

Throughout this document 'Devon' refers to the administrative area of Devon County Council and 'Torbay' refers to the administrative area of Torbay Council.

## Economic Prosperity, Health and Wellbeing

Poor air quality negatively affects human respiratory and cardiovascular systems and is linked to asthma and mortality. In the short-term, high pollution episodes, associated with heat waves for example, can contribute to premature death for people who are already vulnerable to daily changes in air pollutants. Anthropogenic particulate matter contributes to 29,000 premature deaths per year<sup>i</sup>, reduces life expectancy in the UK by six months and has a health cost of £19 billion<sup>ii</sup>. Populations particularly sensitive to the health effects of air pollutants include the elderly; pertinent in Devon and Torbay where the average age of residents is higher than the national average<sup>iii</sup>.



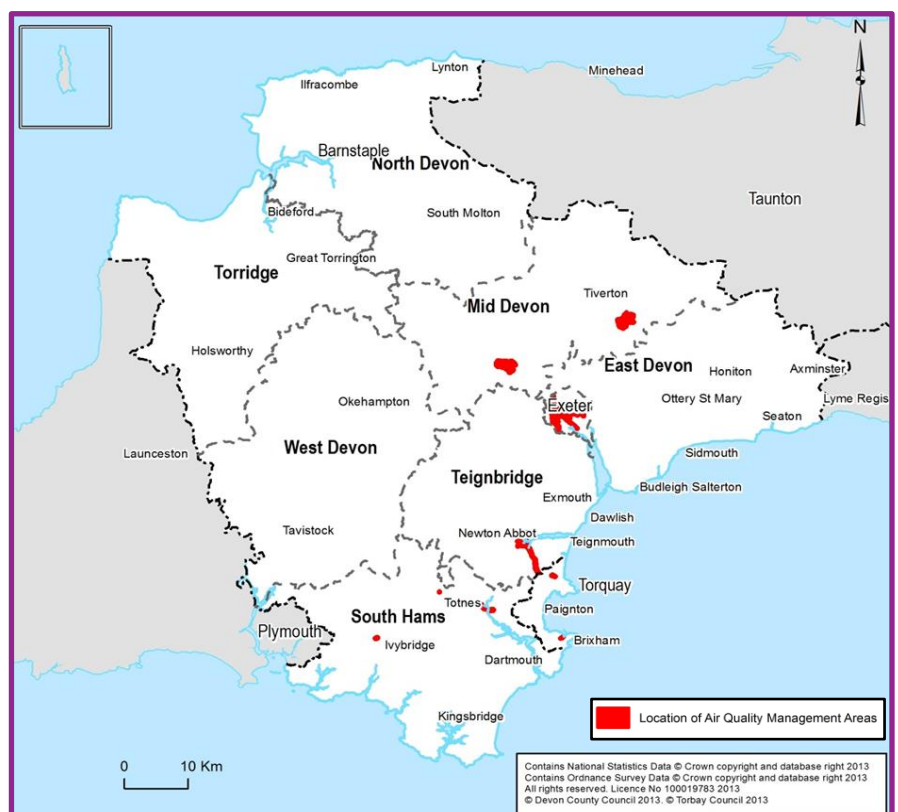
Park and Ride can help reduce the impact of traffic on local air quality

## Air Quality

Defra's Air Quality Strategy<sup>iv</sup> sets objectives for nine main air pollutants to protect health. These are benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide (NO<sub>2</sub>), polycyclic aromatic hydrocarbons (PAHs), ozone, particulates, and sulphur dioxide.

In locations where the national air quality objectives are not likely to be achieved, the local authority must declare an Air Quality Management Area (AQMA). There are 14 AQMAs in Devon and Torbay, detailed in Table 1 and shown in Map 1<sup>v</sup>. All are designated for excessive levels of

Map 1 – Location of Air Quality Management Areas in Devon and Torbay



NO<sub>2</sub> which is a pollutant from road traffic, which can cause increased vulnerability to respiratory infection and may

cause infection of the lungs<sup>vi</sup>.

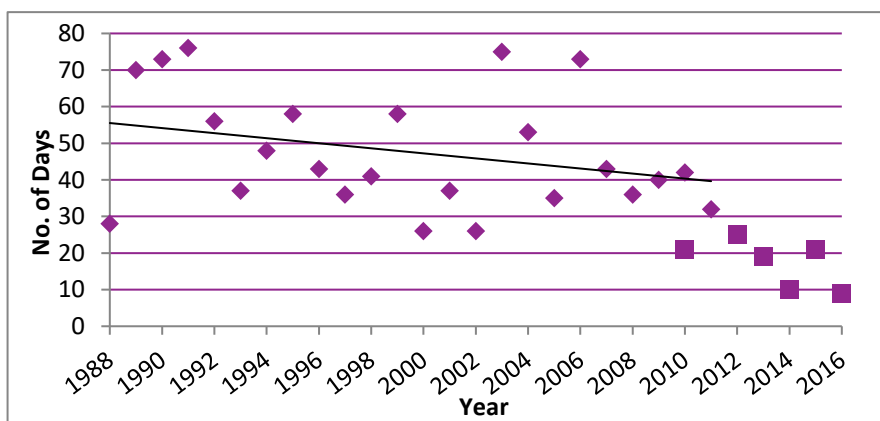
**Table 1 – AQMAs in Devon and Torbay**

AQMA	Local Authority	Pollutants	Year Declared
Ivybridge	South Hams	NO <sub>2</sub>	2009
Totnes	South Hams	NO <sub>2</sub>	2009
A38	South Hams	NO <sub>2</sub>	2005
Teignmouth	Teignbridge	NO <sub>2</sub>	2007
Newton Abbot	Teignbridge	NO <sub>2</sub>	2007
Dawlish	Teignbridge	NO <sub>2</sub>	2007
Kingskerswell	Teignbridge	NO <sub>2</sub>	2007
Cullompton	Mid Devon	NO <sub>2</sub>	2006
Crediton	Mid Devon	NO <sub>2</sub> , PM <sub>10</sub>	2004
East Devon	East Devon	NO <sub>2</sub>	2011
Exeter	Exeter	NO <sub>2</sub>	2005
North Devon	North Devon	NO <sub>2</sub>	2011
Brixham	Torbay	NO <sub>2</sub>	2006
Hele Road	Torbay	NO <sub>2</sub>	2005

In addition to NO<sub>2</sub>, the Crediton AQMA is designated for excessive levels of particulate matter below 10 microns in diameter (PM<sub>10</sub>), which is predominantly emitted from diesel engines without particulate filters. The fraction of mortality attributable to particulate air pollution in Devon and Torbay is 3.8% and 4.4% respectively. This is below the England and southwest averages of 4.7% and 4.3%<sup>vii</sup>.

Figure 1<sup>viii</sup> shows that air quality at Yarner Wood, Defra’s air quality monitoring station in Devon, has improved since 1988. Instances of

moderate and high air pollution in Devon are generally attributable to high levels of ground level ozone (O<sub>3</sub>). At the moderate level, the effects of pollution may be noticeable to people with respiratory and other health problems<sup>ix</sup>. O<sub>3</sub> is formed by chemical reactions between NO<sub>2</sub> and hydrocarbons in the lower atmosphere and is therefore influenced by the emissions from power generation and motor vehicles. Concentrations tend to be higher at the coast and high altitudes because high sunshine levels promote the photochemical reactions that generate O<sub>3</sub>. It is likely that advancements in vehicle efficiency and low emission engines will contribute to future improvements.



**Figure 1 - Number of Days When Air Pollution is Moderate or Higher at Yarner Wood, Dartmoor. Trend line applies to ‘Pre 2012 Thresholds’ data only.**

<sup>i</sup> Committee on the Medical Effects of Air Pollutants (2010) *The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom*. Crown Copyright.

<sup>ii</sup> Defra (2010) *Air Quality Appraisal – Valuing Environmental Limits*. Defra. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/182393/air-quality-valuing-env-limits-100303.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182393/air-quality-valuing-env-limits-100303.pdf)

<sup>iii</sup> Office for National Statistics (2013). *2011 census ks102ew – age structure*. Office for National Statistics. Download available at: <http://www.nomisweb.co.uk/> (Accessed 02/05/2013)

<sup>iv</sup> Defra (2007) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland*. Download available at: <https://www.gov.uk/government/policies/protecting-and-enhancing-our-urban-and-natural-environment-to-improve-public-health-and-wellbeing>

<sup>v</sup> Defra (2014) *List of Local Authorities with AQMAs*. Defra. Available at: <http://uk-air.defra.gov.uk/aqma/list>

<sup>vi</sup> Defra (2013) *AQMAs declared by Local Authority*. Defra. Available at: <http://aqma.defra.gov.uk/aqma/list.php> (Accessed 03/05/2013)

<sup>vii</sup> Public Health Outcomes Data Tool (accessed 2017) *Fraction of mortality attributable to particulate air pollution*. Public Health England. Available at: <http://www.phoutcomes.info/public-health-outcomes-framework#gid/1000043/pat/6/ati/102/page/0/par/E12000009/are/E10000008>

<sup>viii</sup> Defra (2012) *Number of days when air pollution is moderate or higher in the UK, 1987 to 2011 (detailed data)*. Available at: <http://data.gov.uk/dataset/days-when-air-pollution-is-moderate-or-higher-1987-to-2010/resource/1a1b3bfb-d150-4c4d-a6c1-42be0474dfff>

Combined with

Defra (2014) *Number of days when air pollution is moderate or higher in the UK, 2010 to 2016 (detailed site data) - revised threshold*. Available at: <https://www.gov.uk/government/statistical-data-sets/env02-air-quality-statistics>

<sup>ix</sup> Defra (2013) *Defra National Statistics Release: Air Quality Statistics in the UK, 1987 to 2013*. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/305145/National\\_Statistic\\_on\\_Air\\_Quality\\_2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/305145/National_Statistic_on_Air_Quality_2013.pdf)