

Clearing the Air

Royal Borough of Kingston upon Thames
Annual Public Health Report 2018



THE ROYAL BOROUGH OF
KINGSTON
UPON THAMES

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Introduction

We all have a part to play in clearing the air.

Air pollution is the biggest environmental cause of ill-health in the UK, and Kingston is no exception. It is estimated to contribute to the equivalent of one in twenty deaths for people who live in the area.

Anyone who lives, works, studies or spends time in Kingston will be affected, but some people are more vulnerable than others. No safe levels have been identified for some types of pollution. Children, older people, those with health problems and those who live in deprived communities are the most affected by poor air quality, which has been linked to strokes, heart disease, asthma and progressive lung disease.

Exposure to air pollution should not be an inevitable part of living in outer London, but it is a complicated problem. Road traffic is the single biggest contributor to air pollution locally, which means that tackling this is the best place to start. From a local family choosing to walk or cycle to school instead of driving, to a local business training its drivers to stop engine idling, to Kingston University introducing hybrid buses for student transport, to the Council reducing traffic congestion, we all have a part to play.

One of the most important things that the public health system can do is to call to attention problems that affect the health of the whole population, so that we collectively repurpose efforts from treating illness to preventing it. Air quality is one of the most challenging public health problems and it requires a system-wide and community response to tackle it.

I am therefore proud to be working alongside so many local partners and stakeholders given we all have a part to play in reducing the impact of air pollution and clearing the air of Kingston.

Iona Lidington, Director of Public Health, June 2018



We can all play a part in reducing the impact of air pollution on the public's health



What is air pollution and where does it come from?

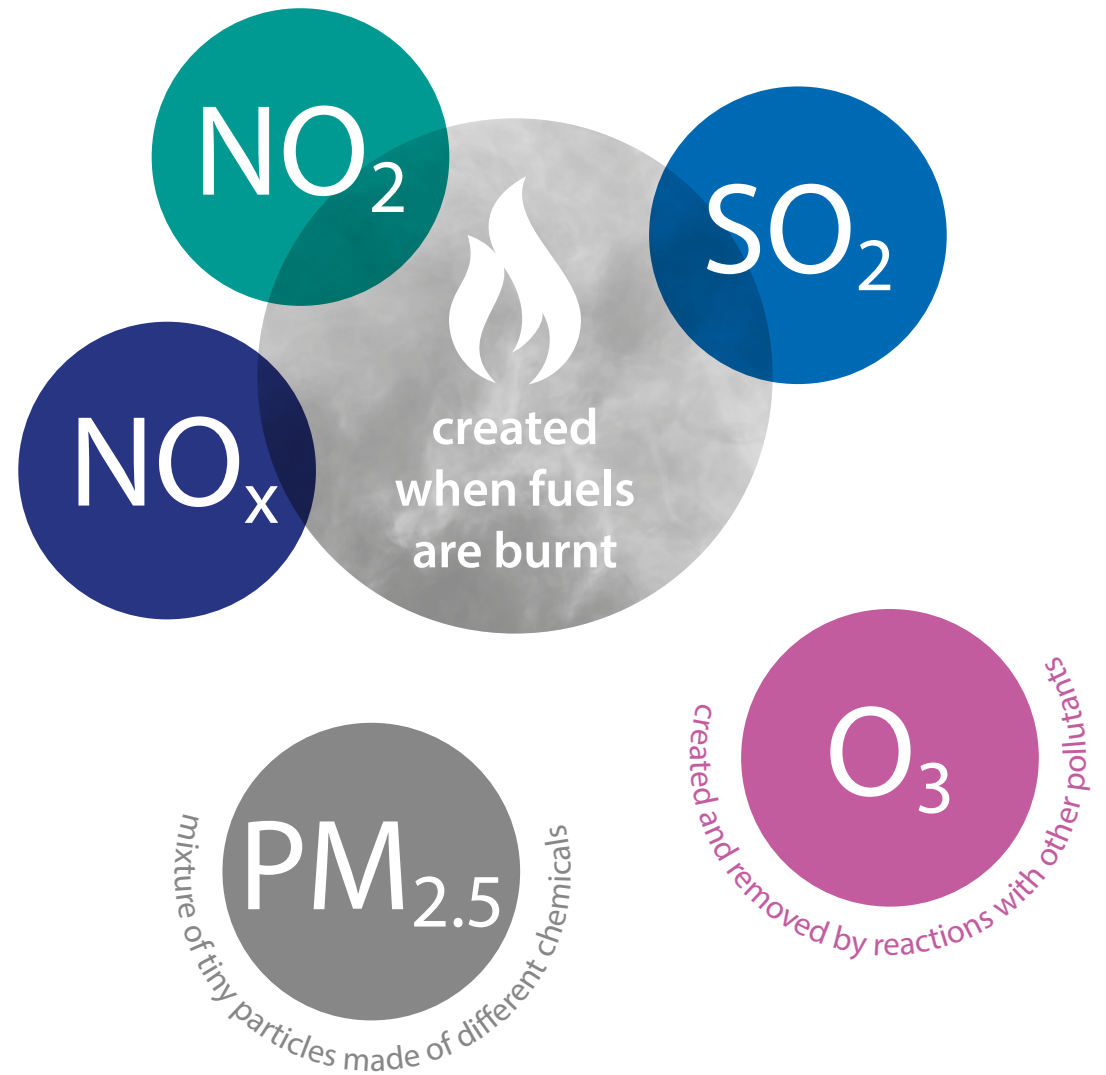
There are lots of types of air pollution

Particulate matter is a mixture of tiny particles made of different chemicals. The smallest ones, such as $PM_{2.5}$, can get deepest into our lungs.

Oxides of nitrogen (NO_x and NO_2) are gases which are produced when fuels are burnt.

Sulphur dioxide (SO_2) is a gas which is produced when fuels are burnt.

Ozone (O_3) is a gas made from oxygen in the Earth's atmosphere. It can be both created and removed by reactions with other pollutants.



What is air pollution and where does it come from?

Potential sources of air pollution

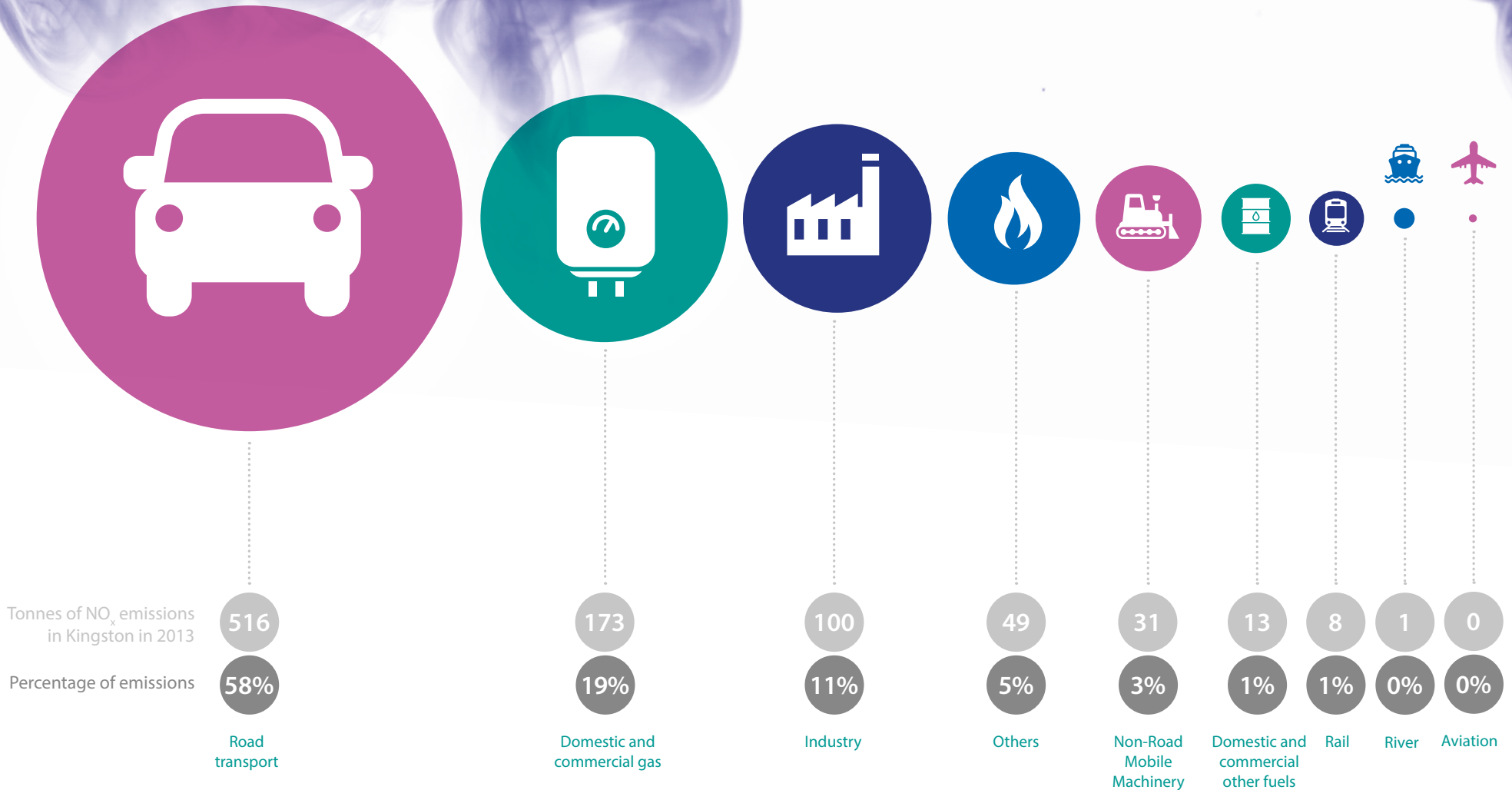
Air pollution can come from:

- Roads
- Construction
- Industry
- Agriculture
- Aviation
- Domestic sources (like boilers and fires)



What is air pollution and where does it come from?

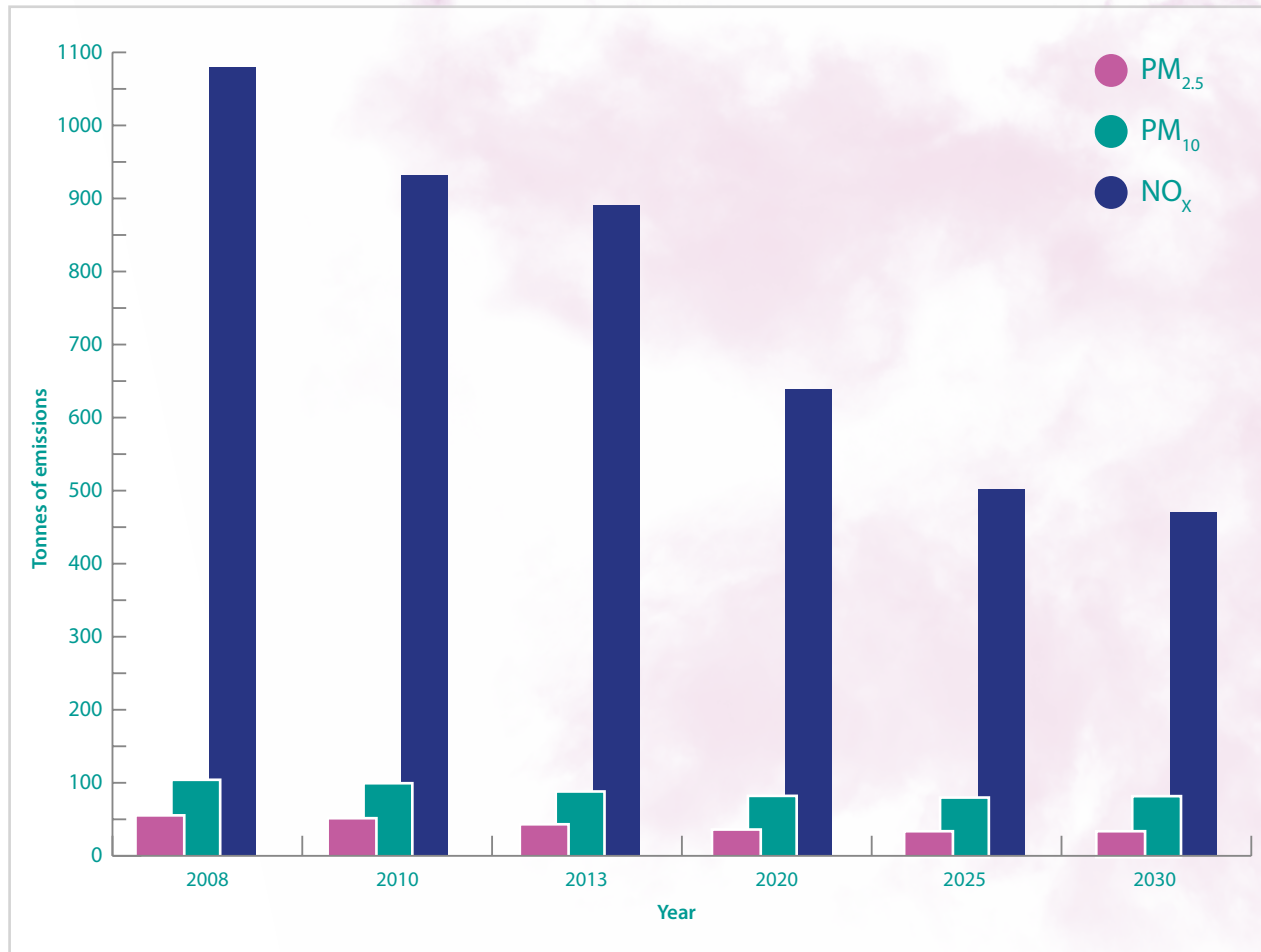
Where do NO_x emissions in Kingston come from?¹



What is air pollution and where does it come from?

Trends in air pollution in Kingston¹

Air pollution in Kingston has reduced since 2008 and is projected to reduce further, but only if enough action is taken.



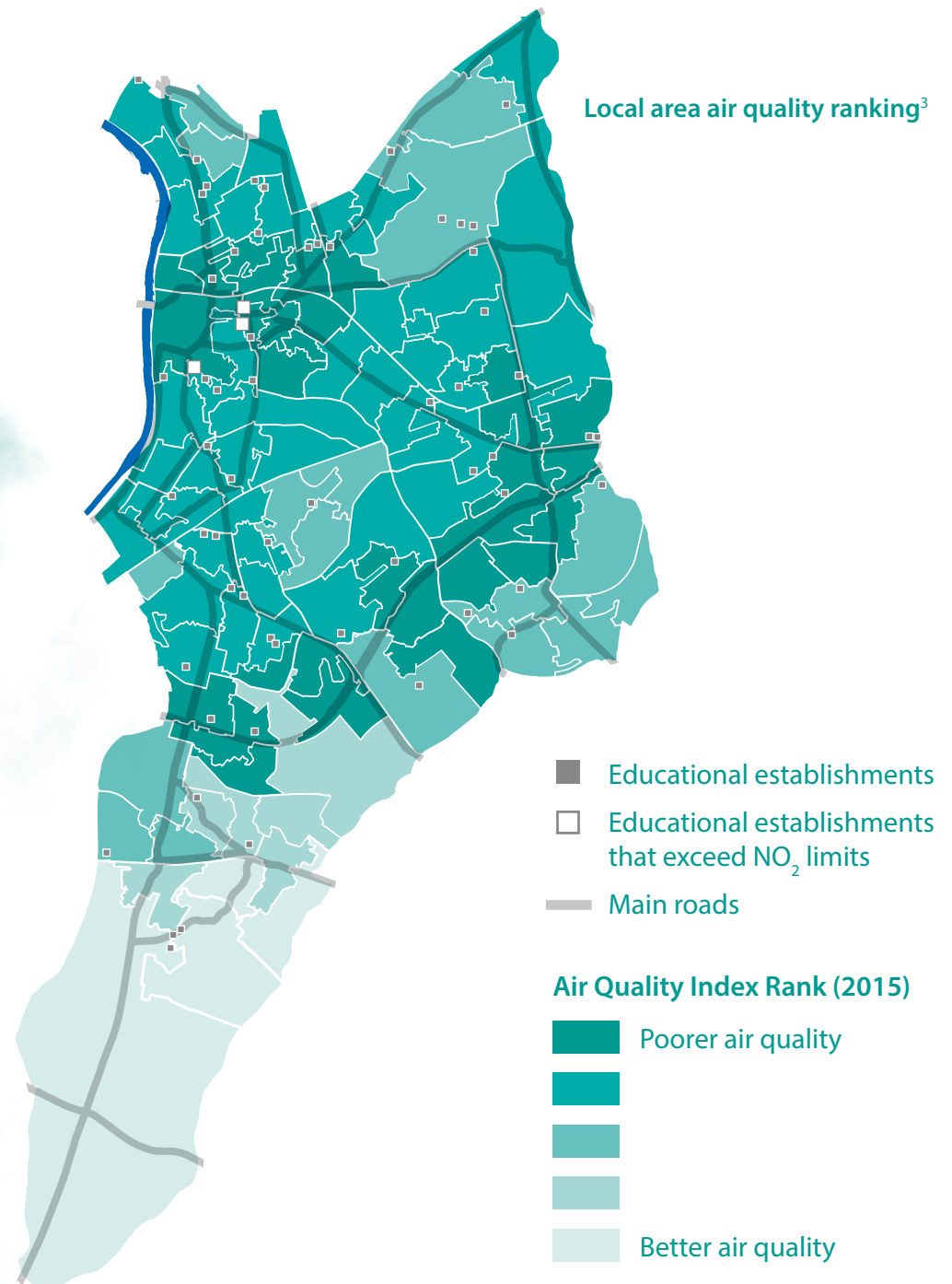
Road traffic is the main source of harmful air pollution in Kingston

What is air pollution and where does it come from?

Air quality in different parts of Kingston

Kingston's air quality is worst near busy roads.¹

Three educational establishments in Kingston are exposed to NO₂ levels above EU limit values.¹



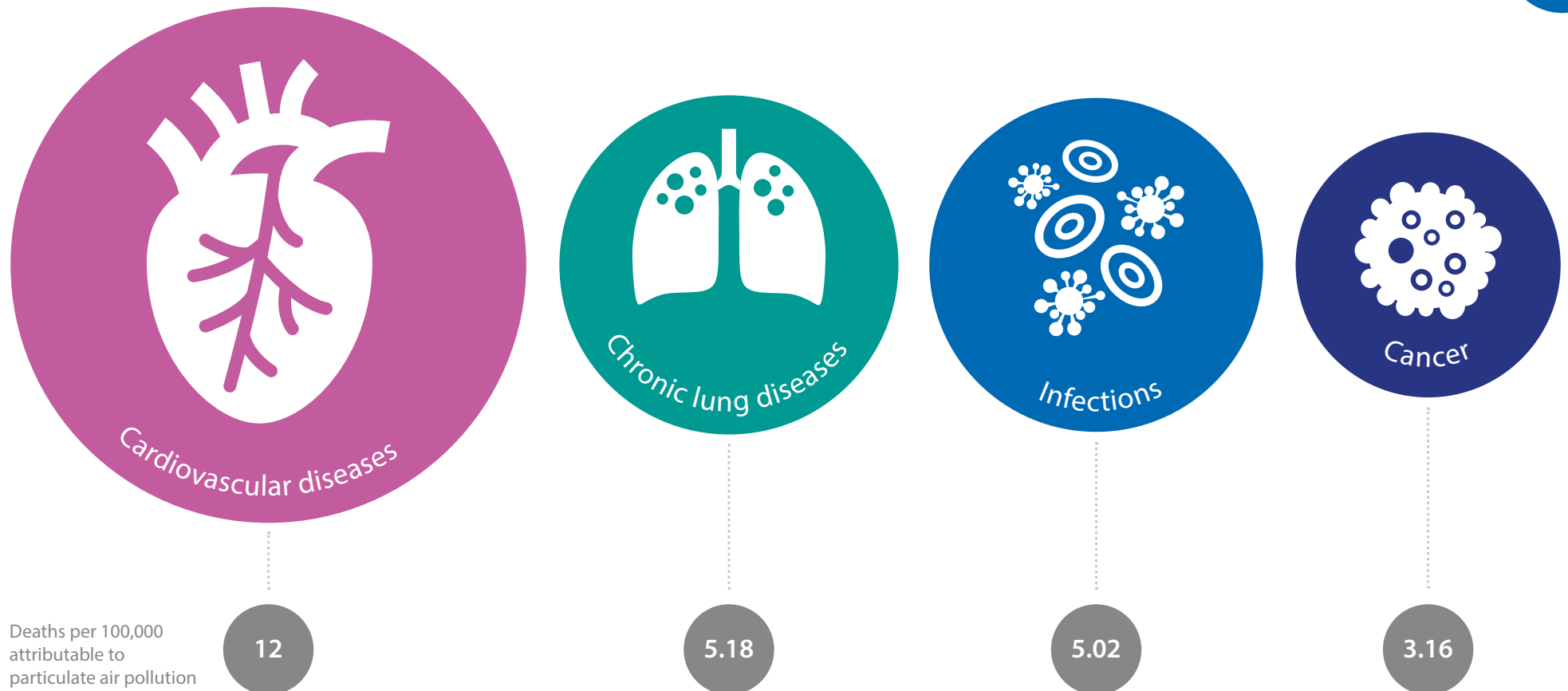
How does air pollution affect our health?

Contribution of air pollution to ill health

According to the Global Burden of Disease, air pollution is the biggest environmental cause of death in Greater London.⁴

It contributes to deaths from strokes, heart diseases, chest infections and cancer.⁵

Deaths around the world attributable to air pollution⁶



How does air pollution affect our health?

The main health impact of air pollution builds up over a long time and comes from exposure throughout life. It contributes to long-term illness as well as to deaths.

If babies born in London in 2010 were exposed to the same levels of particulate matter throughout their lives as they were at their birth, then on average, they would lose at least nine months of life expectancy.⁷

High short term levels of air pollution can also make existing health conditions worse and are linked to hospital admissions for heart conditions⁸ and lung problems such as asthma attacks.⁹



How does air pollution affect our health?

Air pollution and health inequalities

Air pollution affects some people more than others, either because they are exposed more or because they are especially vulnerable.¹⁰

Vulnerable groups include:

- Children
- Older people
- People with long term conditions
- Deprived communities (who may be exposed to more air pollution and are more likely to have health problems which make them vulnerable)

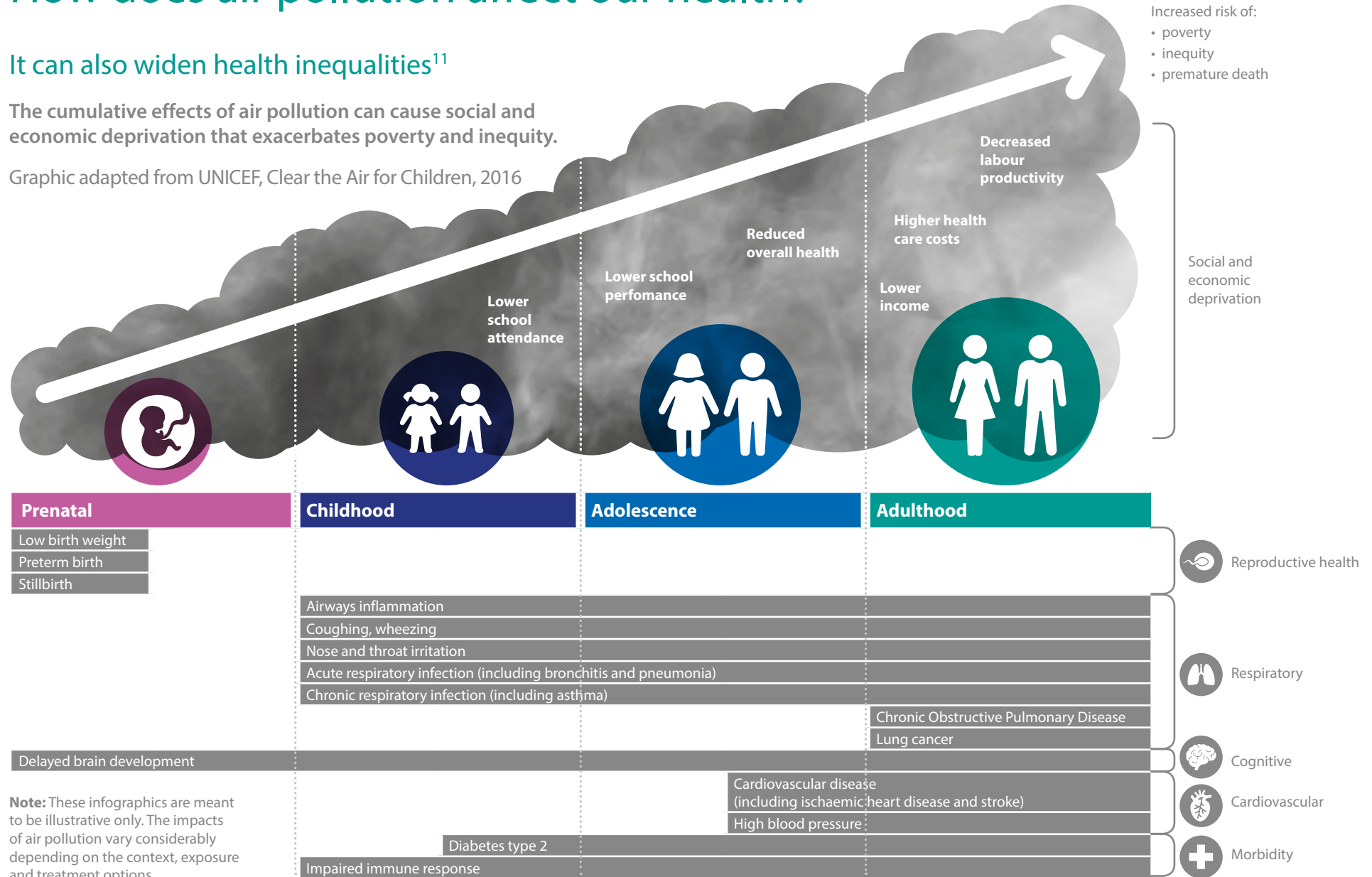


How does air pollution affect our health?

It can also widen health inequalities¹¹

The cumulative effects of air pollution can cause social and economic deprivation that exacerbates poverty and inequity.

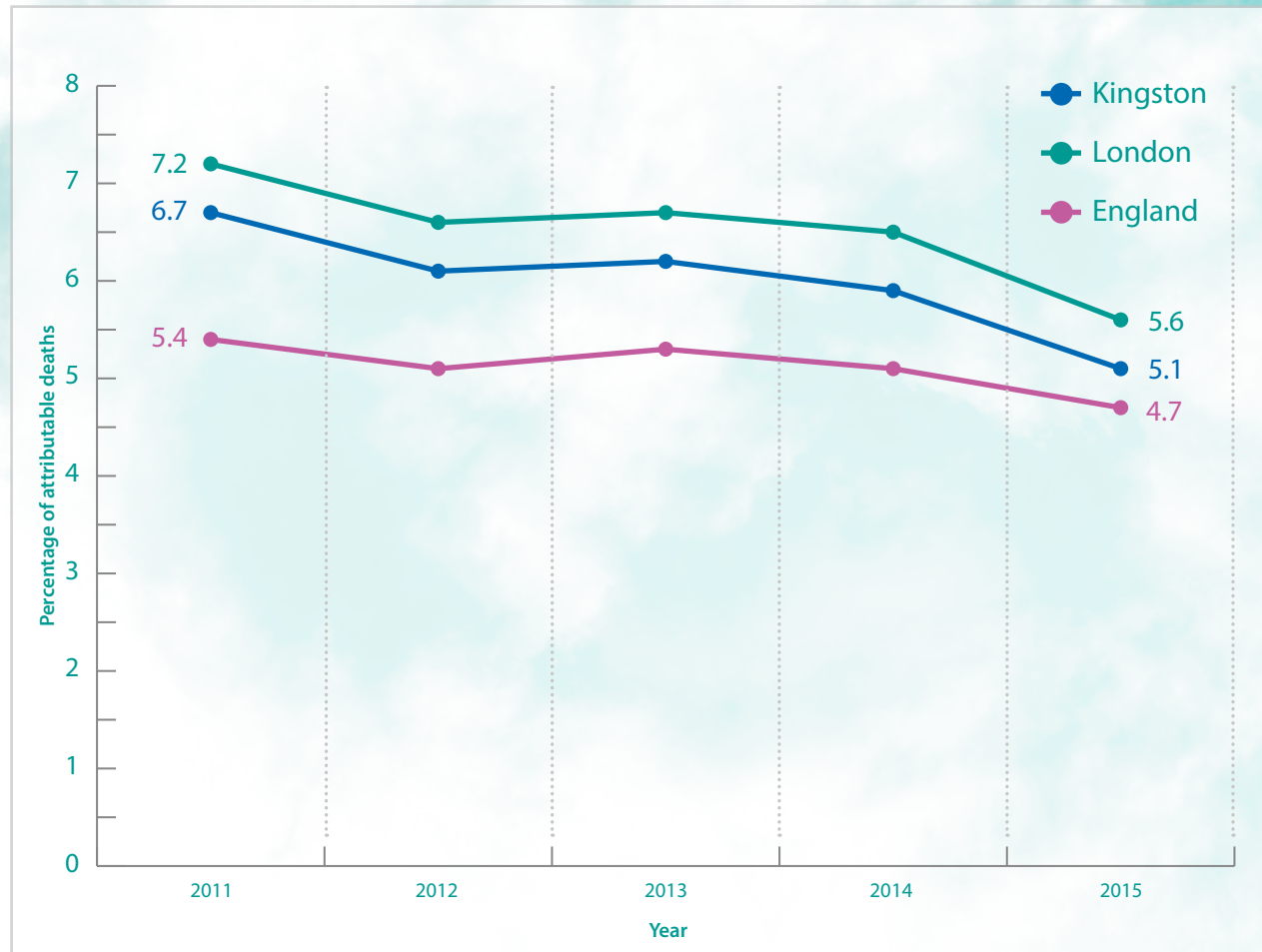
Graphic adapted from UNICEF, Clear the Air for Children, 2016



How does air pollution affect our health?

Health impact in Kingston

Exposure to particulates contributes to the equivalent of around one in twenty deaths in Kingston¹²



How can we reduce the impact of pollution?

Tackling road traffic

Reducing traffic congestion by reducing our reliance on motorised road transport is the best way to reduce the health impact of air pollution because it's responsible for such a big proportion of the problem.

According to the National Institute for Health and Care Excellence (NICE), there are seven ways to reduce the impact of air pollution from the roads:¹³

1. planning
2. development management
3. clean air zones
4. reducing emissions from public sector transport services and vehicle fleets
5. smooth driving and speed reduction
6. walking and cycling
7. awareness raising

Active transport and public realm improvements that reduce the use of cars are the best way to reduce the health impact of air pollution.



How can we reduce the impact of pollution?

Supporting walking and cycling is one of the most important things we can do because:

- It could reduce traffic congestion and emissions if fewer people travel by car, helping improve air quality overall
- Pedestrians and cyclists are exposed to lower concentrations of air pollution than people in cars¹⁴

Walking and cycling are also great ways to stay active, which is also important to our health.



How can we reduce the impact of pollution?

How to minimise the risk to your health

The Daily Air Quality Index from DEFRA tells you about levels of pollution and gives health advice about what to do, depending on your level of risk

Air Pollution Banding	Value	Accompanying health messages for at-risk individuals	Accompanying health messages for the general population
Low	1-3	Enjoy your usual outdoor activities.	Enjoy your usual outdoor activities.
Moderate	4-6	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.	Enjoy your usual outdoor activities.
High	7-9	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion.	Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors.
Very High	10	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.	Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.



What we're already doing

In 2016, Kingston Council published its Air Quality Action Plan. That year, the Council:

- Developed planning conditions to manage the air quality impact of new developments
- Called for improvements to bus routes and services to reduce the air quality impact
- Monitored and reported on air quality at more than 40 locations across the borough
- Trained 1,257 children in cycling (Bikeability level 2)
- Held 97 Go Cycle events
- Carried out 1,010 free bike checks
- Supported 348 people in Adult Cycle skills sessions
- Installed 13 new bike hangars in Council housing estates
- Opened a new segregated cycle route along Portsmouth Road
- Promoted walking routes around the borough

But there's still more we need to do, and everyone in Kingston has a part to play.

Kingston Council has an air quality action plan and an active travel programme



go
cycle



What more can we do?

Change one thing

If you're a local...	...you could
Resident	Try switching to walking and cycling for short journeys
Headteacher	Support active travel through initiatives like Walk to School and discourage parents who do drive from idling engines outside school gates
Employer	Support your staff to walk and cycle, for example by offering cycle parking and showers or by offering to pay mileage for cycle journeys
Business	Look into consolidating your deliveries to reduce congestion on the roads
Developer	Make sure you've assessed the air quality and public health impact of your work, and put plans in place to maximise the benefits and minimise the harms
Health professional	Make sure you know what the health effects of air pollution are, and what advice to give to people who are worried as well as promoting physical activity through active travel
Council officer	Read Kingston Public Health's Joint Strategic Needs Assessment on Air Quality and follow its recommendations (available at data.kingston.gov.uk/jsna)



We can all play a part in reducing the public health impact of air pollution



Footnotes

1. Source: London Atmospheric Emissions Inventory, 2013
2. Source: National Atmospheric Emissions Inventory
3. Lower Super Output Area (LSOA) ranking based on the air quality index with the Living Environment domain of the English Indices of Multiple deprivation, 2015
4. Source: Global Burden of Disease data available at <http://www.healthdata.org/gbd> (accessed January 2018)
5. Source: World Health Organisation, Burden of disease from ambient air pollution, 2012
6. Source: Adapted from data available from the Institute for Health Metrics and Evaluation (IHME) University of Washington, 2016. See <http://vizhub.healthdata.org/gbd-compare>. (accessed January 2018)
7. Source: King's College London, Understanding the health impacts of air pollution in London, 2015
8. Source: COMEAP, Cardiovascular disease and air pollution, 2006
9. Source: Orellano et al, Effect of outdoor air pollution on asthma exacerbations in children and adults: Systematic review and multilevel meta-analysis, PLoS One. 2017 Mar 20;12(3)
10. Source: Deguen S and Zmirou-Navier D, Social inequalities resulting from health risks related to ambient air quality—A European review, European Journal of Public Health, Vol. 20, No. 1, 27–35, 2010
11. Source: Graphic adapted from UNICEF, Clear the Air for Children 2016
12. Source: Public Health Outcomes Framework indicator 3.01
13. Source: NICE, Air Pollution and Health, Guideline NG70, 2017
14. Source: Cepeda M et al, Levels of ambient air pollution according to mode of transport: a systematic review The Lancet Public Health, Volume 2, Issue 1, January 2017, Pages e23-e34
15. Source: Greater London Authority, Health Impact of Cars in London, 2015
16. Source: Tainio et al, Can air pollution negate the health benefits of cycling and walking? Preventive Medicine Volume 87, June 2016, Pages 233-236

Find out more

More information about air quality and public health in Kingston is available in the Kingston Joint Strategic Needs Assessment chapter on air quality, available at data.kingston.gov.uk/jsna

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