


Air Quality and Health

Mike Sandys
Director of Public Health

Environment European smog could be 20% toxic than air pollution in

Much of the air pollution in China comes from natural
fuels that makes up most of the problem in the West

Ian Johnston Environment Correspondent | 17 days ago | 

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UK air pollution: How bad is it?

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Health warnings have been issued for parts of England, as air pollution
reaches high levels.
So what exactly is the problem, and how serious is it?

How bad is the pollution in the UK?

By UK standards, air pollution levels are high. The Department of the Environment
measures outdoor air pollution on a one-to-10 scale. Parts of north-west Norfolk hit

judged
nat



Department
for Environment
Food & Rural Affairs



Public Health
England



Air Quality

A Briefing for Directors of Public Health

March 2017



What are the main air pollutants?

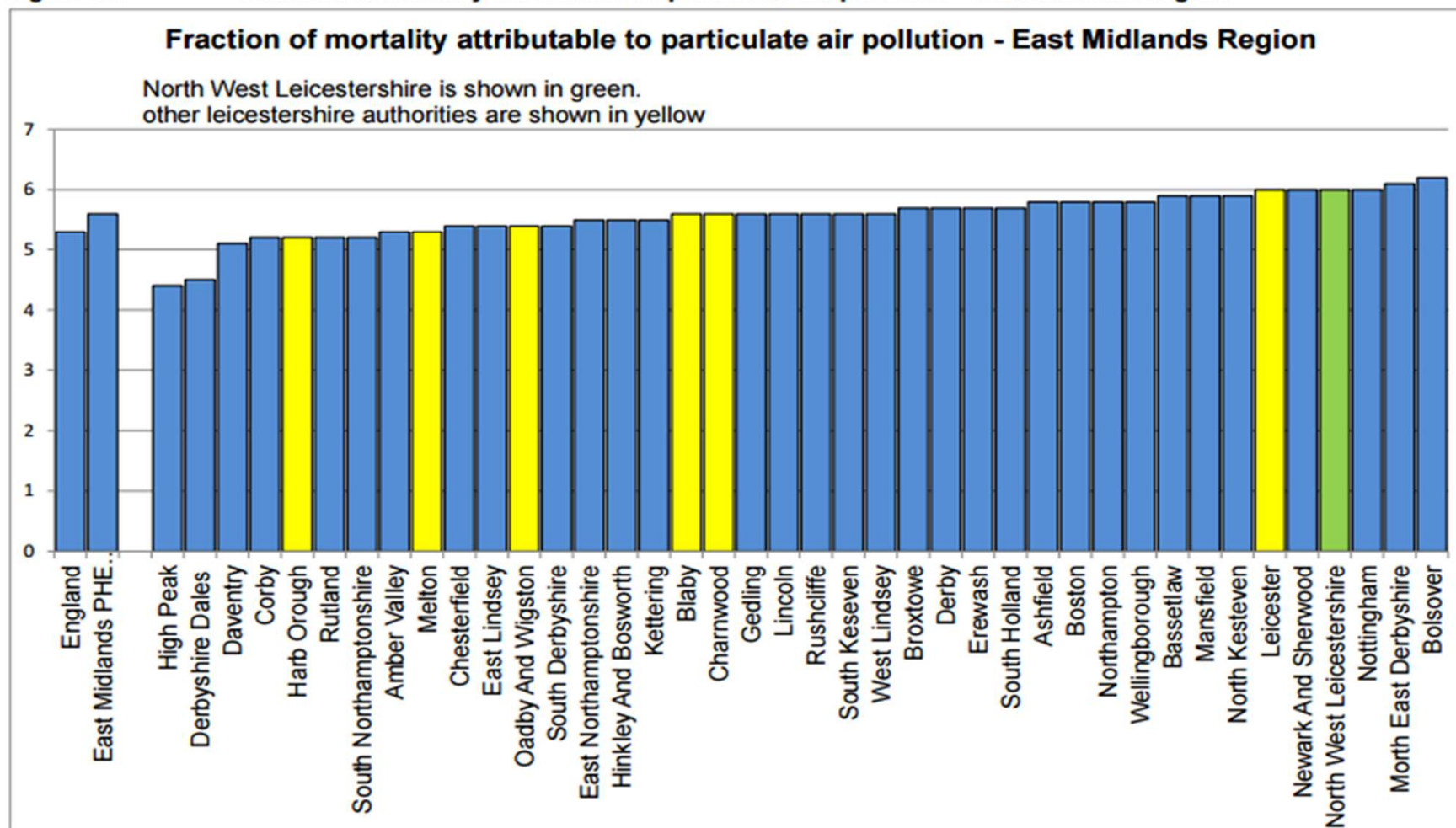
- Particulate matter (10/2.5), 55% from UK sources, 38% of UK emissions from household solid fuel but proportions vary strongly depending on location.
- Nitrogen Dioxide/Nitric Oxide (NO_x) – largest source nationally is transport, particularly diesel light duty vehicles (cars and vans).
- Sulphur Dioxide – 46% from power generation (coal)
- Ammonia - 80% of ammonia emissions from anaerobic digestion and fertilisers.
- Ozone
- Non-methane Volatile Organic Compounds (NMVOC's)

Effects on health

- Largest environmental risk to health, contributing to cardiovascular disease, lung cancer and respiratory diseases.
- PM2.5 has highest link to health outcomes
- Increased chance of hospital admissions, A&E, and respiratory and cardiovascular symptoms which interfere with everyday life.
- Long term impacts on all and immediate impacts on vulnerable people, with a disproportionate impact on the young and old.

North West Leicestershire District Council

Figure C.1 Fraction of Mortality attributable to particulate air pollution – East Midlands region



- Every Breath We Take: the Lifelong Impact of Air Pollution by the Royal College of Physicians states:
 - “Each year, inhaling particulates causes around 29,000 deaths in the UK, which, on recent evidence, may rise to around 40,000 deaths when also considering nitrogen dioxide exposure”
- Although their main estimate is of around 29,000 attributable deaths, **the figure could actually be between 5,000 to 60,000.**

UK Deaths per year attributable to:

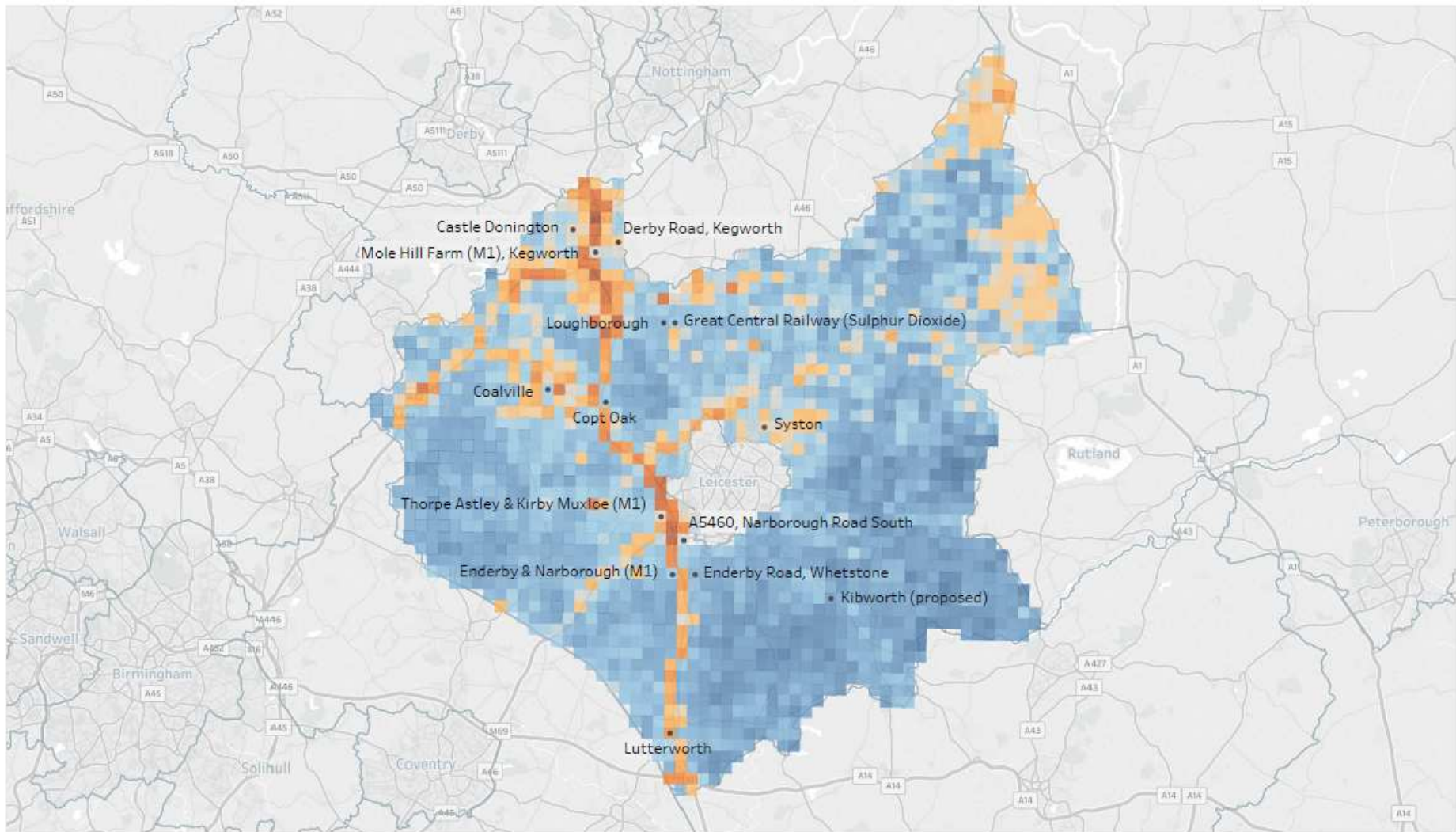
Smoking	80,000
Alcohol	8,758
Obesity	30,000
Drug misuse	3000
Excess Winter Deaths	30,000
Air Quality	40,000

If we substituted water for air – what would we tolerate, what would we do?

Sources of air pollution

- Road transport (particulate matter (PM) and NO₂)
- Industrial processes (PM and NO₂)
- Construction/non-road mobile machinery (localised PM and NO₂)
- Aircraft (NO₂ – particularly at take off)
- Farming (PM)
- Solid fuel heating (PM and NO₂)
- Bonfires/Fireworks (PM)
- Small changes in distance from source can make a big difference to exposure

Air Quality in Leicestershire: Particulate Matter (PM10)

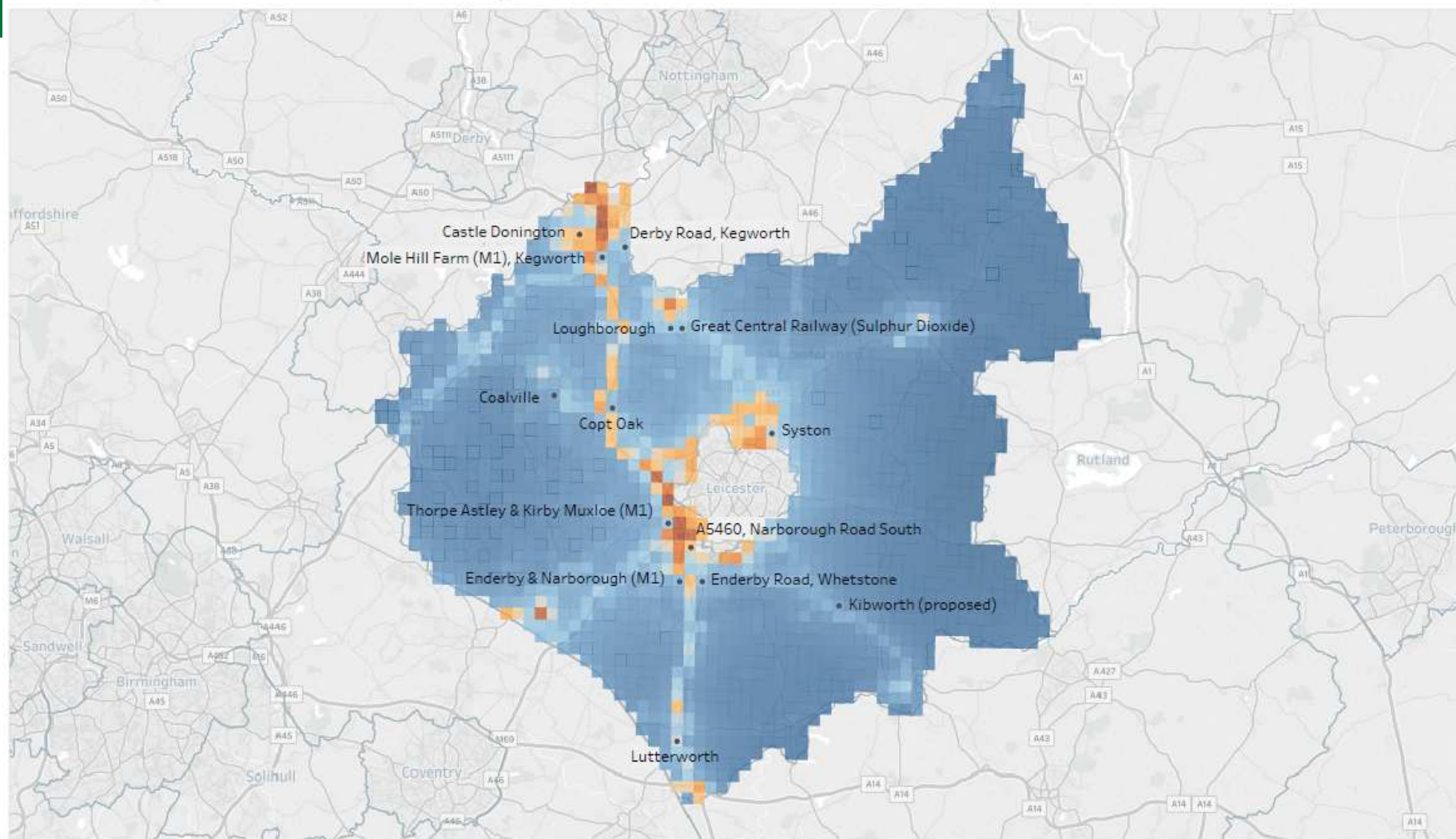


Please note, each square represents one Ordnance Survey 1km grid square.

Range of PM10 values throughout Leicestershire

13.6  21.0

Air Quality in Leicestershire: Nitrogen Oxide



Please note, each square represents one Ordnance Survey 1km grid square.

Range of NO_x values throughout Leicestershire

14.3 ————— 44.3

Source: DEFRA, 2013

Produced by the Strategic Business Intelligence Team, Leicestershire County Council, 2017.

- Existing powers:
 - Clean Air Act 1993 gives LA's powers to tackle local air pollution via Air Quality Management Areas AQMA's)
 - Environment Act 1995 puts an obligation on upper and lower tier authorities to work together in relation to air quality/AQMA's through upper tier role as local highway authority (LHA).
 - Council's Environment Strategy aims to reduce pollution.
 - DPH has a statutory duty to ensure plans are in place to protect the health of the population.

- Clean Air Strategy structured into key sections:
 - Understanding the problem
 - Protecting the Nation's health
 - Protecting the environment
 - Securing clean growth and driving innovation
 - Action to reduce emissions from transport
 - Action to reduce emissions at home
 - Action to reduce emissions from farming
 - Action to reduce emissions from industry
 - Leadership at all levels

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