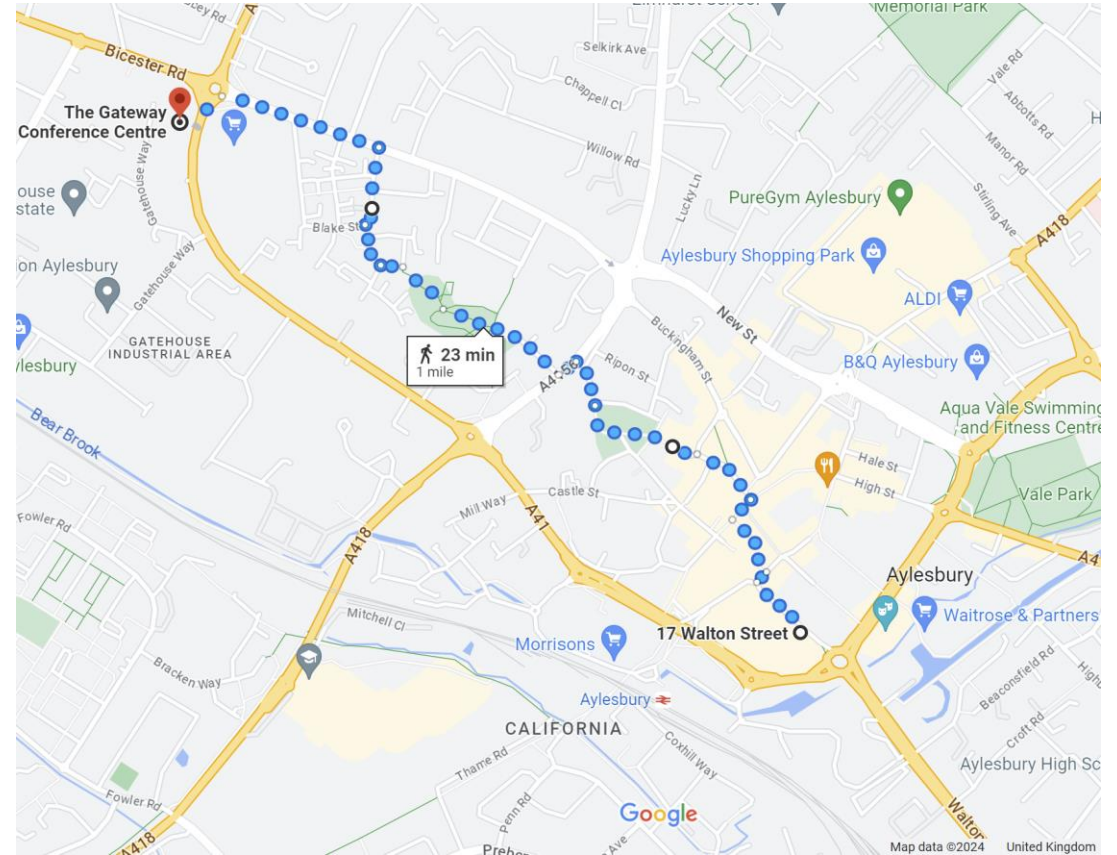


The Routes

A41 Route



Town Centre Route



The Need for QA/QC

- Sensors needed to be **continuously powered** to preserve the history of sensor calibration – internal battery only lasts two hours so an external battery was used to increase longevity.
- Sensors operated next to reference station (**colocation**) over a period of months to derive accurate calibration factors prior to the survey.
 - Allows for normalisation of both sensors to each other.
- Data collected from the sensors were **ratified** before the comparison analysis was undertaken – involves application of colocation factors etc.



The Result

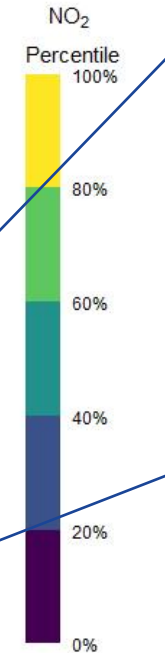
- **Timeseries NO₂ plot** (10 second data) for raw nitrogen dioxide measurements (for one sensor) along one full loop walking both routes.
- Difference in exposure is clear between the two routes.
- Peaks along the A41 route are likely to be when we were next to **idling traffic**.
- But how can we translate this into a tool that's more informative for public use?
- Simultaneous measurements is the only way to show that pollution profiles are different at the same time.



The Result

- Some **isolated hotspots** on the return Town Centre route in the centre itself.
- **Town Centre route is in the lower NO₂ percentiles** more often.
- Hotspots on the A41 at roundabouts and the southern end where there was more traffic.

Time: 2023-06-15 10:10:10



Considerations

- Exposure is **dependent on road activity** e.g. congestion/traffic – whereas quieter route has much lower exposure (bottom 20/30 percentile).
- **Percentiles** clearly show the **relative differences** between each route.
 - Both sensors with respect to each other behave the same using percentiles.
 - Reduces the possibility of error associated with calibration.
- Both routes need to be **assessed simultaneously** to find out what is happening at each site at the same time.
 - Using the same sensors to make reliable conclusions.



Conclusions

- **There is a cleaner route** to go from The Gateway to Walton Street.
- **With appropriate QA/QC** you can use low-cost sensors to assess the exposure of pedestrians to harmful pollution across given routes.
- Higher exposure is associated with **vehicle movements**.
- If anybody has any suggested uses for this please ask!
 - Such as school routes, push bikes, breathing heights e.g. buggies/breathing height.
 - **Clean Air Day** is coming up on **20th June 2024**.
- Map animation available at:
<https://twitter.com/RicardoAirQ/status/1679029071622340608>



Thank You

Ben Fowler – Senior Consultant (Ricardo)

Ben.Fowler@ricardo.com



Any Questions?



Low-Cost Air Quality Sensors QA/QC

- Air quality sensors are unlikely to provide reliable data ‘out of the box’
- Data quality and measurement uncertainty for sensors operating in real-world conditions is often unknown
- Uncorrected responses may differ significantly from the ‘true’ pollution value.
- Comprehensive QA/QC and data correction ensures results are defensible under challenge.
- Co-location with a “reference” monitoring station allows the evaluation of sensor performance and the creation of correction factors.
- To maintain PM indicative MCERTS certification for quantitative measurements co-location is required annually.
- For in-depth blogs on low-cost sensors and Ricardo’s QA/QC services head to - <https://www.ricardo.com/en/news-and-insights/campaigns/independent-qaqc-of-air-quality-sensor-data>



QA/QC Audits

Benefits

- Improved quality data
- Instrument longevity
- In line with [Defra Technical Guidance](#) best practice

Example of site not previously audited



- Found black filter and pump full of corrosion
- Found pressure sensor was unplugged, causing the flow rate failure
- When plugged in, pressure sensor found to be faulty

Ricardo's independent QA/QC audit highlighted faults with the analyser, improving data reliability and validity.

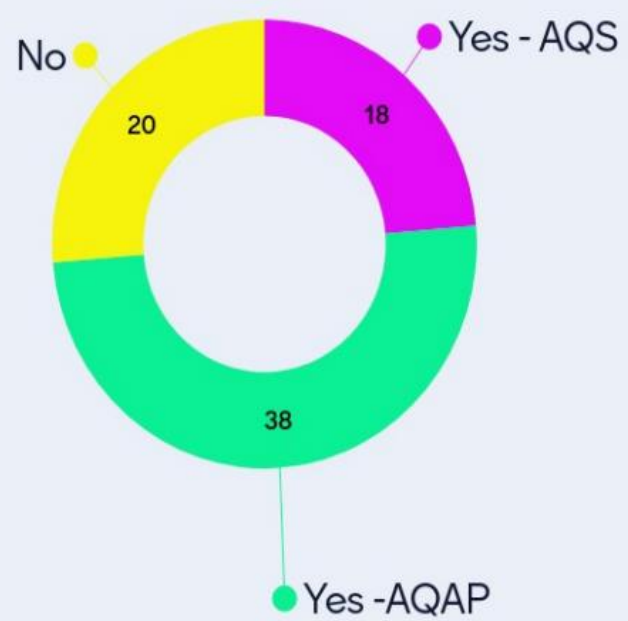




Case Study: Air Quality Strategy (AQS) & Air Quality Action Plan (AQAP)

Mark Attree: Ricardo

Do you have an AQS/AQAP in place currently?



Agenda

Introduction to the case study

Evidence gathering

Community and stakeholder engagement

Developing the strategy

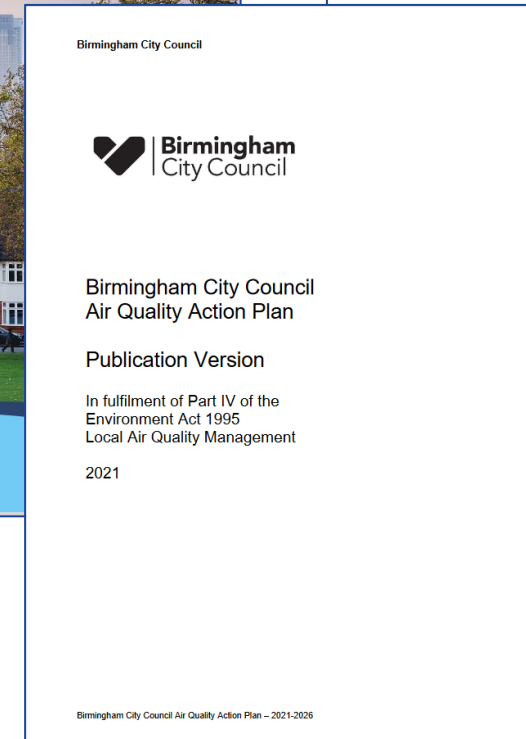
Designing the strategy

Challenges and lessons learned

Air Quality Action Plans

Review and Assessment process

- Annual Status Reports (**ASR**)
 - Include monitoring data
 - Report on significant new developments that might affect local air quality
- **If likely exceedances of the objectives are identified:**
 - **AQMA** declaration
 - Develop an **Air Quality Action Plan** in 12 months
 - A document which sets out what **action or measures** the Council will take **to improve air quality** within a **set timescale**
 - Should be prescriptive and detailed with set tasks or sub tasks for each measure
 - **Focus on emission reduction**, but also can include exposure reduction options and opportunities



Air Quality Strategies

“Those authorities who have **not had to designate AQMAs** and produce AQAPs will from 2023 be **required to draw up a local Air Quality Strategy**. These strategies will **not have a set format** and authorities will be able to draw on content within their ASRs and local transport plans to produce them.” (LAQM.PG22 para 2.15)

Purpose

- A committed plan of action to consider air quality at a **local government level**
- If AQMAs have been revoked, a local AQS should be put in place to **ensure air quality remains a high-profile issue** and to ensure the **local authority is able to respond quickly** should there be any deterioration

Goals

- **Highlight air quality** as an issue
- Provide **information about the local air quality situation** to the public
- **Demonstrate commitment** to keeping pollutant concentrations below objective levels
- Strengthening and **integrating with other objectives, strategies, and policies**
- **Improve collaboration with neighbouring authorities**

Background information

Air Quality in Cornwall
The air quality in Cornwall is generally very good. Cornwall Council carry out annual reviews of air quality using screening tools and monitoring. The process focuses on sources of air pollution: road traffic, airports, shipping, railways, domestic solid fuel use, industrial emissions, poultry farms and fugitive emissions. This process has shown that there are areas where traffic-related levels of pollution need to be improved.

Air Quality Management areas in Cornwall:

- Launceston, February 2018
- Gunnislake, August 2011
- Camelford, January 2017
- Bodmin, July 2008
- St Austell, March 2014
- Grampound, July 2011
- Camborne - Pool - Redruth, 2006
- Tideford, August 2011
- Truro, July 2015

Cornwall Council has declared nine Air Quality Management Areas

This document details what Cornwall Council is doing and planning to do to improve air quality, with the overall aim of reducing and removing the AQMA designations.

Industrial Emissions in Cornwall
These processes are regulated by The Environmental Permitting (England and Wales) Regulations 2016, processes are classified into three parts based on their potential to pollute the environment. A(1) Installations are the highest risk and are regulated by the Environment Agency, lower risk A(2) and Part B Installations are regulated by Cornwall Council.

There are around 200 Industrial Installations in Cornwall which have the potential to cause air and environmental pollution.

Part A(1) Installations include large agricultural holdings (e.g. pig farms), landfill sites, abattoirs and the Cornwall Energy Recovery Facility.

Part A(2) Installations include printing and wood preservation.

Part B Installations include paint spraying, mineral extraction, foundries, petrol stations and dry cleaners.

The Installations have set limits on their emissions in their environmental permits. These limits are set at levels that ensure that air quality standards aren't exceeded.

Health impacts of air pollution
There have been several studies that estimate the number of premature deaths related to poor air quality. In most cases, air pollution is not the direct cause, but it is shortening the lives of those with existing heart or lung conditions by exacerbating symptoms. The most recent study by the Committee on the Medical Effects of Air Pollution (COMEAAP) considered the range of central estimates of long-term exposure to the air pollution mixture (the combination of pollutants including nitrogen dioxide and particulate matter).

The study found an equivalent of 28,000 to 36,000 deaths in the UK in 2013.
The number of deaths each year is likely to be within or close to this range. Other studies, including a Royal College of Physicians report (2016)¹ estimated air pollution could be contributing to as many as 40,000 premature deaths. The situation is complex and it's difficult to provide an exact number of deaths.

What is clear, though, is that air pollution is one of the highest environmental risks to public health we face, currently ranking alongside cancer, heart disease and obesity.

Social equity and Health Inequalities
The most vulnerable in our society are often the ones whose health is most at risk from the impacts of poor air quality. Communities characterised by high levels of deprivation often experience higher than average pollution, or pollution levels that are relatively higher than those in less deprived communities. Other groups disproportionately affected include older people, children, pregnant women and individuals with existing medical conditions.

In Cornwall, 17 neighbourhoods are among the most deprived (top 10%) in England

Out of these neighbourhoods 9 are within AQMAs

For Cornwall and Isles of Scilly, the total number of deaths from all causes in 2013 was 5,802 (over 25 years old)

Of these, around 223 are thought to have died prematurely due to exposure to PM_{2.5} (3.8%)

Health problems resulting from air pollution also have a high financial cost to society, businesses and our health services.

In the UK, these costs add up to more than £20 billion every year (ICP 2008)

Cornwall Council's Wellbeing and Public Health Service will soon be distributing a leaflet on the health impacts of air quality through GP surgeries.

¹Commission on the Medical Effects of Air Pollution (2016) Assessment of long-term average concentrations of nitrogen dioxide with mortality www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality

²Royal College of Physicians, Every breath we take: The lifelong impact of air pollution. Report of a working party's London, 2016, 2016.

³Department of Health, Public Health Outcomes Framework 2013, www.gov.uk/government/uploads/system/uploads/attachment_data/file/146203/PHF_13_14.pdf

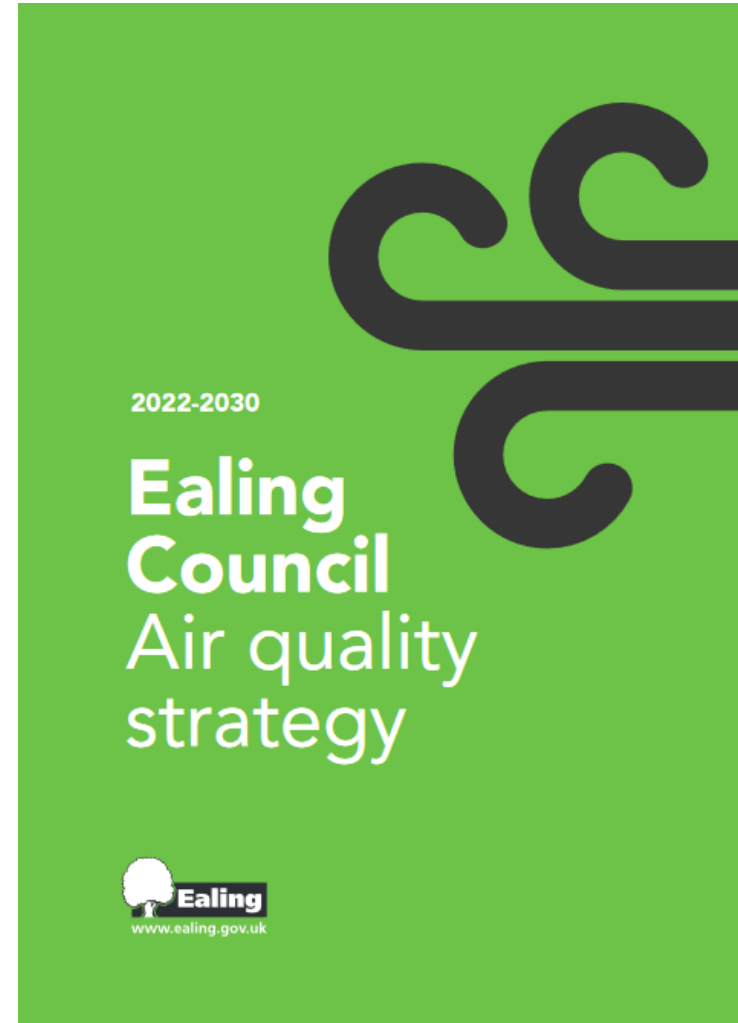
⁴Public Health England (2016) Counting: Using Health Inequality Indicators to Measure Health Inequality

8 | Clean Air for Cornwall Strategy

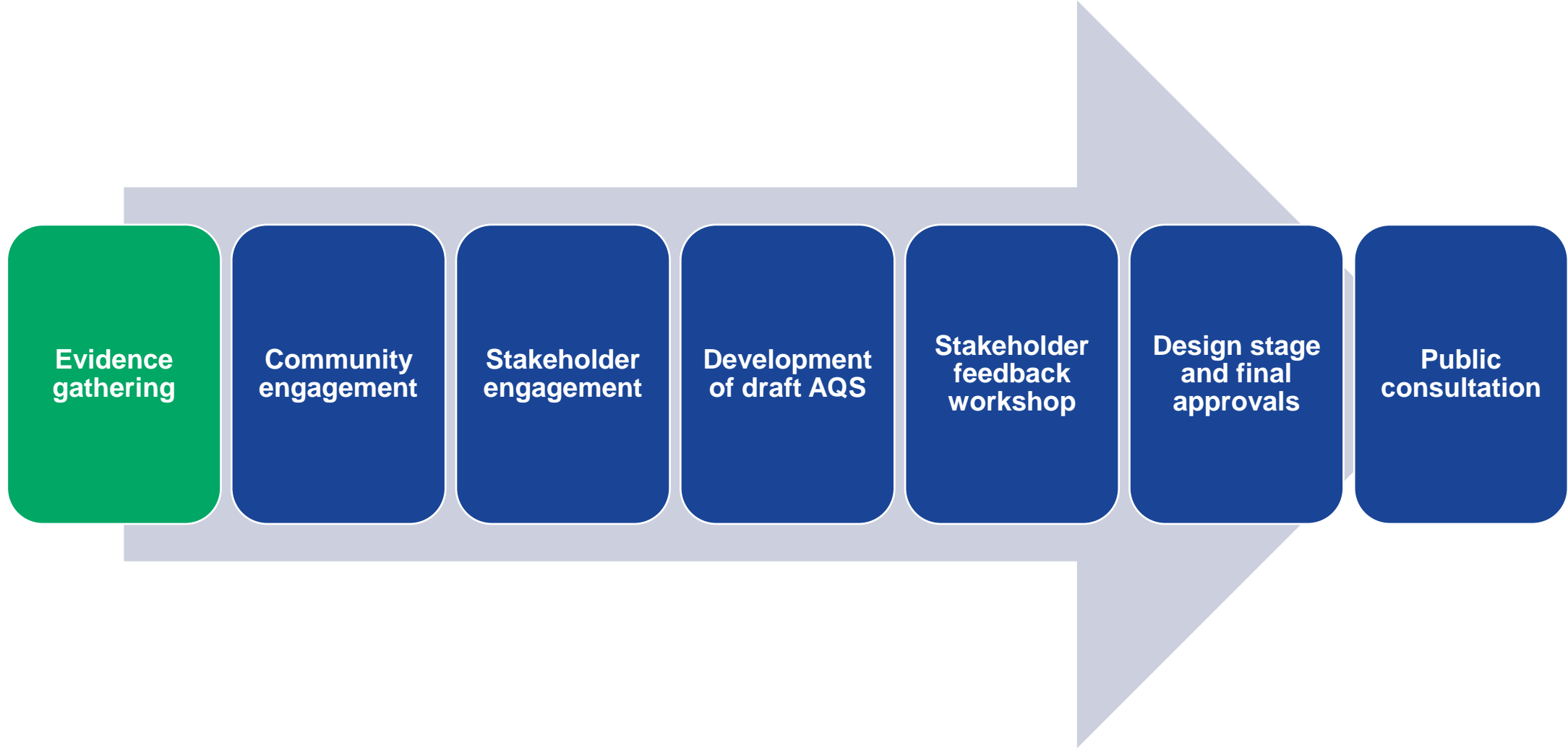
Clean Air for Cornwall Strategy | 9

Case Study: An Air Quality Strategy for Ealing

- Ealing Council was undertaking a package of air quality measures for the borough
 - Updating their Air Quality Action Plan
 - Monitoring
 - Low Emission Strategies
 - Planning and Permitting
- As part of this, the Council wished to develop a new Air Quality Strategy
 - Set out longer-term vision
 - Cover more pollutants and sources than the Air Quality Action Plan
 - More public-facing and informative
 - Highlight the actions the council is undertaking to address residents' concerns and improve quality of life for everybody in Ealing
 - Help residents lower their exposure to air pollution
 - Help residents lower their air pollution footprint
- Ricardo was commissioned to develop the strategy
 - We also updated their existing Air Quality Action Plan to ensure alignment
 - AQAP treated as live document, so kept up to date by Council



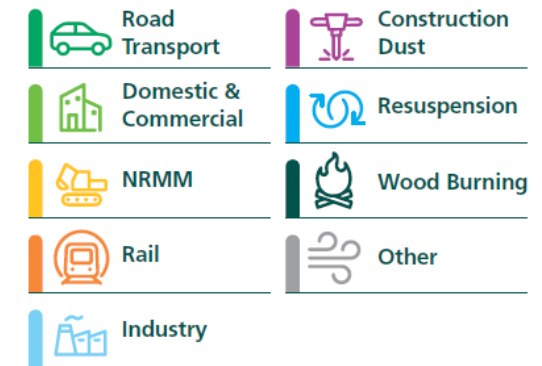
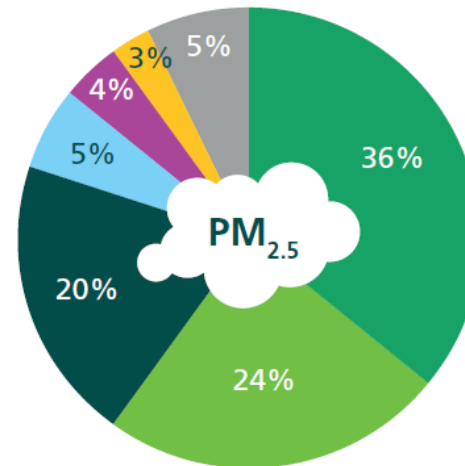
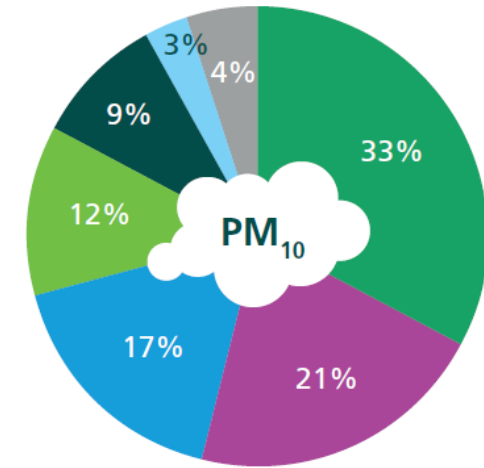
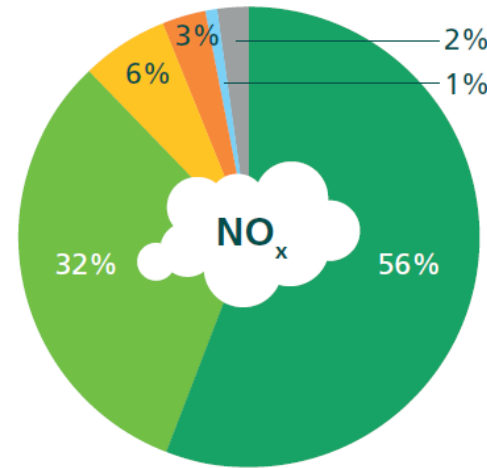
Our approach to developing an Air Quality Strategy



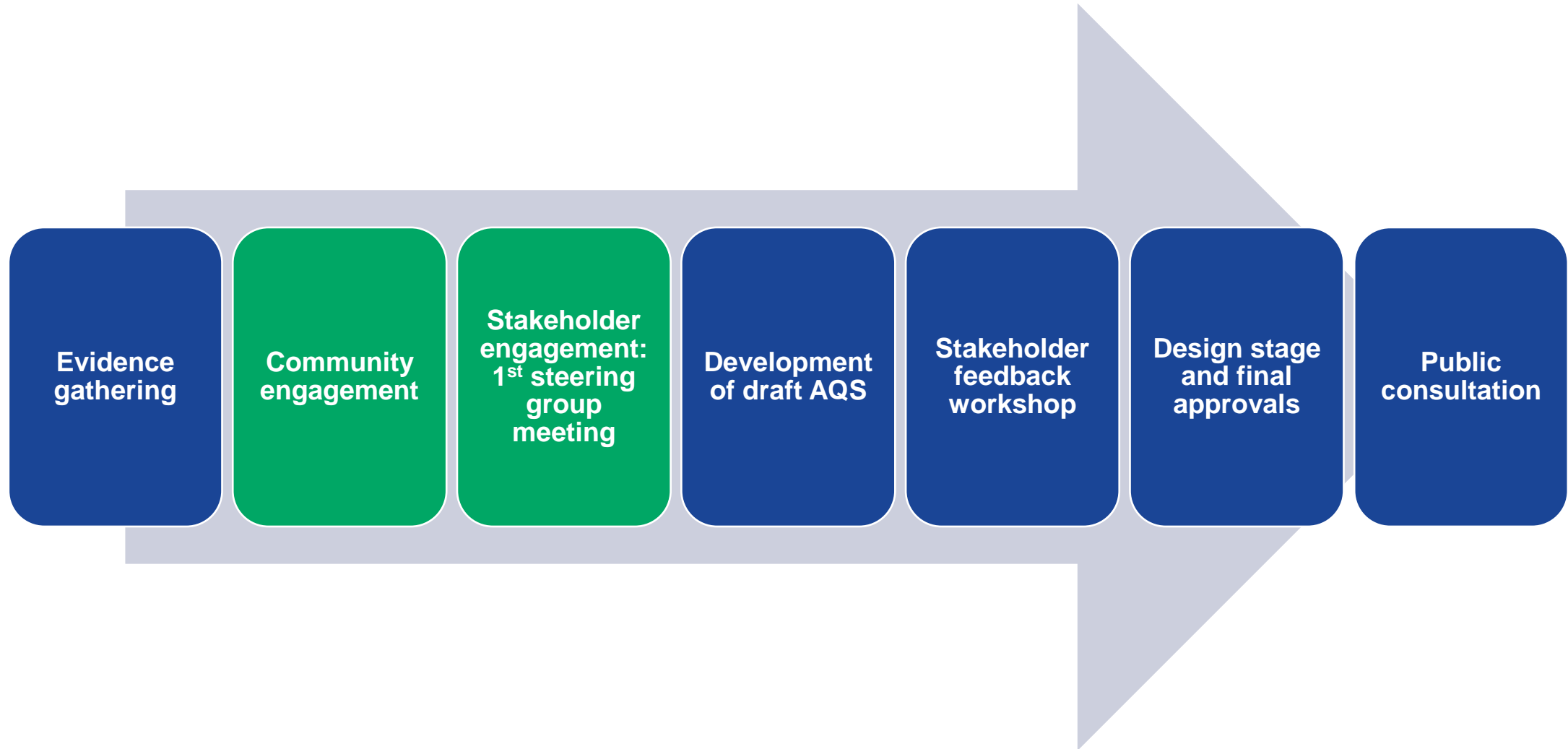
Policy and programme review and data gathering

Develop evidence base for Air Quality Strategy and Action Plan

- What is the current air quality situation?
 - Are there AQMAs?
 - Any other areas of concern?
- What are the key sources of air pollution and emissions in the area?
- Are there existing council plans which will deliver co-benefits for air pollution?
 - Transport initiatives to encourage modal shift
 - Measures in climate



Our approach to developing an Air Quality Strategy



Community engagement



Goals

- Identify what residents need/want from an Air Quality Strategy
- Explore residents' understanding and attitudes to air quality

What we did

- Online survey
- Focus groups with participants who expressed interest and were available

Overall thoughts

- Meetings were a success
- Mix of smaller and larger sessions
- Gave us a good mixture of “deep dives” and broader opinion-gathering
- People shared their opinions freely
- A range of opinions was expressed

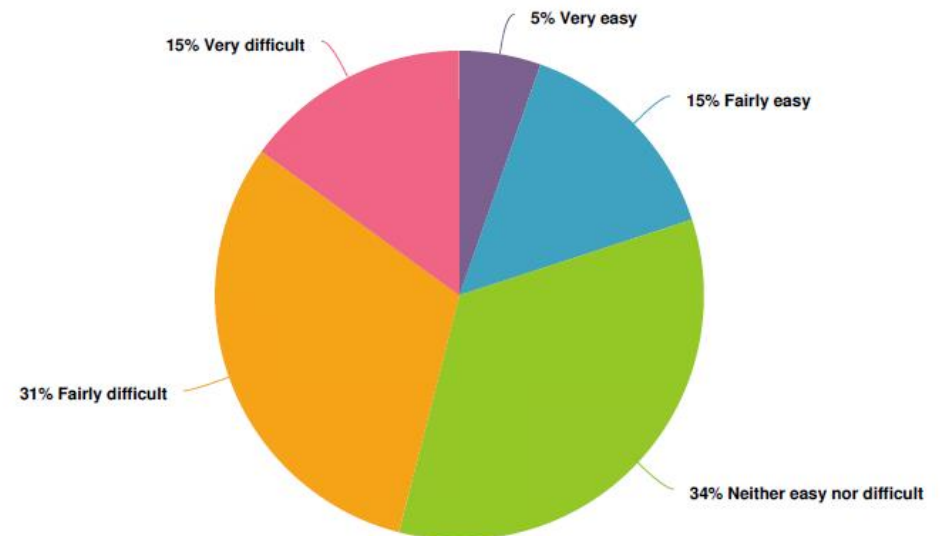
Key takeaways

Many residents don't know how to access air quality data

Traffic measures attracted most interest

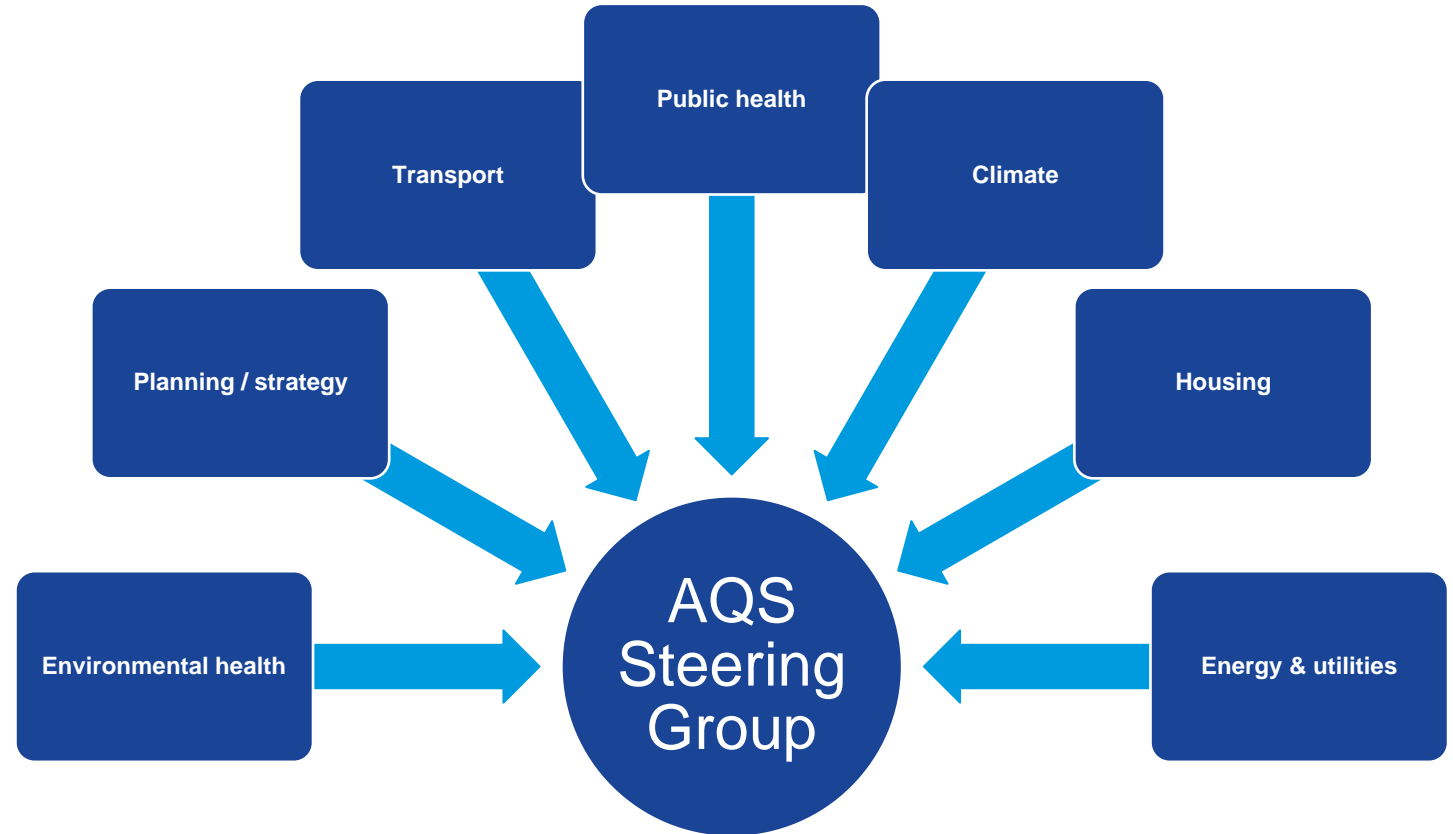
Ensuring fairness is key

6. In your experience, how easy or difficult is it to access local air quality information?

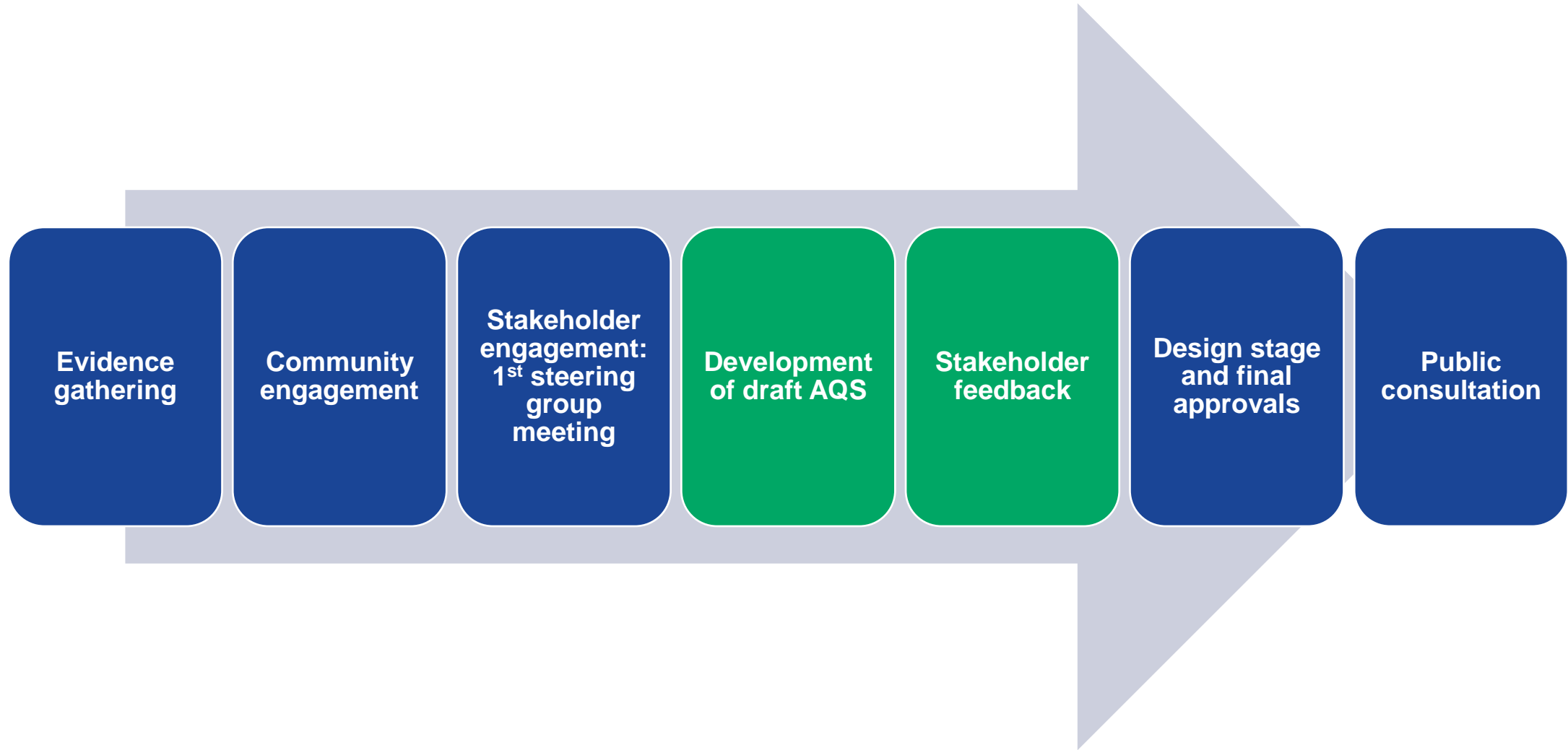


Stakeholder engagement

- Worked collaboratively with stakeholders in Council
 - Created a Steering Group including air quality, transport, planning, climate, public health, etc
- Review existing measures
 - Are these policies **still relevant**?
 - Can they be **refined**?
 - Are there potential issues with implementation?
 - What should be the **priority measures** in each category?
 - Are **additional measures** planned which are not included? Is there more we can do?



Our approach to developing an Air Quality Strategy



Building the narrative

Part 1: set out rationale for chosen measures

- Explain why an AQS was developed
- Explain health impacts of air pollution and current air quality in Ealing
- Explain where Council sits in relation to regional, national trends
- Present key sources of air pollution
- Set out council commitments around social equity and health inequalities

Part 2: describe actions in key themes

- Themes chosen based on council actions, stakeholder feedback and community engagement
 - Reducing road traffic emissions
 - Improving indoor air quality
 - Reducing the impact of new and existing developments
 - Green infrastructure
 - Raising awareness

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Building the narrative

Used a simple structure for each theme

- Improved legibility
- Readers can dip in to subjects they are interested in

For each theme

- Why is action needed?
- What is the Council doing now?
- What will the Council do next?
- Where to find more information

6 Reducing the impact of new and existing developments

Ealing has delivered one of the most ambitious house-building programmes in London and we will have built 2,700 genuinely affordable homes for people across the borough by 2022. The Council plans to continue this ambitious programme going forward.

However, new developments can introduce new emission sources and put additional pressure on areas that are already experiencing heightened air pollution levels. Demolition and construction activities, if not managed appropriately, can also result in emissions of particulates and dust, and involve the use of plant machinery. However, if planning is tackled correctly, it can improve air quality, create sustainable urban locations, improve health, and provide a better living environment. Local planning or placemaking can be used to improve and maintain good air quality.



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Reducing the Impact of new and existing developments

Section 6

6.1 What are we doing now?

Ensuring the Impacts of new developments are appropriately assessed – The Council’s Sustainable Design and Construction Supplementary Planning Guidance¹⁷ supports developers to achieve sustainable development, including through ensuring the developments are air quality neutral for buildings and transport. An air quality assessment would normally be expected for various types of development, for example proposals that will result in increased local vehicle trips or congestion, or those with a large number of parking spaces¹⁸.

Controlling emissions of odours and dust – To manage odours and dust from construction and commercial premises, the Council follows the Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance¹⁹. This provides detailed guidance to reduce emissions of dust, PM₁₀ and PM_{2.5} from construction and demolition activities.

Reducing emissions from plant machinery – Non-road mobile machinery (NRMM) includes any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road. NRMM, particularly from the construction sector, is a significant contributor to London’s air pollution. Emissions standards for diesel powered machinery are gradually getting tighter for NRMM in London, and by January 2040 only zero-emission machinery will be allowed.

Development needs to be sustainable, accessible, and equitable, to help reduce emissions

6.2 What are we doing next?

Ealing is expected to see ongoing development in the coming years, both to ensure improvements for local communities and to support forecast growth in the number of residents. Ealing are currently developing a new Local Plan, which will set out the vision for the borough and describe the safeguards to be adopted to ensure new development does not inhibit the Council’s air quality objectives.

Reducing the Impact of new and existing developments

Section 6

The Council has also pledged within its manifesto to:

- Launch a new tax on developers, and work towards raising at least £12 million per year to fund new infrastructure, education, health and community facilities.
- Create a new Local Plan to give residents and businesses confidence that our borough can change for the better in the coming decade.
- Implement a “retrofit first” principle for council buildings and deliver zero-carbon development as standard whilst ensuring any carbon offset payments that do occur are invested locally to make our borough greener.
- Resist any attempts by national government to reduce the level of power held by local authorities to decide on matters relating to planning.

We will continue to campaign for greater powers to regulate polluting industries, and for a Clean Air Act that gives us the tools we need to tackle poor air quality, mells and pollutants from industry and new developments.

| i Where to find more information | | |
|------------------------------------|--|--|
| Tool / Resource | Description | Link |
| RENEW and RE-FIT programmes | Government-led programmes to support energy efficiency at work and home. | https://www.london.gov.uk/what-we-do/environment/energy/renew-0 https://localpartnerships.org.uk/our-expertise/re-fit/ |
| The Energy Saving Trust | The Energy Saving Trust helps households, businesses, and organisations to save energy. | https://energysavingtrust.org.uk/ |
| Green Deal | The Green Deal is a government scheme, introduced in October 2012, designed to help homeowners and tenants to increase the energy efficiency of their homes. | https://www.gov.uk/guidance/getting-a-green-deal-information-for-householders-and-landlords |

Action Areas

- Local authorities are often large and diverse
 - Very different concerns in different areas
 - Air Quality Strategy partially designed to allow the council to address local concerns
- The flexibility of the Air Quality Strategy format allowed the Council to deal with particular issues on a case-by-case basis as well as setting out long term plans
- Following community and stakeholder feedback, decided to include Area Spotlights highlighting relevant issues for local areas where residents had raised concerns
 - Information on the area
 - Highlight local sources or issues
 - Local actions to improve air quality



Additional air quality monitoring

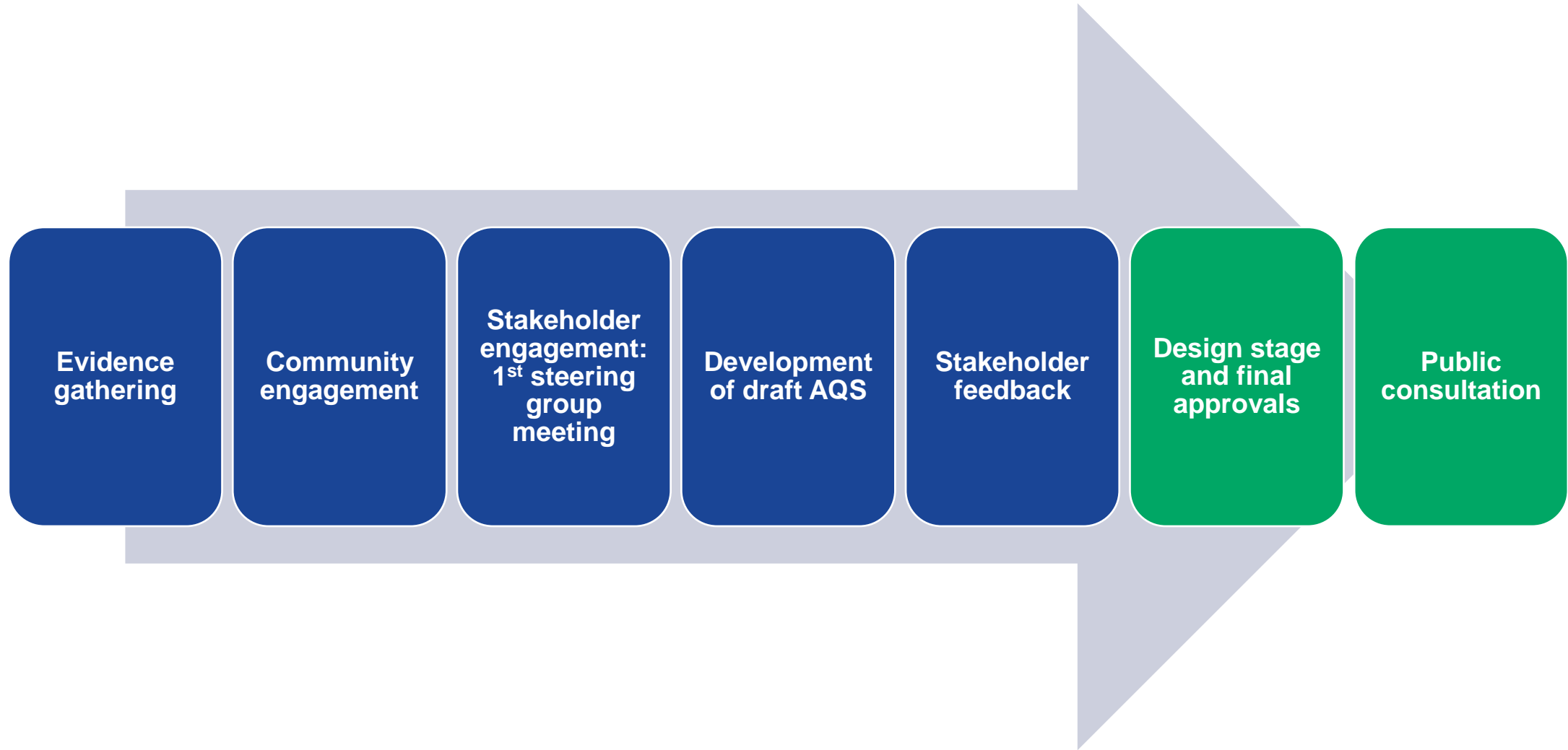


Independent soil monitoring



Improved green spaces as part of redevelopment plans

Our approach to developing an Air Quality Strategy



Design stage

- Council and Councillors reviewed documents
 - Easiest to make changes before the design stage
 - Provided incredibly valuable local nuance and understanding
- Ricardo's Design team turned our word document into something eye-catching and accessible
- Meetings with Council Communications team
 - Brand guidelines
 - Accessibility requirements
 - Fonts, spacing, etc
 - Screen readers
- Design team developed example pages for comments
- We provided basic sketches for infographics and text
 - Design team developed final versions
 - Passed back to Ricardo Air Quality team to check content, emphasis
- Meeting comms team early in the process helped us plan out the content to fit their expectations

An Air Quality Strategy for Ealing Section 1

1.4 How does this AQS align with other key policies?

This Strategy is aligned with national, regional, and local policies, plans, and strategies, that either directly or indirectly relate to improving air quality. By setting goals and targets at a national and local level, air pollution can be tackled from various perspectives and at a range of scales. The layers of local, regional, and national policy and initiatives relevant to the Air Quality Strategy are presented in Figure 1.1.

Figure 1.1: Local, regional and national policy, guidance and initiatives linked to the Air Quality Strategy

| National | | | | | |
|---------------------------------------|---|-------------------------------------|---|---|------------------------------|
| The Clean Air Strategy 2019 | | | DEFRA Local Air Quality Management Policy Guidance | | |
| Regional (London-wide) | | | | | |
| The Mayor's Air Quality Strategy 2016 | The London Environment Strategy 2018 | The Mayor's Transport Strategy 2018 | The London Health Inequalities Strategy | Mayor's Air Quality Fund 2019 | The Mayor's London Plan 2021 |
| Local | | | | | |
| Housing Strategy | Local Strategic Baseline plan 2018-2022 | Transport Strategy 2019-2022 | Air Quality Strategy (this document) | Health and Wellbeing Strategy 2016-2021 | |
| Local energy initiatives | Ealing Council Plan 2021-2022 | Cycle Plan 2019-2022 | Air Quality Action Plan (draft) | | |
| | Development Strategy 2012-2026 | Parking Plan | Climate and Ecological Emergency Strategy 2021-2030 | | |
| | Ealing Council Local Plan | | | | |

8 Ealing Council Air Quality Strategy

Why do we need to improve air quality?

What is nitrogen dioxide?

Has the chemical formula NO_2 , meaning that it has two oxygen atoms and one nitrogen atom. One of a group of gases called nitrogen oxides (NO_x). Red-brown in colour, but colourless in our air as it is very diluted. Released by burning fossil fuels and wood.

What is particulate matter?

Solid dust particles and liquid droplets. PM_{10} is all dust up to 10 μm wide; $\text{PM}_{2.5}$ is dust up to 2.5 μm wide. Contains a mixture of different chemicals, some of which are harmful to human health.

What are the potential health impacts of the different pollutants?

Particulate matter (PM_{10})

- Coarse particles can irritate the eyes, nose, and throat, cause increases in respiratory illness, and deterioration in cases of cardio-respiratory disease.

Fine particulate matter ($\text{PM}_{2.5}$)

- Fine particles which can enter deep into the lungs and even the bloodstream.
- Short term exposure (a few hours to weeks) can increase risk of cardiovascular disease.
- Longer term exposure (e.g. a few years) increases the risk for cardiovascular mortality to an even greater extent and reduces life expectancy.

Nitrogen dioxide (NO_2)

- Adverse effects of the respiratory system, irritation of the lungs and lower resistance to respiratory infections.
- Frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children.

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Why do we need to improve air quality? Section 2

2.2 Who is most vulnerable to air pollution?

Air pollution affects everyone who lives and works in Ealing. The most vulnerable groups include:

Elderly Those with lung disease Children Pregnant Women

Children exposed to $\text{PM}_{2.5}$ are more likely to have reduced lung function and develop asthma as they grow up.

Approximately 21% of Ealing's population is 15 and under, while 13% of the population is over the age of 65. Around 14% of the local population find that their day-to-day activities are limited in some way, or have a long-term health problem or disability.

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Public consultation

- The Council’s consultation team put up the consultation page
 - Links to Air Quality Strategy and Air Quality Action Plan (which was updated for release along with AQS)
 - Online survey
 - Opinions on individual measures
 - Open text responses for detailed response
- Council advertised on social media
- Leaflets were shared with libraries/residents’ associations
- Attended in-person events
 - Leaflets with QR codes etc
 - Paper copies of the strategy to go through
- Ran 2 online webinars explaining the strategy

The screenshot shows a consultation page with a green header. The title is 'Consultation on air quality strategy and air quality action plan'. Below the title is a breadcrumb trail: 'Home / Council and local decisions / Consultations / Current consultations / Consultation on air quality strategy and air quality action plan'. A green button labeled 'Council Services' is visible. The main content area includes an 'Introduction' section, a 'Your views' section, and a list of dates for online access. At the bottom, there is a gear icon.

The screenshot shows three survey questions. Question 5 asks 'How clear and easy to understand did you find the Air Quality Strategy on a scale of 1 to 5?' with a slider showing a rating of 4. Question 6 asks 'How informative did you find the Air Quality Strategy on a scale of 1 to 5?' with a slider showing a rating of 3. Question 7 asks 'Please select the areas of the Air Quality Strategy that you are most interested in' and lists four options with checkboxes: 'The case for improving air quality', 'The air quality challenges we currently face in Ealing', 'The actions the Council will take to improve air quality', and 'Advice for how you can reduce your air pollution footprint, and where to find more information about air quality'. There is also an 'Other (Please specify)' option with a text input field.

Challenges and lessons learned

Challenges

1. Range of stakeholders and potential audiences
2. Challenging organising feedback on draft documents – many stakeholders are very busy!
3. Design stage makes it more time-consuming to change things once the report has been converted

Lessons learned / advice

1. Engage with residents and stakeholders as early as possible
 - Make sure that the strategy addresses local concerns
 - Feedback on local issues was key to structuring the strategy
2. It's important to allow time for stakeholder feedback
3. Need to be strong on technical foundation
4. Work collaboratively with the Council on all aspects of the Strategy
 - Multiple revision stages, regular meetings to agree the direction of the Strategy as it developed
 - Minimise revisions once the design is finalised

Any Questions?



EMAQ+ provide training solutions to enable local authority officers and professionals working across public/private sectors.

EMAQ+ offer training solutions in eight categories by way of an on-line live, or pre-recorded webinars in:

- Air Quality
- Emissions Monitoring
- Contaminated Land
- Noise
- Waste
- Climate Change
- Water
- Odour management

Our Essentials courses are a combination of 5 individual modules. To obtain an endorsement in our Essentials syllabus you will need to pass an on-line Knowledge Check for each module and a final Proficiency Test. You will receive your endorsement by way of a CPD.

EMAQ+ also offer many ad hoc webinars and we have the below webinar available to view now. This supports the work carried out by Ricardo for the London Borough of Ealing as was presented as part of this slide pack.

[Air Quality Strategies: What are they, who will need one and how do they differ from AQAPs?](#)

Thank you for joining us!

