

Working together



A CLEAN AIR STRATEGY FOR SOUTH HAMS AND WEST DEVON INCORPORATING THE AIR QUALITY ACTION PLANS

April 2018

www.southhams.gov.uk/airquality

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Foreword



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Executive Director

South Hams District and West Devon Borough Councils recognise the importance of the environment in protecting and promoting good health of their residents.

While air quality is generally good across the two areas, there are a number of hot spots of concern in South Hams and as such the Council has declared 3 air quality management areas being;

- an area on Western Road, Ivybridge
- an area of the A38 running through Dean Prior
- an area of the A385 stretching from True Street Junction, Berry Pomeroy and Clay Lane, Dartington

In West Devon there are currently no Air Quality Management Areas, although monitoring is undertaken. This strategy seeks to ensure that there is no degradation of the situation, but should a declaration need to be made in the future a solution can be implemented quickly.

This document highlights the problems facing air quality in the two areas, details the proposed planning policies guidance for developers and places the proposed air quality action plans into a single strategic document for the two areas. The aim of which is to identify best practice solutions to improve and protect air quality across the area.

South Hams and West Devon are sited within the Devon County Highway Authority area and have a number of strategic transport networks running through them. This document has been produced with our partners and neighbouring authorities and is viewed as providing an essential strategy for protecting and improving air quality in the region.

Table of Contents

| | |
|---------------------------|---|
| Foreword | |
| 1 Executive Summary | 5 |

| | | |
|-----|---|----|
| 1. | Policy Context | 8 |
| 1.1 | Local Air Quality Management | 8 |
| 2. | Baseline Information | 9 |
| 2.1 | South Hams and West Devon Population data | 9 |
| 2.2 | South Hams and West Devon Traffic information | 9 |
| 2.3 | National Trends in Vehicle Types | 9 |
| 3. | Air Pollution in South Hams and West Devon | 11 |
| 3.1 | Existing Air Quality Management Areas | 11 |
| | Figure 3.1 Map showing AQMA for Totnes declared in 2015 | 12 |
| | Figure 3.2 Map showing AQMA for Ivybridge declared 2009 | 13 |
| | Figure 3.3 Map showing AQMA for Dean Prior declared 2005..... | 14 |
| 3.2 | Industry within South Hams and West Devon: Part A and B Processes | 15 |
| 3.3 | Road Traffic Pollution | 15 |
| 4. | Health effects of Air Pollution | 17 |
| 4.1 | Health Related to NO2 exposure | 17 |
| 4.2 | Health related to Particulate Matter Exposure | 17 |
| | | 19 |
| 5. | Local Policies, Programmes and Strategies | 20 |
| 5.1 | The Joint Local Plan Overview..... | 20 |
| 5.2 | Joint Local Plan Planning Policies | 20 |
| 5.3 | Development within the South Hams and West Devon | 21 |
| 5.4 | The role of Highways England and Devon County Council | 21 |
| 5.5 | Taxi Licensing Policy | 22 |

| | | |
|-----|--|----|
| 6. | Planning and Air Quality: Guidance for Developers | 23 |
| 6.1 | How can planning impact on air quality? | 23 |
| 6.2 | When should a planning application be accompanied by an air quality assessment? | 24 |
| 6.3 | How do I Prepare an Air Quality Assessment?..... | 25 |
| 6.4 | What are suitable off-setting measures?..... | 26 |
| 7. | Strategy to Reduce Emissions of PM2.5 in South Hams and West Devon | 27 |
| 7.1 | Why do we need to reduce emissions of PM2.5? | 27 |
| 7.2 | Monitoring of PM2.5 in South Hams and West Devon | 27 |
| 7.3 | Measures to Reduce PM2.5 | 27 |
| 8. | The Air Quality Action Plans for South Hams | 28 |
| 8.1 | The Air Quality Working Group Overview | 28 |
| 8.2 | Air Quality Action Plan | 28 |
| 8.3 | Consultation Overview | 28 |
| 8.4 | Nitrogen Oxides/ Nitrogen Dioxide (NO _x / NO ₂) | 29 |
| 8.5 | Evaluating options for Air Quality | 29 |
| 8.6 | Monitoring of the Air Quality Action Plan | 30 |
| | Air Quality Action Plan for Ivybridge | 31 |
| | Ivybridge option 1: Removal/alteration to parking along Western Road..... | 31 |
| | Ivybridge option 2: A Southern Link Road from St. Peters Way to the A38 Junction | 32 |
| | Map showing location of Option 2 | 33 |
| | Ivybridge option 3: A new junction onto the A38 serving the East of Ivybridge | 33 |
| | Ivybridge option 4: Promotion of Ultra Low Emission Vehicles (ULEVs) | 34 |

| | |
|--|----|
| Ivybridge option 5: Promotion of Green Travel Vouchers | 34 |
| Ivybridge Option 6: Developers to pay for Green Travel Planning | 35 |
| Ivybridge option 7: Compulsory/Voluntary Purchase of the principle at risk residential premises. | 36 |
| Air Quality Action Plan for Totnes..... | 37 |
| Totnes option 1: Changes to the nature of pedestrian crossings along the A385..... | 37 |
| Totnes option 2: A Bypass to Totnes | 38 |
| Map showing potential location of Option 2 A Bypass to Totnes | 38 |
| Totnes option 3: Promotion of public transport alternatives for commuting traffic | 39 |
| Totnes option 4: Promotion of Ultra Low Emission Vehicles (ULEVs) | 39 |
| Totnes option 5: Promotion of Green Travel Vouchers | 40 |
| Totnes Option 6: Developers to pay for Green Travel Planning | 40 |
| Totnes option 7: Compulsory/Voluntary Purchase of the principle at risk residential premises. | 41 |
| Air Quality Action Plan for Dean Prior | 42 |
| Dean Prior Option 1: Reduction in the speed limit along the stretch of the A38 in the AQMA | 42 |
| Dean Prior Option 2: Installation of an engineered road side barrier | 43 |
| Dean Prior Option 3: Tree planting on verge adjacent to the houses | 43 |
| Dean Prior option 4: Compulsory/Voluntary Purchase of the principle at risk residential premises. | 43 |
| Shortlist of options | 44 |
| Generic shortlist | 44 |
| Shortlist of options for Totnes | 44 |
| Shortlist of options for Ivybridge | 45 |

Shortlist of options for Dean Prior
45 References
..... 46

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Executive Summary

Currently there are three air quality management areas (AQMAs) declared in the South Hams and none in West Devon. The air quality action plans to support these declarations are out of date and in need of review, hence the production of this strategy.

The first AQMA was declared in 2005 for an area adjacent to the A38 at Dean Prior, further AQMAs were declared for Ivybridge and Totnes in 2009 by South Hams District Council. In 2016 having undertaken further assessments the AQMA for Totnes was amended and extended, triggering the need to review the AQAP for the area.

All three AQMAs were declared on the basis of exceeding the National Air Quality Strategy annual mean objective for Nitrogen Dioxide, with road traffic being the predominant source of pollution.

This strategy was developed with the aim of formalising the Councils' approach to dealing with air quality through the development management process with the key aim of protecting and improving the air quality of the region.

South Hams and West Devon Councils will continue to monitor the air quality across the two areas in order to monitor the impact of the action plans. This strategy, has the two general aims of being in a position to revoke the existing AQMAs in South Hams and ensure that no further AQMAs need to be declared in either Council area.

The aim of this strategy will be to:-

- educate the public regarding the levels of pollution affecting the region and steps they can take to reduce their exposure and contribution;
- significantly reduce levels of pollution within AQMAs, with fundamental aim of reducing these to below the objective levels;
- raise awareness and provide policy, guidance, and a framework for development and impact mitigation to those wishing to develop in South Hams or West Devon;
- promote the uptake of Ultra Low Emission Vehicles with the objective of a zero emission car and truck fleet by 2050;
- ensure that the Councils own air quality impact is minimised through corporate policies on travel and fleet procurement;
- provide an approach for screening potential sources of and then reducing emissions of fine particulates (PM 2.5) in order to help improve and protect public health in accordance with the National and Devon public health strategies;
- ensure that permitted processes in the two Council areas are regulated to minimise their contributions to air pollution.

This strategy and associated action plans have been developed in recognition of the legal requirement on the Local Authorities to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this plan will be reported on annually within South Hams and West Devon Councils' air quality Annual Status Report (ASR).

Having reviewed the limited options above, there are no easy solutions for the problems faced in Totnes, Ivybridge or Dean Prior. It is believed that the Council should promote alternatives to private car use through the adoption of a planning policy to require contribution towards green travel vouchers and green travel planning, with promoting green travel to new residents.

At the same time planning policies should seek the promotion of ultra low emission vehicles, by ensuring the infrastructure is designed into the new developments.

Shortlist of options for Totnes

In the short term funding should be secured from developers to secure improvements to public transport signage, and to the pedestrian crossings in the town to off-set the impact of their developments.

There is the potential for greater use of cycling for short regional journeys within Totnes and the immediate area, however the road network does not easily facilitate this.

There is no intention at this time to consider the further the option of compulsory/voluntary purchase at this time.

Shortlist of options for Ivybridge

On top of the generic options identified the most feasible option is to consider the parking changes along Western Road, and this work should be commenced in 2018. The work will involve consultation with the public along Western Road in regards to the proposed benefits of the scheme, and the proposed alternative parking proposals. Once the consultation has been carried out Devon County Council are happy to explore the road traffic order needed as long as there is local public support.

The Councils will continue to work with landowners and others to determine the feasibility of an alternative access route for Eastern Ivybridge to the South of the A38. In order to progress options 2 or 3 a traffic assessment and some initial design work will be needed, Devon County Council commenced feasibility work in 2017 for these projects.

There is no intention to consider further the option of compulsory/voluntary purchase at this time.

Shortlist of options for Dean Prior

The Council will need to work with Highways England further to determine whether there is any technically feasible options for this area of the A38. Should a technically feasible option be found then this may be progressed with the homeowners to determine whether it is acceptable to them. Although voluntary purchase and compulsory purchase is not viewed as being appropriate at this time.

1. Policy Context

1.1 Local Air Quality Management

It is a requirement of Section 82 of the Environment Act 1995 that every local authority shall review the air quality within its area, this shall include an assessment of the current situation and the predicted future air quality. Section 83 requires local authorities to designate an Air Quality Management Area (AQMA) where air quality objectives are not being achieved, or are not likely to be achieved, as set out in the Air Quality (England) Regulations 2000. Once the area has been designated, Section 84 requires the local authority to develop an Action Plan detailing remedial measures to tackle the problem within the AQMA.

The air quality objectives set out in the Air Quality (England) Regulations 2000, as amended by the Air Quality (England) (Amendment) Regulations 2002, provide the statutory basis for the air quality objectives under Local Air Quality Management (LAQM) in England. As previously stated South Hams currently has 3 AQMAs and West Devon has 0.

Local authorities in England are expected to report on nitrogen dioxide (NO₂), particulate matter (PM₁₀) and sulphur dioxide (SO₂) as standard within their Annual

Status Report. However, local authorities are no longer expected to report on Benzene, 1,3-butadiene, Carbon Monoxide and Lead as objectives for these pollutants have been met for several years and are well below limit values. In addition to the objectives set in Regulations, local authorities have a new, flexible role in working towards reducing emissions and concentrations of PM2.5.

In the past local authorities were required to undertake a process of 'Review and Assessment' over a three year period detailing monitoring data and actions. From 2016 one Annual Status Report (ASR) is required.

It is recommended that all local authorities, should consider drawing up an Air Quality Strategy. The strategy helps to focus on areas with and without Air Quality Management Areas (AQMA) in place and drive improvements in air quality.

PM2.5 has been included in this strategy on the basis that there are no recognised safe levels for this pollutant and there is significant public health concern due to the highly respirable nature of this pollutant. This strategy also sets out how sources of this pollutant will be screened and then targeted for reduction and links with both the National and Devon Public Health Strategies.

2. Baseline Information

2.1 South Hams and West Devon Population data

South Hams has a population of roughly 84,600 living in 43,000 households, whilst in West Devon there are 54,000 people living in roughly 25,000 properties (<https://new.devon.gov.uk/factsandfigures/>).

The population of the two Authorities is focussed around the main towns which are for South Hams; Dartmouth, Ivybridge, Kingsbridge and Totnes; and for West Devon are; Tavistock and Okehampton.

2.2 South Hams and West Devon Traffic information

In 2011 there were 54,303 cars registered in the South Hams and 33,823 in West Devon. There are approximately 500,000 visitors to the South Hams area each year.

The traffic flowing in the Air Quality Management areas is a key concern to the Authorities. The A385 through Totnes has roughly 22,000 vehicles a day travelling along the stretch around Bridgetown Hill an increase of 26% since 2000, while in Ivybridge there are no recent traffic count data provided by Devon County to the Department for Transport. The graph showing the vehicle counts by year is shown in appendix A1.

In regards to the A38, traffic flows through the Dean Prior AQMA has not changed dramatically over the last 17 years. The graph showing the vehicle counts by year is shown in Appendix A2.

While there are no current air quality management areas in West Devon, there is traffic data for Tavistock. In Tavistock, the traffic data is collected on the stretch of road between the A390 and the B3557 and there were 13,400 vehicles a day in 2015, a decrease of 12% since 2000.

2.3 National Trends in Vehicle Types

By the end of 2016 there were 12.1 million diesel cars on the roads in the UK, accounting for 39% of the total, up from only 10% in 1996. There were only 388,000 alternative fuel cars licensed by December 2016, but this was up 25% over the year.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/608374/vehicle-licensing-statistics-2016.pdf

In total, 41,819 new ultra-low emission vehicles (ULEVs) were registered for the first time in the United Kingdom in 2016, up 140% from 29,965 in 2015. Most of this increase has been due to vehicles eligible for plug-in car and van grants.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/608126/veh0170.ods

This trend is also largely believed to be due to taxation incentives for company car drivers and lower road fund licence fees encouraging the take up of vehicles with lower CO2 emissions.

AQ1: We will review the Council fleet to assess the suitability of low emission vehicles

AQ2: We will increase the number of electric charging points available within Council car parks and in other locations

AQ3: We will seek additional traffic monitoring points within our AQMAS and other key locations, to enable better assessment of traffic flows.

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3. Air Pollution in South Hams and West Devon

3.1 Existing Air Quality Management Areas

The declaration of an Air Quality Management Area (AQMA) is undertaken where there is sufficient evidence to demonstrate that the air quality in a certain area fails to meet the national statutory air quality objective levels. After declaration, the local authority has 12 months to devise an air quality action plan (AQAP) which sets out the measures it intends to follow to ensure that the air quality is improved.

There are currently 3 AQMAs in the South Hams area, the maps on the next few pages show the areas covered by the AQMA Orders.

At the time of writing this strategy there are no AQMAs declared in West Devon, monitoring in Okehampton in 2016 show that the air quality is not meeting the national objectives at East Street. We will continue to monitor the situation here and seek a declaration when/if it is believed appropriate.

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Figure 3.1 Map showing AQMA for Totnes declared in 2016

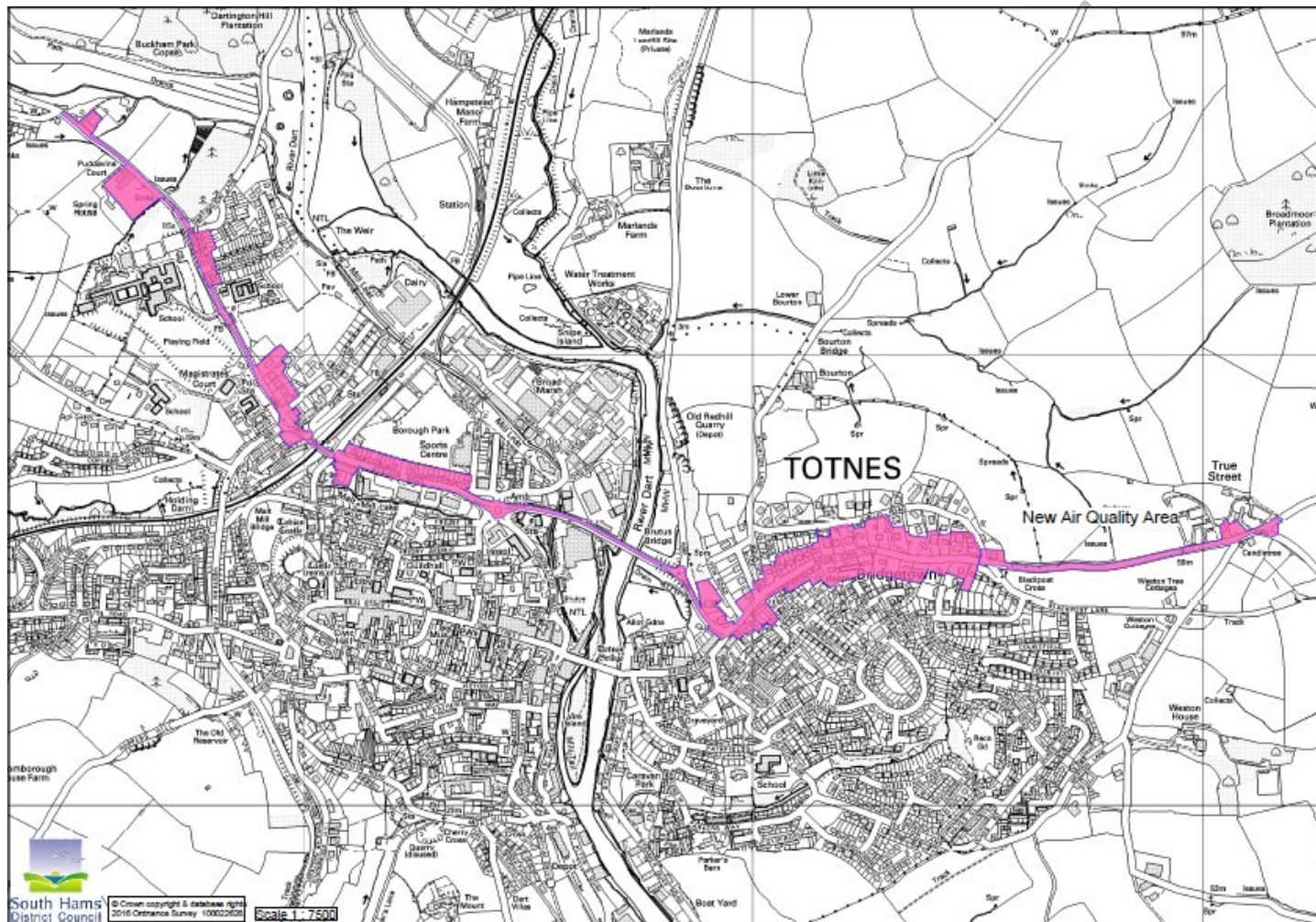


Figure 3.2 Map showing AQMA for Ivybridge declared 2009

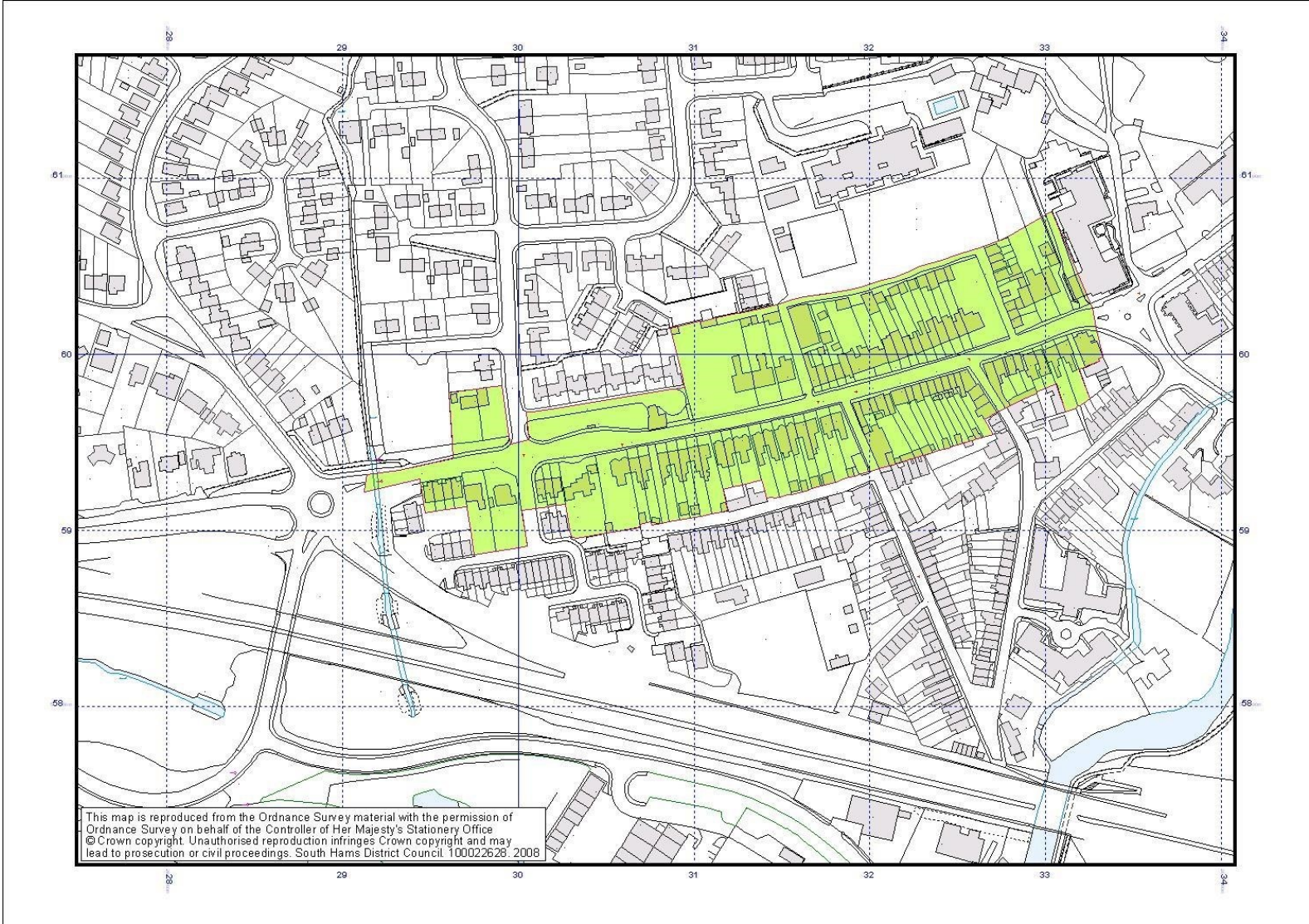
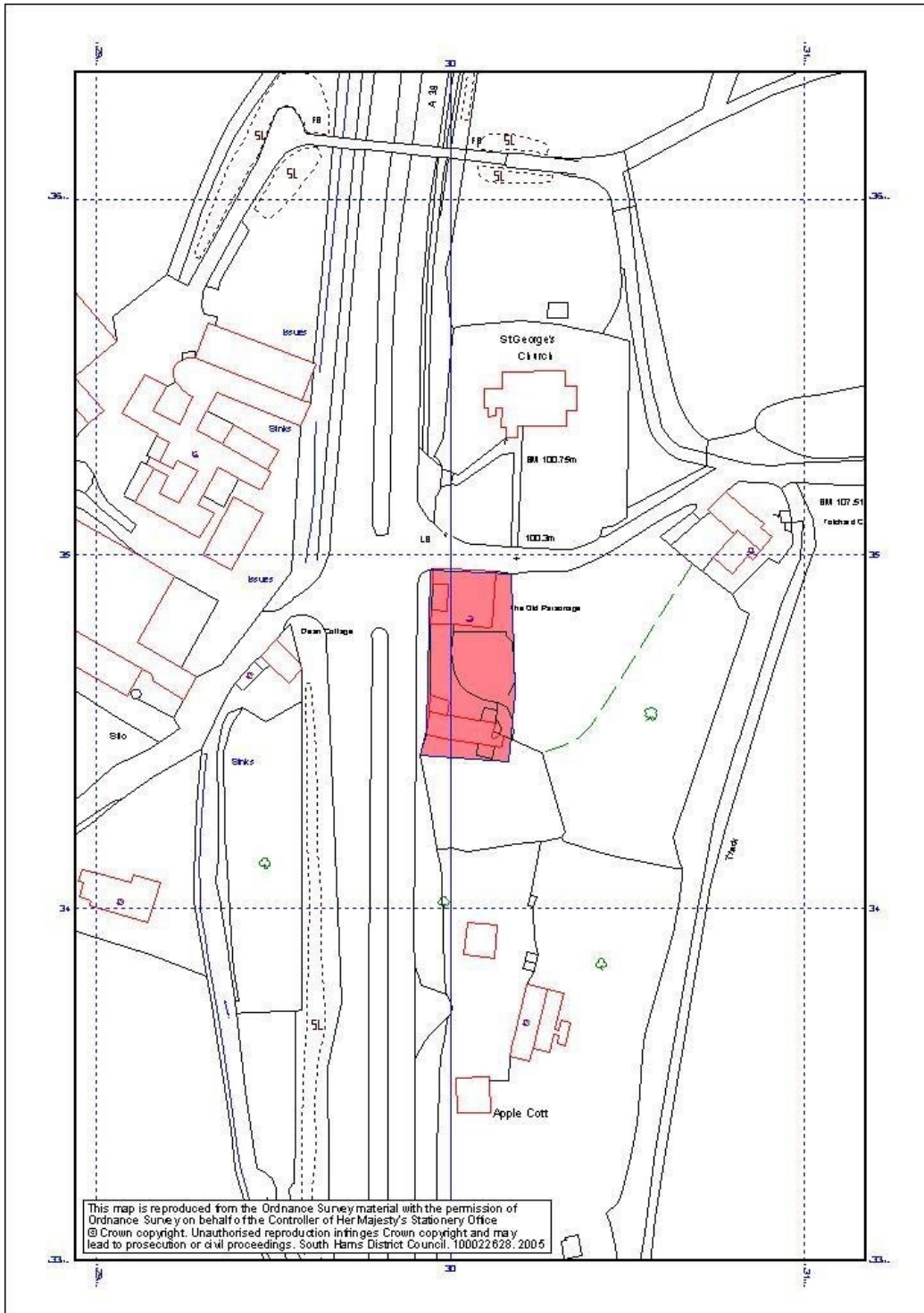


Figure 3.3 Map showing AQMA for Dean Prior declared 2005



3.2 Industry within South Hams and West Devon: Part A and B Processes

Part A (1) installations are activities listed for control, by the Environment Agency (EA), under Schedule 1 to the Environmental Permitting Regulations.

Part A (1) installations are generally perceived to have a greater potential to pollute the environment than Part A (2) installations.

Part B installations (which include vehicle re-spraying, cement batching and unloading of petrol) have the least potential to pollute.

There are 4 A(1) installations still operating in the South Hams and 2 former installations. There are 4 A(1) installations operating in West Devon.

Part A(1) installations are regulated by the Environment Agency and include large food manufacturers (e.g. Ambrosia, and Tav Valley Creamery), Hatherleigh abattoir, the processing of tungsten ore (Wolf Minerals) and the Langage Energy Centre.

There are currently 45 A(2) and B installations permitted by South Hams District Council to operate, and 18 premises permitted by West Devon Borough Council.

Part A(2) and B installations are regulated by the Councils, and include smaller industrial processes such as clay products drying, paint spraying, foundries, petrol stations and dry cleaners.

While there are significant industrial estates within the two councils' areas including mineral extraction sites, these facilities are regulated by stringent regulatory control by either the Environment Agency, the two Councils or the Mineral Planning Authorities.

There are no significant emissions from industry in either South Hams or West Devon, and consequently it has been determined that the principle source of air pollution in the region is road traffic emissions.

Both Imerys Minerals and Wolf Minerals both undertake PM₁₀ monitoring which is reviewed periodically by the Council and the Environment Agency. This has shown no cause for concern.

3.3 Road Traffic Pollution

Road traffic pollution is the principle source of NO₂ in the region and across the UK. Section 2.2 provides information on current trends in traffic volumes in the area. This highlights that the number of vehicle movements is increasing in the Totnes key area of concern.

South Hams and West Devon both have slightly more diesel cars than the National average. Diesel cars make up 41.8% and 45.2% of the total car numbers respectively, this is compared to a national average of 39.5%.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/623742/veh0105.ods)

Monitoring of NO₂ throughout the area has shown that there a number of key locations where levels of NO₂ exceed the UK annual mean objective. Up to date details of monitoring can be found in the annual reporting that South Hams and West Devon have produced which are available on our websites.

AQ4: WE WILL CONTINUE TO MONITOR THE AIR QUALITY WITHIN THE AREA AND REPORT AGAINST THE NATIONAL AIR QUALITY OBJECTIVES, ADDING NEW SITES TO THE MONITORING PROGRAMME WHERE INFORMATION INDICATES AIR QUALITY COULD BE A CONCERN.

AQ5: WE WILL DECLARE NEW AIR QUALITY MANAGEMENT AREAS WHERE MONITORING INDICATES A NEED TO DO SO.

AQ6: WE WILL CONTINUE TO REGULATE INDUSTRY WITH OUR PARTNERS TO A HIGH STANDARD, REQUIRING BEST PRACTICE TO BE ADHERED TO AND ENFORCING WHERE IT IS DEEMED APPROPRIATE TO DO SO.

4. Health effects of Air Pollution

4.1 Health Related to NO₂ exposure

The principle pollutant of concern in both the South Hams and West Devon Area is NO₂. Up until recently the link between high levels of NO₂ and the impact on health were not proven. It was, however, understood that poor air quality had a negative impact on health. In 2015 the Committee for the Medical Effects of Air Pollutants

(COMEAP) deemed that sufficient evidence was now available to demonstrate the short and long term impact of exposure to NO₂, and as such concluded;

“Evidence associating NO₂ with health effects has strengthened substantially in recent years and we now think that, on the balance of probability, NO₂ itself is responsible for some of the health impact found to be associated with it in epidemiological studies.”

Much of the evidence in regards to long-term average NO₂ concentrations has been obtained through observational epidemiological studies. Therefore COMEAP also stated that;

“...it is possible that, to some extent, NO₂ acts as a marker of the effects of other traffic-related pollutants...”

On this basis it is not only remaining compliant with the legislative requirements of the Environment Act 1995 that drives South Hams and West Devon to improve air quality but the protection of public health as well.

In order to adequately protect public health, the key aims within the AQMAs should be to improve the air quality within those areas. It may also be viewed as being appropriate to limit the exposure of the public to poor air quality by making sure the link between poor health and poor air quality is understood.

4.2 Health related to Particulate Matter Exposure

PM₁₀ is a measurement of particulate matter measuring 10 microns or less, and is one of the pollutants of concern in the national objectives. Screening for the likely sources of this pollutant has been carried out in the past and monitoring has occurred in the South Hams, but the objective levels were not breached.

However, in 2010 The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom: A report by the Committee on the Medical Effects of Air Pollutants (COMEAP), concluded:

- Removing all anthropogenic particulate matter air pollution (measured as PM_{2.5}) could save the UK population approximately 36.5 million life years over the next 100 years and would be associated with an increase in UK life expectancy from birth of six months.
- A policy which aimed to reduce the annual average concentration of PM_{2.5} by 1 µg m⁻³ would result in a saving of approximately 4 million life years or an increase in life expectancy of 20 days in people born in 2008.
- The current (2008) burden of anthropogenic particulate matter air pollution is an effect on mortality in 2008 equivalent to nearly 29,000 deaths in the UK at typical ages and an associated loss of total population life of 340,000 lifeyears. The burden can also be represented as a loss of life expectancy from birth of approximately six months.” (COMEAP 2010).

In 2014, Public Health England published a report which further supported these findings and provided figures down to a Local Authority Area. For South Hams, the total number of deaths for all causes in 2010 was 886 (25 years and older) and 561 in West Devon. Of these deaths, it is thought that 54 across the two areas were due to exposure to PM_{2.5} (34 and 20 respectively). This is equivalent to 312 and 194 life years lost, and attributable fractions of 3.8 and 3.5%. This estimate is a central estimate and compared to other areas across Devon, the South West and England the two Authorities have relatively low attributable fractions.

More information on how these figures were calculated by Public Health England can be found in the 2014 publication's Appendix A,

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf

There are currently no sites within the area covered by this report where there is monitoring of either PM₁₀ or PM_{2.5} by the Local Authorities. Improvements in levels of NO₂ will not necessarily lead to an equivalent improvement in particulate matter emissions as these may be influenced by other sources such as brake and tyre wear, however NO₂ emissions are viewed by many as being a general marker for exposure to road traffic related pollution.

Domestic use of wood burning stoves and heating equipment has become very popular in recent years. We will provide advice through the planning process to applicants on the appropriate use and maintenance of their equipment, and we will also provide this advice on our website.

AQ7: WE WILL PROVIDE UP TO DATE INFORMATION ON OUR WEBSITES IN REGARDS TO THE HEALTH IMPACTS OF EXPOSURE TO POOR AIR QUALITY ALONG WITH PROVIDING WARNINGS WHEN METEOROLOGICAL CONDITIONS ARE LIKELY TO WORSEN AIR QUALITY IMPACTS.

AQ8: WE WILL EXPLORE THE PROMOTION OF TRAVEL PLANNING WITH SCHOOLS TO REDUCE EXPOSURE BY PUPILS TO POOR AIR QUALITY WHEN WALKING TO AND FROM SCHOOL.

AQ9: WE WILL PROVIDE EDUCATION AND ADVICE TO OWNERS OF WOOD BURNING STOVES AND EQUIPMENT ON THE APPROPRIATE USE TO MINIMISE AIR POLLUTION.

5. Local Policies, Programmes and Strategies

5.1 The Joint Local Plan Overview

The Joint Local Plan (JLP) sets out the vision for development across South Hams, West Devon and Plymouth, with an aim of identifying the principle locations and specific sites for new housing, community infrastructure, shops and employment.

At the time of writing, the Plan is in draft and has not been through formal inspection, following successful scrutiny the plan and policies contained will be used to determine planning applications.

5.2 Joint Local Plan Planning Policies

The planning policies in regards to air quality were reviewed as part of the JLP process. Based on the limited progress to date in resolving the air quality issues within the existing AQMAs, the revised AQMA in Totnes and the deteriorating air

quality in other parts of the two districts it was felt imperative that the planning policies were tightened. This is to ensure that we could adequately protect the public and deliver on our legal duties, whilst supporting the need for sustainable development.

The new policy will sit within a policy concerning the protection of the environment and as drafted reads;

“Policy DEV2

Air, water, soil, noise, land and light pollution

Development proposals which will cause unacceptable on- or off-site risk or harm to human health, the natural environment or general amenity, either individually or cumulatively, will not be permitted. Development should:

- 1. Avoid harmful environmental impacts and health risks for both new and existing development arising from soil, air, water, land or noise pollution or land instability.*
- 2. Where located in or impacting an Air Quality Management Area, avoid or mitigate its impact through positively contributing towards the implementation of measures contained within air quality action plans and transport programmes, and through green infrastructure provision and enhancements, building design and layout which helps minimise air quality impacts.*
- 3. Prevent deterioration of and where appropriate protect, enhance and restore water quality.*
- 4. Limit the impact of light pollution on local amenity, intrinsically dark landscapes and nature conservation.*
- 5. Where appropriate, remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land.*
- 6. Protect soils, safeguarding the long term potential of best and most versatile agricultural land and conserving soil resources.*
- 7. Maintain and where appropriate improve the noise environment in accordance with the Noise Policy Statement for England (including any subsequent updates).*
- 8. Not cause an adverse effect on the integrity of a European Site (see Policy SPT11).*

The planning system plays an important role in protecting the environment and people from pollution and managing natural resources. Policy DEV2 considers air, water, land, noise and light pollution, alongside other natural resource issues such as land stability and the need to safeguard soils and agricultural land. Its implementation will be amplified in the Plymouth Policy Area and Thriving Towns and Villages SPDs. “

5.3 Development within the South Hams and West Devon

The Joint Local Plan is based around the Plymouth Housing Market Area (HMA) and as part of the planning process an assessment was undertaken of the objectively assessed need for housing for the HMA. This has been calculated at 30,300 new homes needing to be delivered between 2014 and 2034. The National Planning Policy Framework (NPPF) states that local plans should seek to address the objectively assessed need in full.

When determining the dispersal of development, a number of options were identified, however the preferred option recognises the importance of Tavistock and Ivybridge to the delivery of sustainable developments.

Ivybridge already has excellent public transport links with Plymouth, however studies by Devon County Council have shown that the railway station is severely underutilised

<https://www.plymouth.gov.uk/sites/default/files/PlymouthSouthWestDevonJLPBaselineTransportConditionsReportAppendixA.pdf>).

It is also adjacent to the strategic road network, however access to the A38 is reliant upon the road network through the AQMA. This will be the challenge to further development and will need to be addressed.

Commuters from Tavistock are currently reliant upon the A386, which is identified as having capacity issues during peak travel times. Further work is also identified in relation to the re-instatement of the rail line to Plymouth via Bere Alston.

Elsewhere across the two Council areas the level of growth is not believed to pose significant concerns to air quality, although any development in and around Okehampton and Totnes will be expected to protect and improve air quality.

5.4 The role of Highways England and Devon County Council

Neither South Hams nor West Devon are highways authorities, and therefore it will be imperative that good working relationships are developed and maintained with these organisations to ensure that air quality is maintained and improved within the two Council areas.

The AQMA of Dean Prior is principally due to the proximity of housing to the A38 at a point where the topography of the road causes a significant increase in emissions. This road network is the responsibility of Highways England.

Highways England has developed a delivery plan for the period 2015 – 2020 which includes a commitment to the environment. This included funding for air quality improvement trials in 10 locations, the development of lessons learned during those trials and a toolkit to be used to address air quality on its network.

These trials were designed to last up to 12 months and therefore it is too early to say what this may mean to the Dean Prior AQMA, however it will be important to make sure that the site remains a priority.

Discussions have been held with Devon County Council when devising the Air Quality Action Plans. This identified that there are limited infrastructure projects identified in Totnes which would have a positive impact on air quality. Devon County have agreed to commission some further investigative works

5.5 Taxi Licensing Policy

In 2017, South Hams and West Devon Councils consulted on a new taxi vehicle licensing policy. As part of this policy, the Councils sought to encourage vehicles becoming more environmentally friendly by heavily subsidising the licensing cost of ultra-low emission vehicles.

There will also be requirements for taxi drivers sitting at ranks and waiting for passengers to be mindful of their engine emissions by minimising their idling.

AQ10: WE WILL DELIVER TRANSPORT INTERVENTIONS WHICH:

A. REDUCE RELIANCE ON THE PRIVATE CAR;

B. MAKE PUBLIC TRANSPORT MORE ACCESSIBLE, RELIABLE AND AN ATTRACTIVE ALTERNATIVE;

C. MAKE INFRASTRUCTURE IMPROVEMENTS AND PROMOTE CYCLING AS AN

ALTERNATIVE MEANS OF TRANSPORT;

D. REQUIRE TRAVEL PLANS TO BE SUBMITTED FOR NEW DEVELOPMENTS;

AQ11: WORK WITH THE LICENSING TEAMS TO DEVELOP THE TAXI POLICY TO PROMOTE THE USE OF ULTRA LOW/ ZERO EMISSION VEHICLES AND SET MINIMUM EMISSION STANDARDS.

AQ12: WE WILL WORK WITH OTHER DEVON DISTRICTS TO INTRODUCE ECO STARS TAXIS SCHEMES ACROSS DEVON.

6. Planning and Air Quality: Guidance for Developers

6.1 How can planning impact on air quality?

Developments can have a significant impact on air quality by introducing new receptors, new sources, or increase traffic flows in areas where the aim is a reduction in flow. The National Planning Practice Guidance stipulates;

“Whether or not air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to generate air quality impact in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation (including that applicable to wildlife)...” Paragraph: 005 Reference ID: 32-005-20140306

Revision date: 06 03 2014

Piecemeal development can have a greater cumulative impact on air quality than a single allocated site whose impacts are known and can be off-set through local planning policies. This is the importance of consideration of impact through the Joint Local Plan and Neighbourhood Plans.

In order to off-set the impact of smaller developments on air quality the Councils will seek to make sure that developments do not exacerbate existing air quality problems or create new air quality management areas.

Planning policies will seek to promote non-car modes of transport by promoting green travel alternatives through the provision of green travel vouchers, and the development of site specific travel plans.

Policies will also promote the uptake of greener car technology through the provision of off-street electric charging points.

All major developments will be required to assess their impact solely and cumulatively, utilising the guidance produced by the Institute of Air Quality Management (IAQM). Where a significant impact is determined suitable off-setting measures will need to be considered. It is also likely that developments will need to contribute towards measures outlined in the air quality action plan.

6.2 When should a planning application be accompanied by an air quality assessment?

The Council has a validation checklist which includes guidance on what sort of applications would require an air quality impact assessment. In principle, we follow the screening guidance issued by the Institute of Air Quality Management (IAQM) which stipulates that there is a 2-stage process to screening the need for an assessment. A summary of the screening assessment is set out below;

Stage 1: the development involves any of the following proceed to stage 2

Development involves the building of 10 or more residential units or a site area of more than 0.5 Ha

More than 1000m² of floor space for all other uses or a site area greater than 1 Ha

And

The development has more than 10 parking spaces

The development will have a centralised energy facility or other centralised combustion process

Stage 2: Indicative criteria for requiring an air quality assessment

The development will:

Indicative Criteria to Proceed to an Air Quality Assessment ^a

| | |
|---|---|
| <p>1. Cause a significant change in Light Duty / Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and <3.5t gross vehicle weight). – more</p> | |
| <p>2. Cause a significant change in Heavy flows on local roads - more than 2</p> | |
| | |
| | |
| | |
| | |
| <p>centralised energy centres) and shipping.</p> | <p>In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.</p> <p>Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable.</p> |

- We may also require an assessment where the development is close to a heavily trafficked road, with emissions that could give rise to sufficiently high

concentrations of pollutants (in particular NO₂), that would cause unacceptably high exposure for users of the new development; and

- the presence of a source of odour and/or dust that may affect amenity for future occupants of the development.

Developers should contact the Environmental Health team at as early a stage as possible to scope the level of assessment required.

6.3 How do I Prepare an Air Quality Assessment?

The most important starting point of an air quality assessment is scoping the assessment with the aid of Environmental Health, there is currently no charge for this work. An assessment will only be deemed valid if all potential impacts have been considered i.e. on-site, off-site and construction phase impacts.

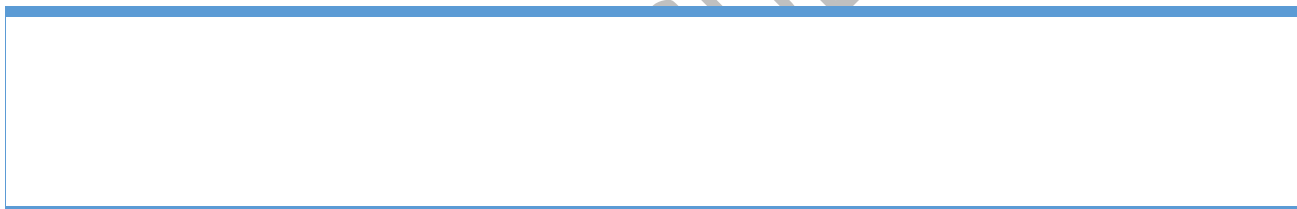
We will expect that developer's consultants will use the most valid guidance documents for devising their assessments including the various guidance documents produced by the Institute of Air Quality Management.

As a matter of good practice the Council expects the applicant to consider the baseline situation, some data is available from the Council; free of charge, for this purpose, however it may be necessary to undertake further monitoring before an application is submitted. Further monitoring can take some months to achieve and therefore early involvement of Environmental Health in the project is highly recommended.

6.4 What are suitable off-setting measures?

Where the outcome of an air quality assessment predicts that there will be an impact on an area with existing poor air quality, or where a new air quality problem is likely to be created, developers will be expected to provide mitigation or contributions towards the Air Quality Action Plan or other agreed measures. Any measures will need to meet the requirements of the Community Infrastructure Levy criteria.

Green travel planning can have a positive impact on encouraging new residents to use alternative and more sustainable forms of transport. It is proposed that for all developments which meet the stage 1 screening above a contribution should be sought to pay for a green travel planning advisor to work with the site occupants once built.



AQ13: WE WILL REQUIRE ALL NEW MAJOR DEVELOPMENT PROPOSALS TO UNDERTAKE AN AIR QUALITY IMPACT ASSESSMENT IN ACCORDANCE WITH THE INSTITUTE OF AIR QUALITY MANAMENT'S GUIDANCE.

AQ14: WE WILL SEEK ALL DEVELOPMENTS TO OFF-SET THEIR IMPACT BY SUPPORTING ULTRA LOW EMISSION VEHICLES.

AQ15: WE WILL SEEK CONTRIBUTIONS FROM MAJOR DEVELOPMENTS TO PAY TOWARDS THE COST OF DEVELOPING A GREEN TRAVEL PLAN FOR THE DEVELOPMENT.

7. Strategy to Reduce Emissions of PM2.5 in South Hams and West Devon

7.1 Why do we need to reduce emissions of PM2.5?

Life expectancy can be significantly affected due to exposure to poor air quality. In its report on 'The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom', published in 2010, the Committee on the Medical Effects of Air Pollutants (COMEAP) estimated that poor air quality is responsible for approximately 29,000 deaths and an estimated loss of 340,000 life-years.

The Defra Local Air Quality Management Policy Guidance (2016) (LAQM.PG(16)) promotes that Local Authorities produce a strategy for reducing the emissions of PM_{2.5}.

7.2 Monitoring of PM2.5 in South Hams and West Devon

There has been no monitoring of PM_{2.5} in either South Hams or West Devon and there is no intention to introduce monitoring at this time. This decision was based upon the fact that there is no 'safe' level for PM_{2.5}, therefore we should be working to reduce the emissions anyway.

7.3 Measures to Reduce PM2.5

This strategy does not propose specific measures to reduce the emissions of PM_{2.5} however there is evidence to link that actively tackling NO_x has a positive impact on this pollutant as well.

8. The Air Quality Action Plans for South Hams

8.1 The Air Quality Working Group Overview

The Air Quality Action Plan was formulated by Environmental Health with input from Specialists from across the Councils and Devon County Council. As a result a number of options have been identified and decisions taken as to the likely effectiveness and costs of these options.

All stakeholders have a degree of ownership of this document and this in turn will ensure that no reasonable options for improvement have been missed.

8.2 Air Quality Action Plan

Upon declaring an air quality management area the Councils must submit an Air Quality Action Plan (AQAP) to DEFRA. The AQAP must describe the measures the Local Authority intends to take to improve air quality.

While every effort will be taken to tackle poor air quality the Council will also need to consider the wider socio-economic impacts of an Action Plan. Although no specific modelling has been done the specific and generic proposals listed within the Action Plan have the potential to impact beneficially on air quality.

South Hams District Council did previously adopt an Air Quality Action Plan in 2013, however following the need to amend the Air Quality Management Area in Totnes it was felt appropriate to review and refresh that plan.

The actions in the AQAP shortlist are those which are currently considered to be the most cost effective and appropriate, however radical and more costly options have been considered and are still within the action plan in case they become more feasible due to external funding opportunities.

8.3 Consultation Overview

The following action plan will be subject to public consultation following adoption of this clean air strategy by the Councils. In order to ensure that all stakeholders have been consulted and that they have a degree of ownership of this document which in turn improves the likelihood of the plan succeeding in reducing pollution levels.

By consulting the public it gives an opportunity to ensure that there have been no solutions overlooked which might have a more positive impact on air quality.

In accordance with Schedule 11 of the Environment Act 1995 the following consultees will be contacted;

- Secretary of State for the Environment
- The Environment Agency
- Highways England
- Devon County Council (Highways, Planning, and Public Health Teams).

- Local Ward Councillors in AQMA
- Public Health England
- Members of the public
- Totnes Town Council, Ivybridge Town Council, Dean Prior, and Berry Pomeroy Parish Councils

It is recognised that it will be very difficult in some locations to achieve the level of reduction in Nitrogen Dioxide required to achieve the National NO₂ objective level. This is assuming that there won't be any significant changes in vehicle emission technology.

8.4 Nitrogen Oxides/ Nitrogen Dioxide (NO_x/ NO₂)

Emissions from car exhausts consists of a mixture of chemicals resulting from the combustion process. One of these chemicals is nitrogen oxides (NO_x) which is converted to Nitrogen Dioxide (NO₂), the influencing factors for this conversion include temperature and the presence or lack thereof of other chemicals in the atmosphere. Therefore in summer months the speed of reaction is greater, leading to higher proportion of NO_x being converted to NO₂, we also tend to see an increase in road traffic levels in summer months. However we do not always see an increase in NO₂ levels as measured by our diffusion tubes. Therefore when assessing levels of NO₂ we use an annual average of the measured levels.

8.5 Evaluating options for Air Quality

Officers worked with Devon County Council to assess the costs and effectiveness of the proposed actions for reducing air pollution and these have then been given a subjective score out of 5 for both the impact on air quality and cost benefit. The air quality score is based on the scale of improvement expected to occur by delivering the option.

The cost score is a subjective assessment of the cost of implementing the option, with 5 being a very low cost (£100's) and 1 being very high (£000,000's)

The two scores will be amalgamated to form a cost effectiveness value as shown below;

| | | Cost | | | | |
|-------------|-------------|-----------|--------|--------|-----|------|
| | | 5 | 4 | 3 | 2 | 1 |
| | Very High | Very High | High | Medium | Low | |
| | 4 High | High | Medium | Low | Low | Very |
| Air Quality | 3 High | Medium | Medium | Low | Low | Low |
| | Very Impact | 2 Medium | Medium | Low | Low | Low |

| | | | | | | |
|--|---|--------|--------|-----|----------|----------|
| | 1 | Medium | Medium | Low | Very Low | Very Low |
|--|---|--------|--------|-----|----------|----------|

8.6 Monitoring of the Air Quality Action Plan

The Action Plan will be monitored through the submission of the Annual Status Report to DEFRA and particularly the Action Plan Progress part of this report. We will also continue to monitor air quality in these areas to determine what long term trends are happening with air quality in the area.

DRAFT FOR CONSULTATION

Air Quality Action Plan for Ivybridge

Ivybridge option 1: Removal/alteration to parking along Western Road

This option has been considered previously, and work was done by Devon County Council to produce the necessary road traffic order. This was not supported due to the local residents reaction to the perceived loss of parking. The proposal would involve the removal of on street parking along the Western Road from just past the former Fire Station Building to the roundabout at Majorie Kelly Way.

Air Quality Impact of option 1: 4/5

A modelling exercise was undertaken in 2010 to predict what would happen if the parking was removed from the northern side to the southern side, with the road centreline also being moved further from the properties on the southern side. The results are given in table 2 below and they indicate that this would certainly improve air quality at the properties on the southern side of the road. Receptors 3,5 and 7 for example are all situated on or close to the terrace on the southern side.

Table 2 Showing improvements in NO₂ levels if parking was altered on Western Road

| Receptor | Do Nothing Scenario (µg/m ³) | Moved Car Parking and Road Centreline Scenario (µg/m ³) | Change in Concentration ^a (µg/m ³) |
|----------|--|---|---|
| 1 | 47.2 | 47.2 | 0.0 |
| 2 | 35.5 | 35.2 | -0.4 |
| 3 | 37.2 | 34.0 | -3.1 |
| 4 | 31.1 | 34.1 | +2.9 |
| 5 | 45.1 | 38.3 | -6.8 |
| 6 | 44.1 | 41.7 | -2.4 |
| 7 | 41.8 | 41.8 | 0.0 |

^a Based on unrounded values

Clearly this solution on its own does not solve the Air Quality issues in Western Road but it does help to off-set some of the impact in regards to increases in road traffic volumes.

Cost of Option 1 without car parking being provided 4/5 Cost of Option 1 with car parking being provided 3/5

A principle reason why this scheme has not been brought forward was local objection to the proposals by residents on Western Road who were concerned that these proposals would lead to a loss of car parking in the vicinity of their homes.

Whilst they have no legal right to park outside of their houses the knock on impact on the community of losing substantial amounts of parking could be politically unfavourable. A site could be found to off-set the loss in parking and early suggestions would be the former fire station and land adjacent to Wayside, Ivybridge. The land and building is in the ownership of South Hams District Council, to enable this to be off-set parking we would need: to demolish the fire station building, build a new access onto Wayside, and provide Grasscrete to the proposed parking area. We would need to consider the long term management of the parking (although Grasscrete is a low maintenance product) including whether this would remain a South Hams asset or whether we could gift this to Ivybridge Town Council/ residents to manage.



Cost Effectiveness Score: Medium to High

Ivybridge option 2: A Southern Link Road from St. Peters Way to the A38 Junction

This scheme has been considered previously, although no proposed routes for this road have been secured or costings for the scheme considered. This scheme could have been delivered as part of a new housing scheme to the south of the A38, although the land owner did not nominate this land for consideration and therefore it was not considered as part of the Joint Local Plan.

The land immediately to the south of the A38 is constrained by a flood plain at the south and west of the site and a high voltage power cable on pylons on the north of the site. Alternatively there is an existing road running from the bottom of St. Peters Way to the A38 but the road is not classified as a principle road route, and would therefore need to be widened and re-laid to meet modern road standards.

Air Quality Impacts of Option 2: 3/5

By improving this road route it would hopefully remove traffic flows from the east of Ivybridge from travelling down Western Road. The only concern would be that schools and other facilities are still located on the Western Road route and therefore the likely off-setting may not be as great as predicted i.e. 100% of traffic from these developments may not use this route instead of Western Road.

We may need to consider means of discouraging the use of Western Road as well as incentivising this route.

Cost of Option 2: 1/5

Improvements to the length of highway and the potential for CPO on landowners to allow for the widening of the road could be very costly. Should a site to the South of the A38 be found and the access road to the site be uprated to make it the primary route for traffic this would reduce costs.

Map showing location of Option 2



Cost Effectiveness of Option 2: Very Low

Ivybridge option 3: A new junction onto the A38 serving the east of Ivybridge

This scheme has previously been promoted by Ivybridge Town Council, however the scheme is not supported by Highways England due to the proximity of the existing junction at Ivybridge and an insufficient unmet demand on the current junction, or a proposed population serving this new junction.

Air Quality Impact of Option 3: 3/5

This would be likely to have a similar positive impact on air quality on Western Road as option 2, if not greater, as it might provide a more attractive alternative route for the community of Bittaford.

Cost of Option 3: 1/5

Due to the lack of support by Highways England, the insufficient level of development to support a new junction, and the lack of a suitable site for the junction the cost of this option precludes it from further consideration as a realistic option.

Cost Effectiveness of Option 3: Very Low

Ivybridge option 4: Promotion of Ultra Low Emission Vehicles (ULEVs) This would involve developers positively planning for the uptake of ULEVs by providing the infrastructure necessary to support charging points at home and in town centre car parks. This is viewed as good practice by the Institute of Air Quality Management for all new developments.

Air Quality Impact of option 4: 2/5 (short term) 4/5 (Long Term)

In the short term (i.e. next 5- 10 years) this is unlikely to have a significant improvement to air quality along Western Road due to the current low percentage of ULEVs in the fleet of vehicles in the local area.

However the promotion of the infrastructure will allow for a greater uptake in the future of these vehicles which will have the potential to eliminate the vast majority of local air quality problems.

Cost of Option 4: 5/5

The cost of installing electric charging points on new developments is fairly inexpensive (£250/ property), the cost of developing a charging network in town centre car parks needs further examination but has been undertaken by both Exeter and Plymouth Councils.

Cost Effectiveness of option 4: Medium to Very High

Ivybridge option 5: Promotion of Green Travel Vouchers

This is a Devon County Council policy whereby new developments contribute towards a bus service and bike vouchers for new households. The scheme aims to actively encourage households to consider alternative forms of travel to offset their impact.

The uptake of the scheme by households is hard to quantify and therefore the level of off-setting is not determinable, but this is viewed as good practice. It is suggested in Ivybridge that the scheme should also include the promotion of rail travel to Plymouth and Exeter through the provision of rail cards, further discussions would be needed with Great Western Rail on this.

Air Quality Impacts of Option 5: 1/5

Unlikely to have a significant impact on air quality as there is not a sufficient benefit to new homeowners to discourage private car use, however the promotion of these vouchers is seen nationally as good practice.

Cost of Option 5: 5/5

The cost of this scheme is fairly low compared to other options outlined above, and is good practice nationally as recognised by the Institute of Air Quality Management.

Cost Effectiveness of option 5: Medium

Ivybridge Option 6: Developers to pay for Green Travel Planning

Currently on larger developments developers will offer to undertake a green travel plan for the new development which actively seeks to promote more sustainable methods of transportation with the new householders.

The quality and delivery of these plans has been varied across the various developments that have happened in Devon. As such it is proposed that in future the

production of these plans be secured by planning obligation to the local authorities, the types of development where s.106 contributions would be sought needs to be determined but the following would be an indicative list;

- Development that involves the building of 10 or more residential units or a site area of more than 0.5 Ha
- More than 1000m² of floor space for all other uses or a site area greater than 1Ha

In 2016 South Hams District Council and Plymouth City Council, jointly sought DEFRA funding for a Green Travel Planning Advisor to work with existing larger employers in the Plymouth area to try and encourage employees to consider alternative methods of commuting to work. This scheme would be an extension to that proposed scheme.

Air Quality impact of option 6: 2/5

The potential impact of this option is dependent upon the alternative options available to householders and employees of traveling to and from work and other key journeys. However currently Ivybridge is well served by a number of bus routes, and is a serviced stop on the South West railway serviced by Great Western railway, allowing access to Plymouth and Exeter City centres.

Cost of option 6: 3/5

The cost of delivering green travel plans is currently held by developers by proposing to make this a planning obligation enables a more consistent quality of green travel plan and supports the aim of Plymouth City Council and South Hams District Council to offset the impact of current and future developments on the road network in both areas.

Cost effectiveness of option 6: Medium

Ivybridge option 7: Compulsory/Voluntary Purchase of the principle at risk residential premises.

Poor air quality is determined based on sensitive receptors being exposed to unacceptable levels of air pollution. Sensitive receptors are determined as being residential dwellings, schools and hospitals.

The Council does have powers to compulsory purchase properties, however the impact on the community of forcing people out of their homes cannot be underestimated, and the health benefit of alleviating the air quality exposure step compared to the socio-economic impact could be viewed politically as being unacceptable.

Air Quality impact of option 7: 5/5

Should all of the properties exposed to unacceptable levels of pollution no longer be deemed as a sensitive receptor then there would no longer be an Air Quality Management Area needed for the area.

Cost of option 7: 1/5

Due to the number of properties in the area exposed to unacceptable levels (approximately 10) and the house values in this area the cost of implementing this option would likely be in the millions. There would however be an asset in the Council's ownership which could be changed to a less/none sensitive receptor such as offices.

Cost effectiveness of option 7: Low

A more moderate option would be for the Council to write to all of the owners of the properties to offer to purchase their property at any point in the future should they be wishing to sell.

Air Quality Action Plan for Totnes

The options below recognise the limited opportunities for improvements to this strategic road network, and the fact that journeys along this route have a number of different starting locations and destinations (i.e. it is not as simple as Torbay to Plymouth, or Totnes to Plymouth).

Totnes option 1: Changes to the nature of pedestrian crossings along the A385

In 2012, Devon County Council published a Totnes Transport Strategy. This report highlighted the difficulties with the A385 corridor through Totnes, including the number of pedestrian crossings and potential impacts of traffic at peak times.

Some of the work has been done such as improvements to the pedestrian crossings at Redworth Junction. However other work has yet to be done such as changing the Traffic Light Controlled crossing at Bridgetown to a Pelican/Zebra Crossing which would limit waiting times for cars.

Air quality impact of option 1: 2

A previous study on air quality impacts of the Devon County report found through modelling that there would be limited improvements to air quality from highway improvements.

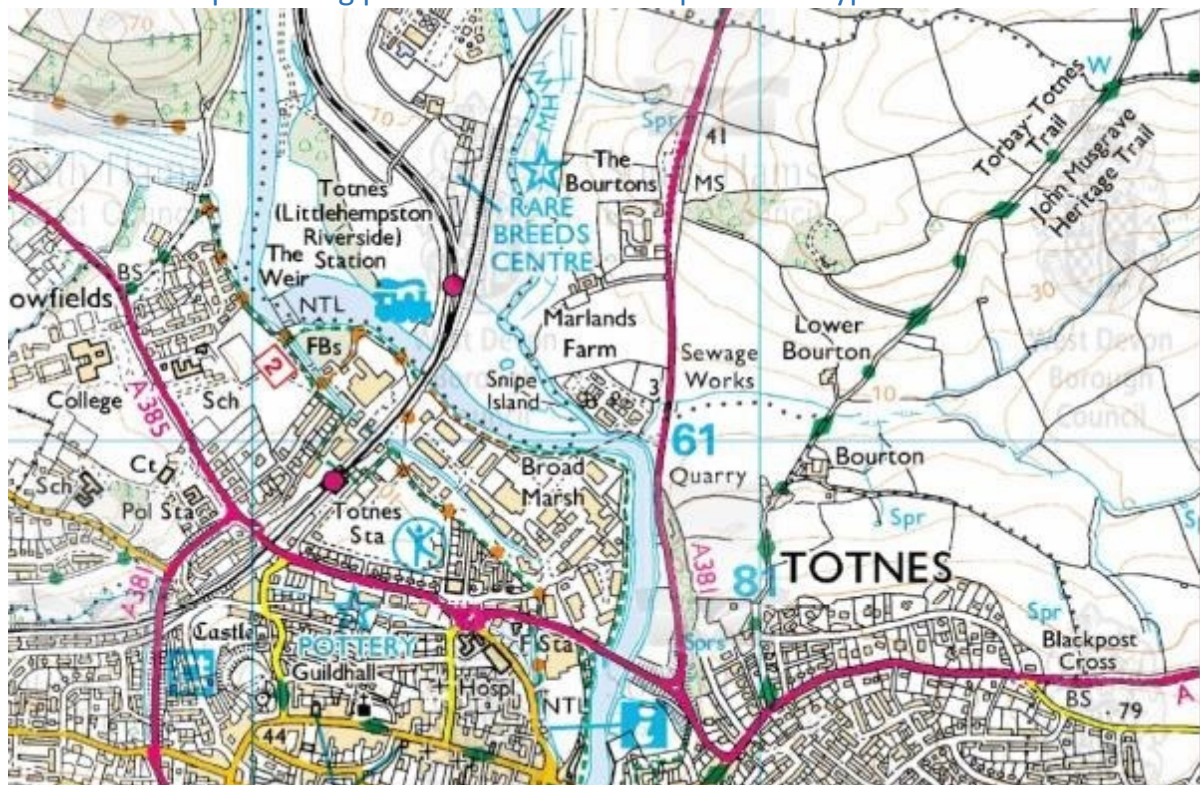
Cost of option 1: 2 – 4

Depending upon the nature of the changes the cost does vary, replacing a Light controlled crossing to a pelican crossing is likely to be a low and reasonable cost, however options such as a pedestrian underpass to the railway station are likely to be more expensive (£00,000's). **Cost effectiveness of option 1: Medium**

Totnes option 2: A Bypass to Totnes

This option has been discussed in a number of previous air quality action plans, there has been no technical work done on likely routes or the benefits of providing a new strategic road network. There are limited routes available for such a bypass, however it is likely that any route would have to go north of the A385.

Map showing potential location of Option 2 A Bypass to Totnes



Air quality impact of option 2: 4

The level of impact depends upon the amount of traffic that would use the new road, as well as the location of the by-pass. However previous studies have shown that the vast majority (approximately 70%) of journeys on the A385 are through traffic, therefore the potential impact is great.

Cost of option 2: 1

The cost of such a large bypass is likely to be very high due to the technical challenges posed by any route, the need to compensate landowners etc.

Cost effectiveness of option 2: Medium

Whilst this option is technically feasible at this time it is felt not worth exploring further due to the excessive cost and the environmental impact of such a large infrastructure project.

Totnes option 3: Promotion of public transport alternatives for commuting traffic

The 2012 report highlighted that Totnes is served by railway station enabling journeys to Plymouth, Bristol, London et al. It was recognised that there are times of the day at which the station is not well served. It is not felt that there would be much support Regionally or Nationally to increasing the number of trains stopping at Totnes.

Other work has been carried out previously to increase the use of public transport in neighbouring authority areas (Torbay) and this work should be supported as it would lessen the number of car journeys on the A385. This work has focussed on ensuring that trains between Torquay and Newton Abbot tie-in with trains to Plymouth to make this an attractive option to commuters.

The report also highlights the potential improvements to signage for bus connections to Totnes for visitors to the area.

Air quality impact of option 3: 1

Whilst the promotion of public transport alternatives to private cars will have some positive impacts on car journey numbers it is not believed it will have a great impact, as not all areas are highly served by public transport.

Cost of option 3: 5 - 3

The suggested improvements in signage are likely to be low cost, whilst any increases in services will be of a higher cost and would need to be assessed for their business case.

Cost effectiveness of option 3: Medium to Low

Totnes option 4: Promotion of Ultra Low Emission Vehicles (ULEVs) This would involve developers positively planning for the uptake of ULEVs by providing the infrastructure necessary to support charging points at home and in town centre car parks. This is viewed as good practice by the Institute of Air Quality Management for all new developments.

It would also involve the Council supporting a low carbon economy through providing charging places in their car parks.

Air Quality Impact of option 4: 2/5 (short term) 4/5 (Long Term)

In the short term (i.e. next 5- 10 years) this is unlikely to have a significant improvement to air quality along A385 due to the current low percentage of ULEVs in the fleet of vehicles in the local area.

However the promotion of the infrastructure will allow for a greater uptake in the future of these vehicles which will have the potential to eliminate the vast majority of local air quality problems.

Cost of Option 4: 5 – 3

The cost of installing electric charging points on new developments is fairly inexpensive (£250/ property). The cost of developing a charging network in town centre car parks needs further examination but has been undertaken by both Exeter and Plymouth Councils. Initial conversations have been had with the Car Park teams and due to the low number of electric vehicles currently on the roads in the area, the loss of earnings for car park spaces given to electric vehicle charging is viewed as too great. Funding associated with providing charging points at the Council offices has been allocated and this will be progressed.

Cost Effectiveness of option 4: Medium to Very High

Totnes option 5: Promotion of Green Travel Vouchers

This is a Devon County Council policy whereby new developments contribute towards a bus service and bike vouchers for new households. The scheme aims to actively encourage households to consider alternative forms of travel to offset their impact.

The uptake of the scheme by households is hard to quantify and therefore the level of off-setting is not determinable, but this is viewed as good practice. It is suggested in Ivybridge that the scheme should also include the promotion of rail travel to Plymouth and Exeter through the provision of rail cards, further discussions would be needed with Great Western Rail on this.

Air Quality Impacts of Option 5: 1/5

Unlikely to have a significant impact on air quality as there is not a sufficient benefit to new homeowners to discourage private car use, however the promotion of these vouchers is seen nationally as good practice.

Cost of Option 5: 5/5

The cost of this scheme is fairly low compared to other options outlined above, and is good practice nationally as recognised by the Institute of Air Quality Management.

Cost Effectiveness of option 5: Medium

Totnes Option 6: Developers to pay for Green Travel Planning

Currently on larger developments developers will offer to undertake a green travel plan for the new development which actively seeks to promote more sustainable methods of transportation with the new householders.

The quality and delivery of these plans has been varied across the various developments that have happened in Devon. As such it is proposed that in future the production of these plans be secured by planning obligation to the local authorities, the types of development where s.106 contributions would be sought needs to be determined but the following would be an indicative list;

- Development that involves the building of 10 or more residential units or a site area of more than 0.5 Ha
- More than 1000m² of floor space for all other uses or a site area greater than 1Ha

Air Quality impact of option 6: 2/5

The potential impact of this option is dependent upon the alternative options available to householders and employees of traveling to and from work and other key journeys. However currently Totnes is well served by a number of bus routes, and is a serviced stop on the South West railway serviced by Great Western railway, allowing access to Plymouth and Exeter City centres.

Cost of option 6: 3/5

The cost of delivering green travel plans is currently held by developers. By proposing to make this a planning obligation, this enables a more consistent quality of green travel plans and supports the aim of Plymouth City Council and South Hams District Council to offset the impact of current and future developments on the road network in both areas.

Cost effectiveness of option 6: Medium

Totnes option 7: Compulsory/Voluntary Purchase of the principle at risk residential premises.

Poor air quality is determined based on sensitive receptors being exposed to unacceptable levels of air pollution. Sensitive receptors are determined as being residential dwellings, schools and hospitals.

The Council does have powers to compulsory purchase properties, however the impact on the community of forcing people out of their homes cannot be underestimated, and the health benefit of alleviating the air quality exposure step compared to the socio-economic impact could be viewed politically as being unacceptable.

A more moderate option would be for the Council to write to all of the owners of the properties to offer to purchase their property at any point in the future should they be wishing to sell.

Air quality impact of option 7: 5/5

Should all of the properties exposed to unacceptable levels of pollution no longer be deemed as a sensitive receptor then there would no longer be an Air Quality Management Area needed for the area. **Cost of option 7: 1/5**

Due to the number of properties in the area exposed to unacceptable levels (approximately 10) and the house values in this area the cost of implementing this option would likely be in

the millions. There would however be an asset in the Council's ownership which could be changed to a less/none sensitive receptor such as offices.

Cost effectiveness of option 7: Low

Air Quality Action Plan for Dean Prior

The air quality management area for Dean Prior surrounds a small number of properties immediately adjacent to the A38. Options for improvements are extremely limited for this location due to the strategic importance of this route.

Previous conversations with the homeowners has shown that the principally impacted elevation of the properties is not heavily utilised and therefore the health benefits of doing something may not outweigh the socio-economic benefits of doing nothing.

Dean Prior Option 1: Reduction in the speed limit along the stretch of the A38 in the AQMA

In 2014 – 2015 the stretch of A38 surrounding the AQMA had a temporary speed restriction due to the demolition and rebuild of a road bridge crossing the A38 at Rattery.

Air quality impact of option 1: 4

The table below shows the NO₂ levels by year at a location on the A38 and shows a positive correlation between the reduction in speed and a reduction in measured NO₂.

| | NO ₂ Annual Mean Concentration (µg/m ³) | | | | | |
|-------------------------|--|------|------|------|------|------|
| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Bias Adjustment Factor | 0.89 | 0.97 | 0.95 | 0.92 | 0.87 | 0.94 |
| NO ₂ Results | 41.1 | 43.9 | 41.4 | 45.5 | 37.9 | 42.4 |

Cost of option 1: 3

Whilst the cost of signage reducing the speed at this point would be quite low, there would be limited benefit if this was not enforced with speed cameras and through positive Police patrols. The A38 is the main strategic road network and anything that harms speed on this road can have a negative impact on businesses in the area.

Cost effectiveness of option 1: Medium

Dean Prior Option 2: Installation of an engineered road side barrier

A study in 2010 by the Dutch Air Quality Innovation Programme studied the benefits on air quality of erecting noise barriers adjacent to busy roads. For further information see:

https://laqm.defra.gov.uk/documents/Dutch_Air_Quality_Innovation_Programme.pdf

Air Quality impact of option 2: 4

This study found that where a 4m high barrier is erected there can be a significant improvement in air quality of approximately 14% for NO₂ or 20% for NO_x. Whilst this would not completely eliminate the need for an AQMA it would have a significant positive impact.

Cost of option 2: 4

This would depend upon the material of the barrier chosen, however a simple close boarded wooden fence of 4m high would offer a reasonable level of protection and be a relatively cheap construct.

Cost effectiveness of option 2: High

Dean Prior Option 3: Tree planting on verge adjacent to the houses

There is some evidence to demonstrate that certain species of trees are good at absorbing NO_x and can have a positive impact on air quality. The planting of trees in this area may not be appropriate due to the close proximity to the junction.

Air Quality impact of option 3: 2 – 3

There is differing views on the effectiveness of vegetation in reducing NO₂ levels especially at such short distances as exists at Dean Prior. It also may take some time for the trees to mature to a stage where they provide a sufficiently tall and dense barrier.

Cost of option 3: 4

There would be limited cost of tree planting in this area, however there would be an ongoing maintenance cost for the trees.

Cost effectiveness of option 3: Medium

Dean Prior option 4: Compulsory/Voluntary Purchase of the principle at risk residential premises.

Poor air quality is determined based on sensitive receptors being exposed to unacceptable levels of air pollution. Sensitive receptors are determined as being residential dwellings, schools and hospitals.

The Council does have powers to compulsory purchase properties, however the impact on the community of forcing people out of their homes cannot be underestimated, and the health benefit of alleviating the air quality exposure step compared to the socio-economic impact could be viewed politically as being unacceptable.

A more moderate option would be for the Council to write to all of the owners of the properties to offer to purchase their property at any point in the future should they be wishing to sell.

Air quality impact of option 7: 5/5

Should all of the properties exposed to unacceptable levels of pollution no longer be deemed as a sensitive receptor then there would no longer be an Air Quality Management Area needed for the area.

Cost of option 7: 1/5

Due to the number of properties in the area exposed to unacceptable levels (approximately 2 -3) and the house values in this area the cost of implementing this option would likely be high. There would however be an asset in the Council's ownership which could be changed to a less/none sensitive receptor such as offices.

Cost effectiveness of option 7: Low

Shortlist of options

Generic shortlist

Having reviewed the limited options above, there are no easy solutions for the problems faced in Totnes, Ivybridge or Dean Prior. It is believed that the Council should promote alternatives to private car use through the adoption of a planning policy to require contribution towards green travel vouchers and green travel planning, with promoting green travel to new residents.

At the same time planning policies should seek the promotion of ultra low emission vehicles, by ensuring the infrastructure is designed into the new developments.

Shortlist of options for Totnes

In the short term funding should be secured from developers to secure improvements to public transport signage, and to the pedestrian crossings in the town to off-set the impact of their developments.

There is the potential for greater use of cycling for short regional journeys within Totnes and the immediate area, however the road network does not easily facilitate this, and therefore the Councils should consider developing a regional cycling strategy.

Further work is still needed with Devon County Council to determine what other road improvements can be made to solve the poor air quality issues.

Shortlist of options for Ivybridge

The County Council signed up to undertaking a transport study of Ivybridge in 2017 to help model the road problems and potential solutions. Once this has been carried out we will be able to more formally assess the options outlined above.

However at this time the most feasible option is to consider the parking changes along Western Road. The work will involve consultation with the public along Western Road in regards to the proposed benefits of the scheme, and the proposed alternative parking proposals. Once the consultation has been carried out Devon County Council are happy to explore the road traffic order needed as long as there is local public support.

The Councils will continue to work with landowners and others to determine the feasibility of an alternative access route for Eastern Ivybridge to the South of the A38.

There is no intention to consider further the option of compulsory/voluntary purchase at this time.

Shortlist of options for Dean Prior

The Council will need to work with Highways England further to determine whether there is any technically feasible options for this area of the A38. Should a technically feasible option be found then this may be progressed with the homeowners to determine whether it is acceptable to them. Although voluntary purchase and compulsory purchase is not viewed as being appropriate at this time.

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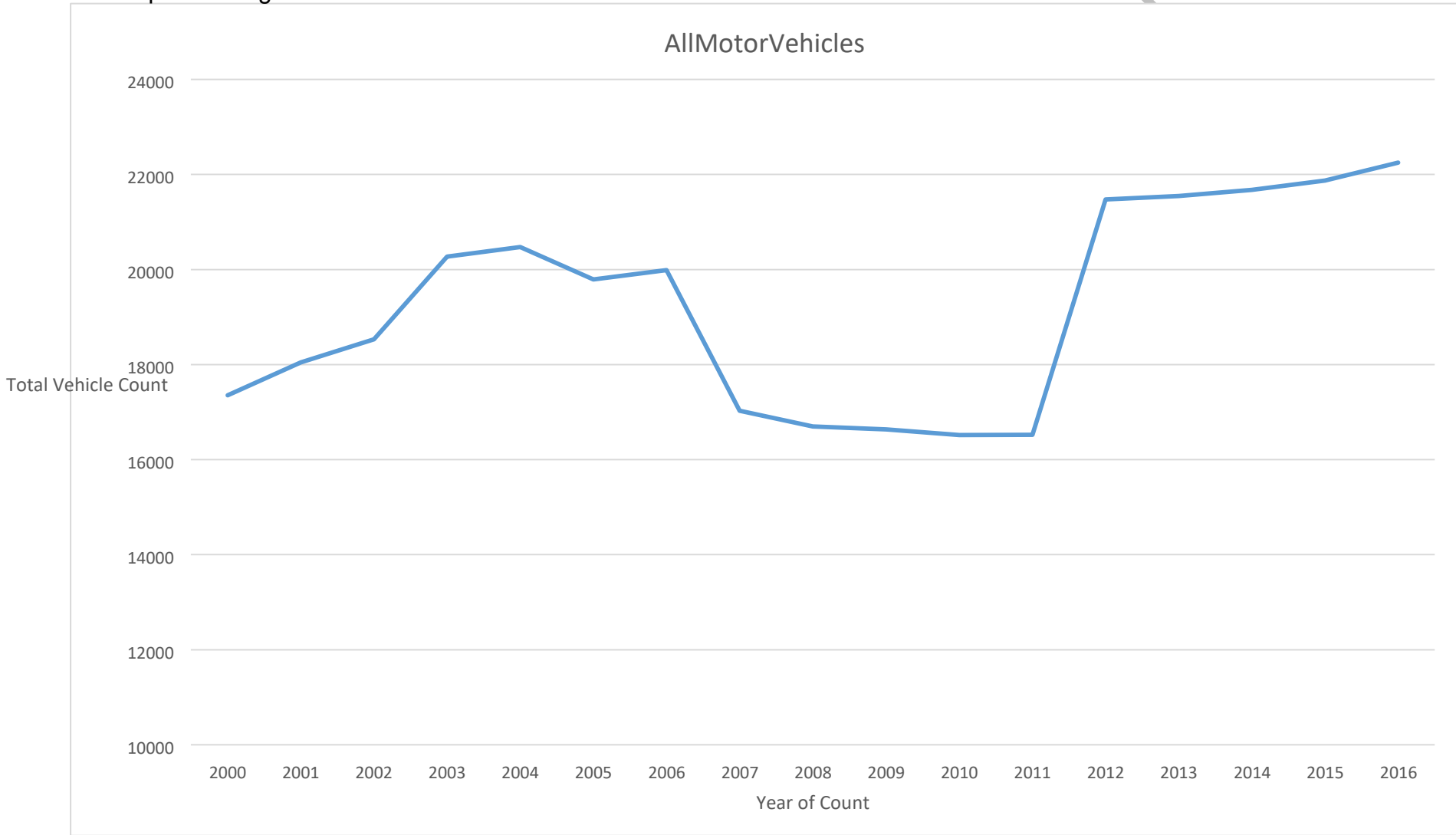
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Appendix
A1 Graph showing vehicle count data for Totnes

AllMotorVehicles



A2 Graph showing vehicle count data for A38 at Dean Prior

