NEWPORT CITY COUNCIL:

Sustainable Travel Strategy (Air, Noise & Sustainability Action Plan)

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Executive Summary

The mode of transport we chose to get from A to B can have a significant impact on the environment. These impacts include noise pollution, air pollution and greenhouse gas emissions that contribute to the change in our climate.

Climate change is due to greenhouse gas emissions. Approximately 27% of UK CO_2 emissions are due to transport. Whilst other sectors such as energy production have shown a marked decarbonisation, the transport sector has shown little to no improvement.

The health impacts associated with air and noise pollution from road traffic emissions are significant. Air pollution has been linked to cancer, bronchitis, asthma, dementia and many other diseases. Noise pollution is associated with sleep disturbance, cardiovascular disease, mental and physical impairment. Public Health Wales has estimated over 40,000 premature deaths in the UK every year are attributed to air pollution (in Wales the proportion is approximately 2,700). Air pollution is estimated to cost the UK between £9-20 billion and noise pollution between £7- 10 billion per year. https://airquality.gov.wales/about-air-quality/health-advice

This strategy is designed to outline the various actions Newport City Council will employ to reduce the level of pollution from road traffic. A City Plan will be developed along with local plans to target known areas of poor air pollution known as Air Quality Management Areas (AQMAs). Each action will focus upon three key elements:

- Reduction in the overall volume of traffic.
- Improve the flow of traffic to minimise idling traffic.
- Change the vehicle fleet composition by promoting the use of less polluting forms of transport, in particular active travel.

The actions are designed to actively and passively drive the city to low/zero emission forms of transport. The targeted actions are summarised on the following page along with the relative funding required, and where appropriate, key performance indicators to demonstrate the progress of the Action Plan.

Success of this strategy will be captured in recording vehicle fleet changes, active travel statistics, green infrastructure improvements, and air & noise pollution levels. The key information will be reported annually in the Annual Progress Report which will be made publically available via the council's website – www.newport.gov.uk/airquality

ACTIONS	**Funding Required / Key Performance Indicator (KPI)**
A - PLANNING & CONSTRUCTION	*Low*
B - CLEAN AIR ZONE	*Substantial*
C – HGV / LGV	*High (KPI)*
D – TAXIS / ON STREET CAR HIRE	*High – Significant (KPI)*
E – BUSES, TRAINS (PUBLIC TRANSPORT)	*Substantial (KPI)*
F - COACHES	*High (KPI)*
G - PETROL & DIESEL CARS	*N/A*
H - Hybrid / Electric	*Significant (KPI)*
I – Walking & Cycling (Active Travel)	*Significant (KPI)*
J – PUBLIC BODIES (Best Practice)	*Low - High*
K – Schools	*Significant (KPI)*
L - PUBLIC AWARENESS/INFORMATION	*Medium - High*
M - STREET / ROAD IMPROVEMENTS & ENFORCEMENT	*Medium - Substantial*
N - LIGHT GOODS VEHICLES / DELIVERIES	*High*

Contents

*ACTION PLANS PAGE 41 ONWARDS

Figures

1.0 Introduction

Air and noise pollution directly impacts the health of everyone to some degree. Road traffic emissions are known to be the main source of air pollution. Standards have been included in legislation to encourage a change to less polluting forms of transport. The National Government, Welsh Government and Local Authorities are responsible in one way or another to support and implement this change.

This strategy outlines how Newport City Council will encourage this change. It will also show how Newport will support Wales's long term commitment to decarbonise, changing to more sustainable modes of transport and a much needed reduction in green houses gases.

Aim: Ensure that Newport reaches the air quality objectives in all areas of the city in the shortest possible time by actively facilitating a change in travel behaviour across the district to a low/zero emission form.

Newport: Background

Newport is the third largest city in Wales situated on the South coast. The city population is just over 145,700, the city population grew by 5.9%[1] between 2001-2011. The population density of Newport is recorded as 765 people per km^2 similar to Torfaen or Caerphilly, and three times lower than Cardiff (2467 people per km^2).

The district covers approximately 217.6 square Kilometres (84 square miles), the majority of which is urban. The main features include a large working dock area, extensive industrial estates and the M4 motorway.

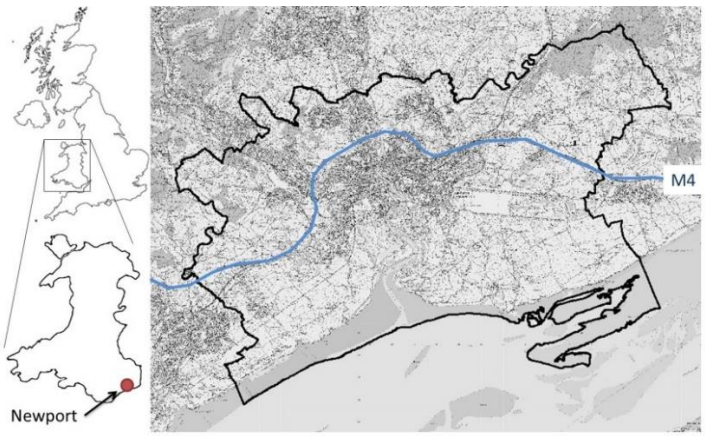


Figure 1 Location of Newport

[1] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censuspopulationandhouseholdestimatesforwales/2012-07-16#main-points

2.0 Legal Context & Policies

EU, UK and Welsh Law

Air Quality - The World Health Organisation (WHO) developed air quality standards for a range of pollutants to protect human health[2]. These standards have been written into European Law, under the European Ambient Air Quality Directive 2008[3]. These standards have also been written into UK and Welsh legislation, namely Part IV of the Environment Act 1995[4] and The Air Quality Standards (Wales) Regulations 2010[5]. The Legislation makes the UK Government, Devolved Governments and Local Authorities responsible for tackling air pollution.

The responsibility of the Local Authority is to identify and monitor areas within its district that may exceed the air quality objectives[6]. If an exceedance is found the area must be declared as an Air Quality Management Area (AQMA) for which a strategy must be produced. The strategy should include practical actions designed to bring the pollution levels down below the air quality objective.

Within the UK the main pollutants of concern are Nitrogen Dioxide (NO_2) and Particulate Material (PM_{10} and $PM_{2.5}$).

Noise - Road traffic is a significant environmental pollutant in an urban environment such as Newport. The Environmental Noise Directive[7] requires Welsh Government to map noise levels and produce a Noise Action Plan[8] where levels are found to be excessive. The duty for implementing the strategy falls at Welsh Government level. However, given that road traffic causes both air and noise pollution Local Authorities have been encouraged to adopt a joint approach to tackle both areas through the Well Being of Future Generations (Wales) Act.

With regard to non-traffic related sources of noise these are generally dealt with under the Environmental Protection Act 1990. The Local Authority has the statutory duty to investigate complaints of noise nuisance. Please see www.newport.gov.uk for further details of the service.

[2] http://www.who.int/mediacentre/factsheets/fs313/en/
[3] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0050
[4] http://www.legislation.gov.uk/ukpga/1995/25/part/IV
[5] http://www.legislation.gov.uk/wsi/2010/1433/contents/made
[6] Air Quality Standards are National Levels – Air Quality Objectives are local levels however in practice these are identical limits.
[7] http://ec.europa.eu/environment/noise/directive_en.htm
[8] http://gov.wales/docs/desh/publications/131217noise-action-plan-for-wales-en.pdf

Green House Gases (GHG) – Road Traffic burns a significant quantity of fossil fuels, which is a major contributor to Green House Gases impacting climate change. Approximately 27%[9] of the UK CO_2 emissions are due to transport. Whilst other sectors have shown a significant decarbonisation, in particular energy production, there has been little, to no change in transport emissions.

The Welsh Government are in full support of the Paris Climate Change Agreement (2016) which requires all participants to actively reduce Carbon Dioxide emissions. This has been written into Welsh Law.

Newport is the third highest generator of Carbon Dioxide Emissions, on average 7.5 tonnes of carbon dioxide are produced per head of population[10].

[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776083/2017_Final_emissions_statistics_one_page_summary.pdf

[10] https://www.centreforcities.org/data-tool/#graph=map&city=show-all&indicator=co2-emissions-per-capita\\single\\2016

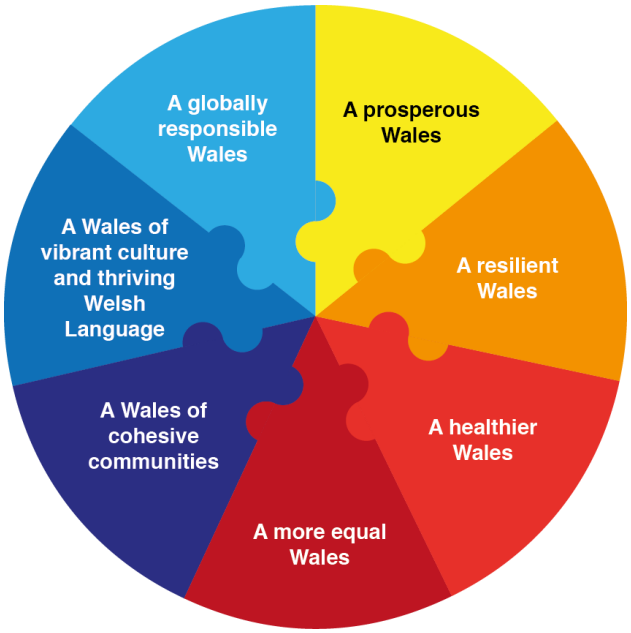
The Well-Being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act 2015 is designed to record and drive forward improvements of the health, wellbeing and environment of Wales. Within the Act sustainable development is defined as:

> *"The process of improving the economic, social environmental and cultural well-being of Wales by tacking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals."*

The sustainable development principle is made up of five ways of working that public bodies are required to take into account. These are:

- Looking to the **long term** so that we do not compromise the ability of future generations to meet their own needs;
- Understanding the root causes of issues to **prevent** them from occurring;
- Taking an **integrated** approach so that public bodies look at all the well-being goals in deciding on their well-being objectives;
- Working with others in a **collaborative** way to find shared sustainable solutions;
- **Involving** a diversity of the population in the decisions that affect them;



There are seven goals within the Act. Together they provide a shared vision for the public bodies listed in the Act to work towards. The well-being goals must be considered as an integrated set of seven to ensure that the relevant links are made in the context of improving the economic, social, environmental and cultural well-being of Wales.

Figure 2 The Well-Being of Future Generations (Wales) Act 2015 Well-being Goals

Under these Well-being Goals there are forty-six national indicators, one of which is specifically relates to air quality:

4. Levels of Nitrogen Dioxide (NO_2) pollution in the air.
40. Emissions of Green House Gasses within Wales.

The Act sets out a well-being duty on specified public bodies to act jointly via a Public Services Boards (PSBs) to improve the economic, social, environmental and cultural well-being of their area by contributing to the achievement of the well-being goals. Newport's PSB will be a useful in raising the profile of air quality and to help achieve the ambitions of this action plan.

Sustainability, Air Quality and Noise have been recognised as key areas of environmental improvement within the Public Service Boards. The plan includes a section of Sustainable Travel that has identified a number of measures and targets the members will aspire to[11].

[11] http://www.newport.gov.uk/oneNewport/Well-being-Plan/Well-being-Plan.aspx

3.0 Understanding the Problem

AIR QUALITY

Air Quality Health Impacts – Historically Newport was home to many heavy industries which operated in a time when regulation was poor or absent causing significant pollution of the air, ground and water. With tighter regulation and the decline of heavy industry, these activities are no longer the primary source of air pollution.

The primary cause of air Pollution in Newport caused by road traffic emissions. These emissions comprise of a variety of chemical substances that are harmful to human health and the environment. The pollutants of concern include Nitrogen Dioxide (NO_2) and Particulate Material (PM_{10} and $PM_{2.5}$).

Air pollution impacts the health of all of us to some degree. Poor air quality has been linked to bronchitis, asthma (and other respiratory illness), cardiovascular disease, cancer and possibly dementia[12]. Chronic (long-term) exposure to air pollution is the priority; however even acute (short-term) exposure can exacerbate a range of underlying illnesses. This health burden is estimated in the UK equivalent to around 40,000 deaths per year.

Nitrogen Dioxide (NO_2) - The primary source of Nitrogen Dioxide is generated from road traffic emissions from the combustion of fossil fuels. Short term exposure to high levels of Nitrogen Dioxide is known to cause inflammation of the airways. Long term exposure can cause bronchitis, asthma and reduced lung function in children.

Particulate Material - Particulate Material (PM) is a term used to describe the mixture of solid particles and liquid droplets suspended in the air, which when inhaled can penetrate deep inside the lungs. PM can be both organic and inorganic substances, and due to variations in size, it is generally split into two sizes:

- PM_{10} - material smaller then 10 µmm
- $PM_{2.5}$ – material smaller than 2.5 µmm

Whilst PM can be generated from natural sources it is man-made sources that make up the majority of the concentration. As PM is emitted during the combustion of solid and liquid fuels, road vehicles are an important source. Within the urban environment road traffic produces a high proportion of PM. 80% of the particulate that is generated from a vehicle comes from brake pads and tyre wear, with the remaining 20% from

[12] http://www.wales.nhs.uk/sitesplus/888/page/81974

engine emissions. Short and long term exposure to high levels of PM can result in adverse health effects, which include an increased risk of individuals developing cancer and cardiovascular and respiratory diseases.

WHO have been unable to identify a level of either PM_{10} or $PM_{2.5}$ where there would be no anticipated adverse health effects. However, it is generally accepted that achieving a particulate free environment is impractical. Hence particulate standards that are considered to be the lowest practicably achievable have are set.

Air Quality Standards - The WHO air pollution limits have formed the European Union air quality standards which have been written into UK and Welsh legislation. Within this legislation there are several air quality standards for a range of pollutants. In Wales only two pollutants (Nitrogen Dioxide and Particulate) have been shown to exceeded.

Figure 3 - Air Quality Objectives (Wales) [13]

Pollutant	Annual Mean	Hourly Mean
Nitrogen Dioxide NO_2	40 µg/m^3	200 µg/m^3 not be exceeded more than 18 times a year
Particulate PM_{10}	40 µg/m^3	50 µg/m^3 not be exceeded more than 35 times a year
Particulate PM2.5	No current limit set in Wales as of 2019	
	WHO standards:	
	10 µg/m^3	25 µg/m^3

[NB – Air Quality Standards/Objectives: The Air Quality Standard relates to the WHO, EU, and Government Standard, the Local Authority is charged with achieving the Air Quality Objective. Whilst the terms are different the target levels are identical]

Air Quality Management Area (AQMA) - The Local Authority has the duty to investigate air quality and where it is found to be failing the standards at the façade of a receptor (residents, school, care home or hospital) an Air Quality Management Areas (AQMAs) shall be declared.

Other areas of the district may be subject to poor air quality such as the verge of a motorway or A-Road, however as there are no residents, schools, care homes or hospitals present, these areas are not generally monitored by the Council.

[13] The Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138),The Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298)

Air Quality – Newport vs Wales - Air pollution is worse in urban areas due a number of people living in close proximity to a dense and congested road network. An individual person may choose healthy options. However if the environment is polluted there is little that individual can do to limit the impact upon their health. Assuming that all other factors are neutral, it could be said - the lower the level of pollution, the healthier the general population. Currently Newport has one of the highest levels of air pollution in Wales (see Figure 4)

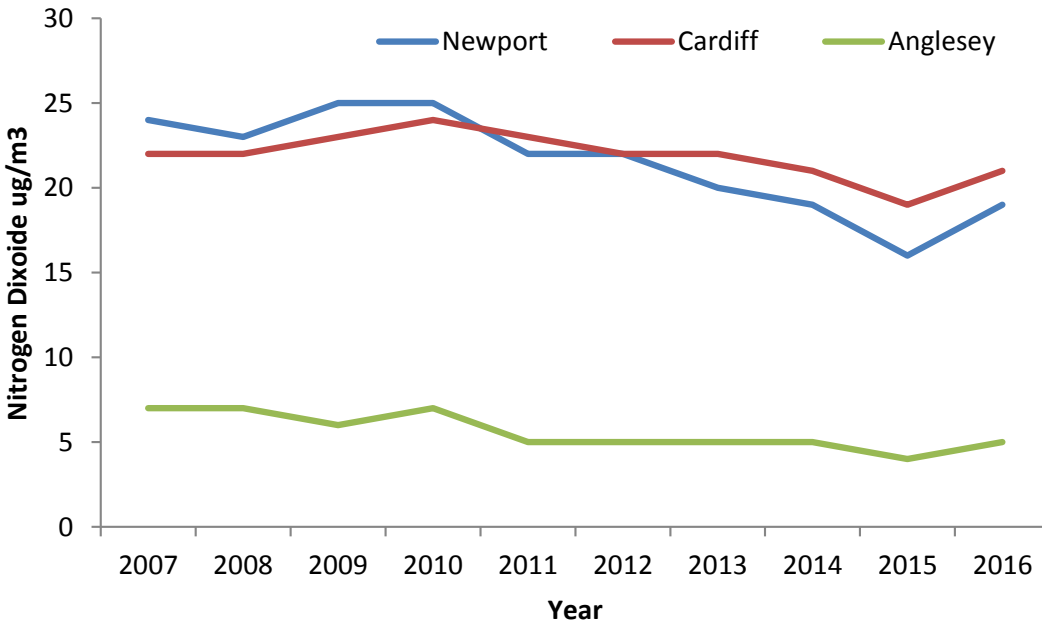


Figure 4 - Average Air Quality at Cardiff, Newport and Anglesey[14]

Air Quality Economic Impacts - There are direct impacts on the economy due to poor air quality. Because air quality impacts the health population, including people of working age there are direct consequences for the loss of working days contributing to low productivity.

The health impacts also cause a strain on the health services, which in turn increase the funding requirements. It is estimated that the health impact of poor air quality costs UK economy 9 – 20 billion per year https://airquality.gov.wales/about-air-quality/health-advice.

[14] https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Air-Quality/airqualityindicators

Seasonality & Air Quality - Air Quality varies throughout the year due to atmospheric affects. Generally during the warmer month's air pollution is lower than the colder months.

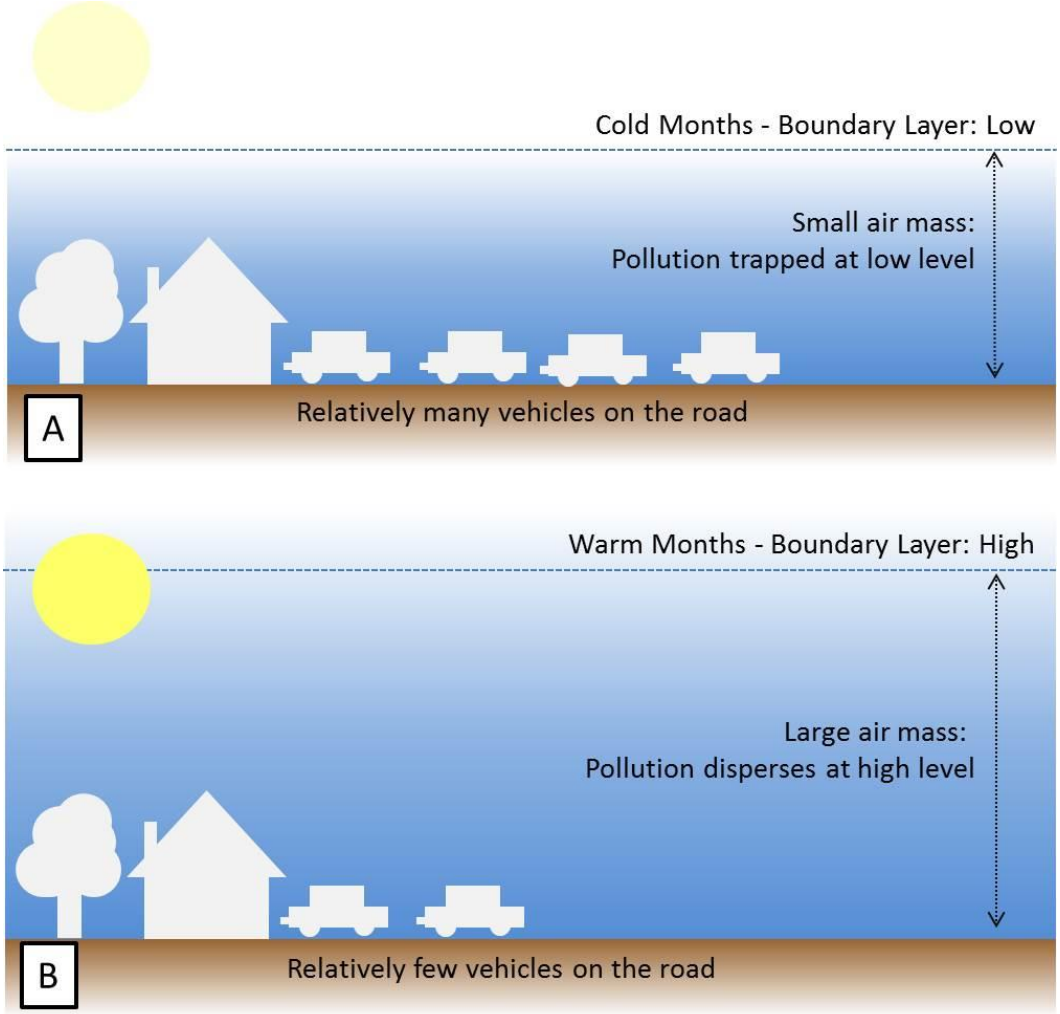
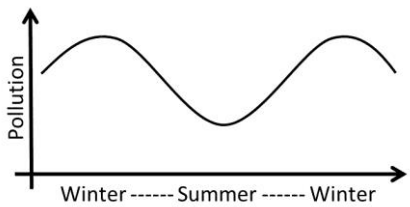


Figure 5 During the warmer months the lower atmosphere is heated by the sun allowing the air mass to expand. This allows pollution to dissipate because of the extra space. During colder months the lower air mass is relatively close to the ground trapping pollution at low levels when vehicle use is relatively high. This boundary affect causes a seasonal variation in pollution concentrations at low level. Other weather events such as fog can also cause pollution to become more concentrated.



Other Sources - Air Quality within Newport is primarily impacted by road traffic emissions, hence it is the focus of this strategy. Other sources of air pollution include fireworks, wood burners, bonfires, building sites etc. Industrial emissions are regulated through the Environmental Permitting Regulations and Industrial Emissions Directive.

Responsibility to regulate industrial processes falls to the Local Authority or National Resources Wales (depending upon the nature and scale of the facility). Whilst these emissions will contribute to the background level of pollution, they have not been identified as a primary source of pollution.

NOISE

Noise Health Impacts - Noise can cause a number of short and long term health problems, such as sleep disturbance (impacting mental health & physical health), cardiovascular effects and hearing impairment.

Noise is comprised of sound waves. The variations of the tone, frequency and intensity (volume), duration and how often it occurs can determine if the noise is perceived as pleasant, annoying or a nuisance. A report published by the World Health Organisation in March 2011 identified environmental noise as the second largest environmental health risk in Western Europe[15].

Noise Standards – The World Health Organisation has recognised noise as a contributor to poor health and has provide a range of noise guideline values[16]

Environment	Guidance Level
Internal Noise Level	30 – 35 LAeq (dBA)
External Noise Level (gardens etc.)	50 – 55 LAeq (dBA)

Technical Advice Note (TAN) 11[17] and various other standards are in place to ensure suitable internal sound levels for new developments and to safeguard existing ones.

Structural mitigation measures such as double glazing standards, noise barriers and such like are employed to ensure the relevant guidance standards are met. However, this approach does little to tackle the source of the noise pollution, especially from road traffic sources.

Noise Mapping – The noise mapping undertaken by Welsh Government in 2012highlighted a large proportion of Newport is impacted by road traffic noise.

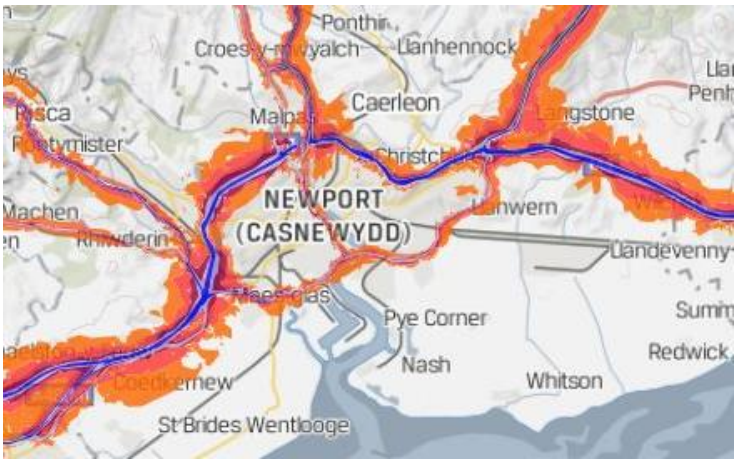


Figure 6 – Road Traffic Noise Map of Newport 2012. Further details available via http://lle.gov.wales/map

[15] http://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf
[16] http://www.who.int/docstore/peh/noise/Comnoise-4.pdf
[17] http://gov.wales/topics/planning/policy/tans/tan11/?lang=en

Economic Impact of Noise – In 2014 the estimated annual social cost of urban road noise in England is £7 – 10 billion[18]. No similar estimations for the impact in Wales are available; however, the economic impact of road traffic noise on Newport is likely to be substantial.

Carbon Dioxide Emissions

Health Impacts – Carbon Dioxide is naturally occurring in our atmosphere. However, the various natural cycles that keep the level of Carbon Dioxide in check are being overwhelmed by manmade emissions, causing Carbon Dioxide levels to rapidly increase. Transport emissions have, and still are contributing to a net increase in the global Carbon Dioxide. The concentrations at a local level are unlikely to cause significant harm to human health.

However, the wider consequences of Carbon Dioxide emissions are due to their contribution to global warming which causes climate change. If the targets for decarbonisation are not met, the impacts on human health and the environment are predicted to be devastating. In 2018 the Intergovernmental Panel on Climate Change (IPCC) stated the World has approximately 12 years (from 2018) to radically reduce carbon dioxide emissions. If we fail to meet the reduction targets global warming is likely to be intolerable for future generations.

Standards – There are no standards relating to Carbon Dioxide emissions from transport which the Local Authority is responsible for. From 2008 road tax has been calculated based on the vehicles reported CO_2 emissions values. Vehicles with higher emission of CO_2 are taxed at a higher rate.

Economic Impacts – Globally the best case scenario for the economic impact due to climate change is significant, the UK economy will also suffer substantially.

[18] https://www.gov.uk/guidance/noise-pollution-economic-analysis

4.0 Transport & Pollution

Emissions from cars, taxies, buses, LGVs (Long Goods Vehicles), HGVs (Heavy Goods Vehicles), Light Goods Vehicles and any other fossil fuel burning mode of transport generate pollution, especially in urban areas. To better understand how to encourage a change to a low/zero emission transport network, it is important to understand the current makeup of the vehicles on Newport's Roads.

It is also important to understand the distinction between air pollution and CO_2 emissions. Air Pollution relates the impact of emissions on human health (and/or the environment). CO_2 emissions produced by a vehicle contribute towards climate change.

Volume and Flow of Traffic

The number of road vehicles in Newport has increased by approximately 20% over the last 15 years (see Figure 6). Unfortunately, the road network has struggled to keep pace with this increase.

Methods of simultaneously improving air and noise pollution include:

- diverting traffic to routes with more capacity;
- changing the existing road structure to provide more distance between receptors and the road side (dispersion of pollutants); or
- improve the rate of flow to ease areas of congestion

However, these approaches will not help reduce the overall volume of traffic, which is critical to help improve air quality and reduce CO_2 emissions. A reduction in the volume of traffic will:

- Reduce pollution (Carbon Dioxide, Nitrogen Dioxide and Particulate etc) from the production and use of motor vehicles.
- Reduce noise pollution

New and improved engine technologies and the implementation of electric vehicles do offer benefits to reducing Nitrogen Dioxide and Carbon Dioxide Emissions from vehicle usage. However, brake pads and tyre wear are major sources of particulate material which are unlikely to show any benefit to particulate emissions from road traffic sources.

To work out where resources should be focused, it is important to understand the composition in vehicle types and how this has changed over time. A summary is provided in Figure 7 which indicates that whilst the overall number of vehicles has increased, the percentage of cars, buses and motorcycles have remained relatively constant.

Unlike HGVs, which have remained steady in number but been diluted by the increase in other road traffic (hence the decrease in percentage terms). The only group of vehicles that have shown a significant increase are light goods vehicles growing by 3% in the last 15 years. This is likely due to the growing popularity of internet shopping and home deliveries.

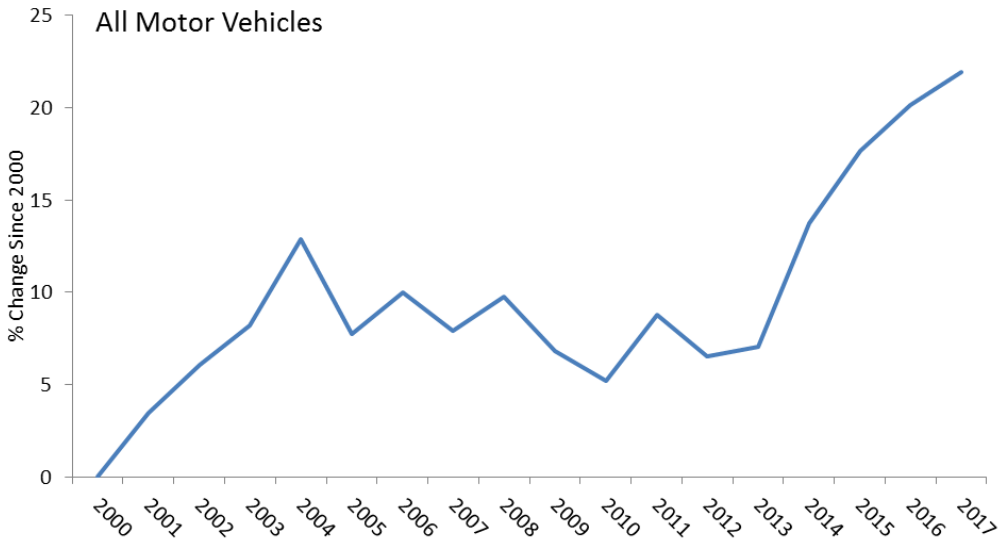
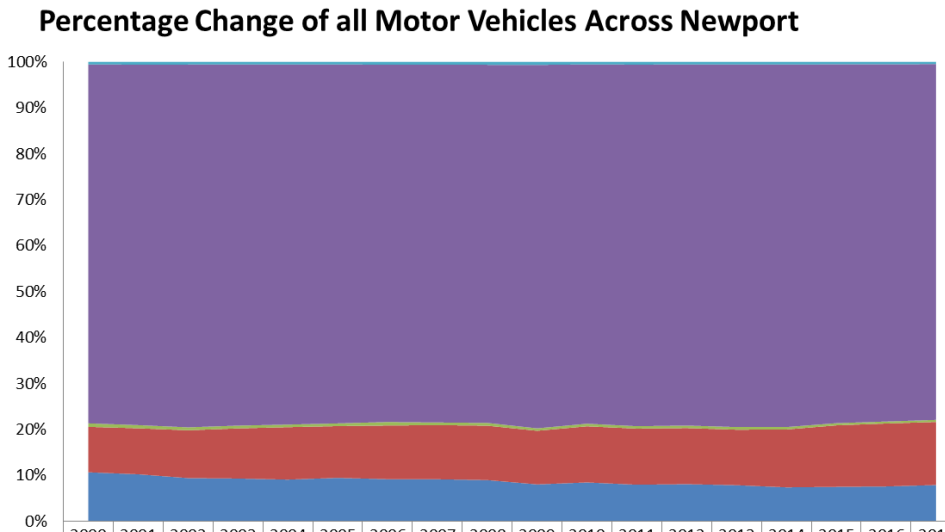


Figure 6 - Percentage change of all motor vehicles across Newport since 2000[19]



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Motorcycles	0.5	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5
Cars	78.1	78.4	78.9	78.5	78.4	78.1	77.7	77.9	77.9	79.1	78.2	78.7	78.6	78.9	78.9	78.1	77.7	77.4
Buses & Coaches	0.8	0.7	0.6	0.6	0.6	0.6	0.8	0.6	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.5	0.4	0.4
Light Goods Vehciles	9.9	10.0	10.4	10.9	11.4	11.3	11.7	11.8	11.8	11.7	12.2	12.2	12.2	12.1	12.6	13.4	13.7	13.7
HGVs	10.7	10.3	9.5	9.4	9.1	9.5	9.2	9.2	9.0	8.1	8.5	8.0	8.1	7.9	7.5	7.6	7.6	7.9

Figure 7 - Percentage breakdown of vehicle types within Newport since 2000[16]

[19] http://www.dft.gov.uk/traffic-counts/area.php?region=Wales&la=Newport

Fleet Composition & Euro Classes

Road traffic comprises of a variety of vehicles, with differing engine sizes and fuel types. Each vehicle produces varying amounts of pollution depending upon driving conditions, topography, age, maintenance etc.

For example, driving an old, poorly maintained HGV on a congested up hill road in cold, foggy conditions would generate substantially more pollution than driving in a new, regularly maintained, petrol car on a level road on a clear day.

In 1992 the Euro Class Standards were implemented by the European Union to regulate vehicle emissions for air pollution. These Standards are now in their sixth phase. A summary of the emission profiles based on laboratory results is plotted in Figure 8 & 9, comparing petrol, diesel, HGVs and Buses.

The emission profiles demonstrate that there are considerable differences been vehicle types and emissions at different speeds. Petrol cars produce relatively low emissions of Nitrogen Dioxide at all speeds in comparison with diesel cars and HGVs, which only reduce at higher speeds.

It should be noted that the Euro Standards aim to kerb the emissions of pollutants with regard to air quality to protect human health and the environment. However, there are no regulations regarding the emissions for Carbon Dioxide. Instead vehicle that produce more Carbon Dioxide are discouraged via high taxation.

Speed Restrictions & Air Quality

There is on-going research and debate as to the optimum speed restriction with respect to emissions (Nitrogen Dioxide and Particulate). However, it is now generally apparent that lower speeds provide a safer environment for cycling and walking. Where ever lower speeds are proposed, air quality should not be used as an argument against the implementation. In the majority of the cases the benefits for walking and cycling that will encourage a modal shift away from fossil fuelled transport should be supported.

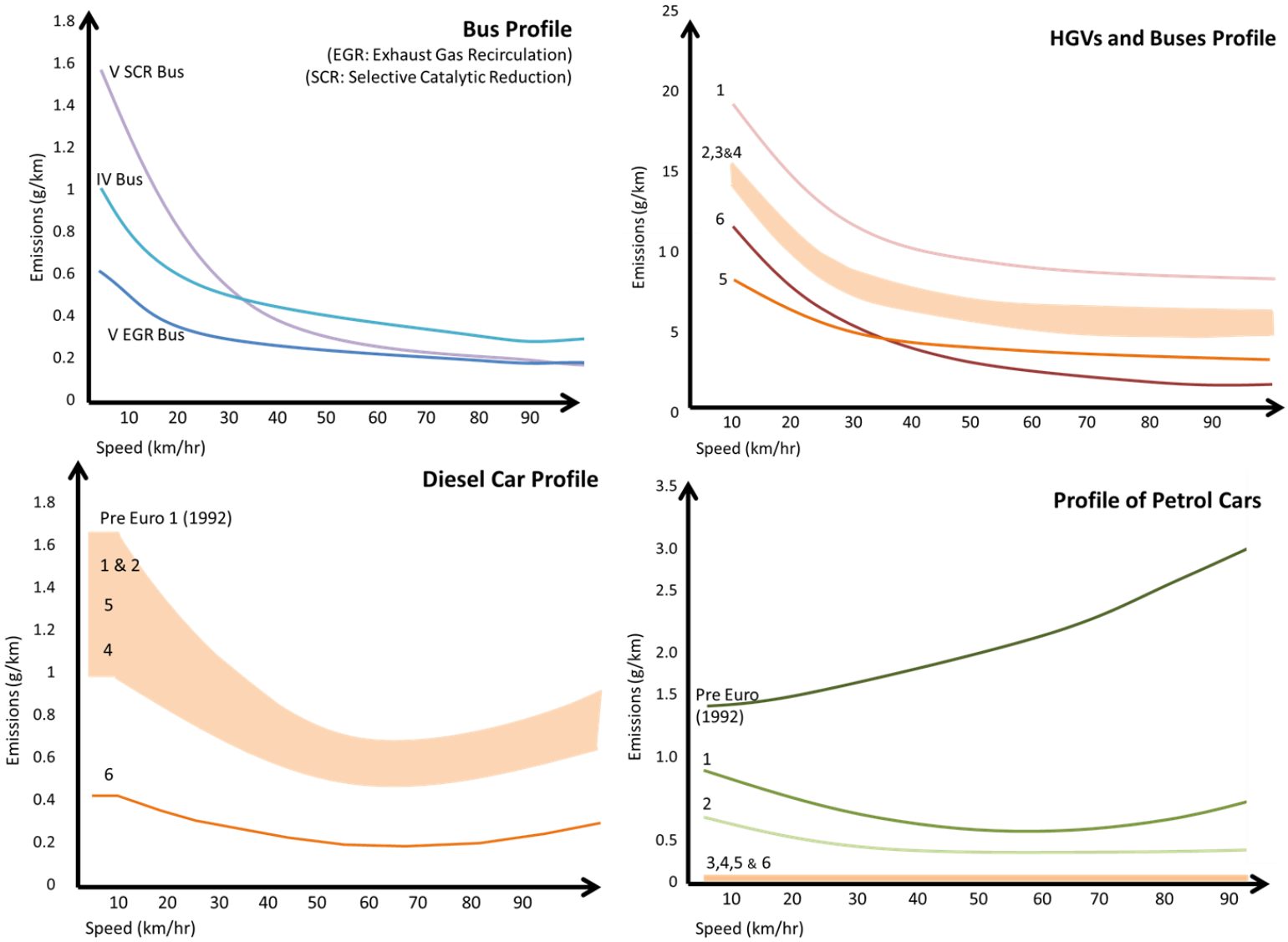


Figure 8 - Comparison of the Euro Standard emissions profiles (Nitrogen Dioxide) based on the emissions factor tool kit[11]

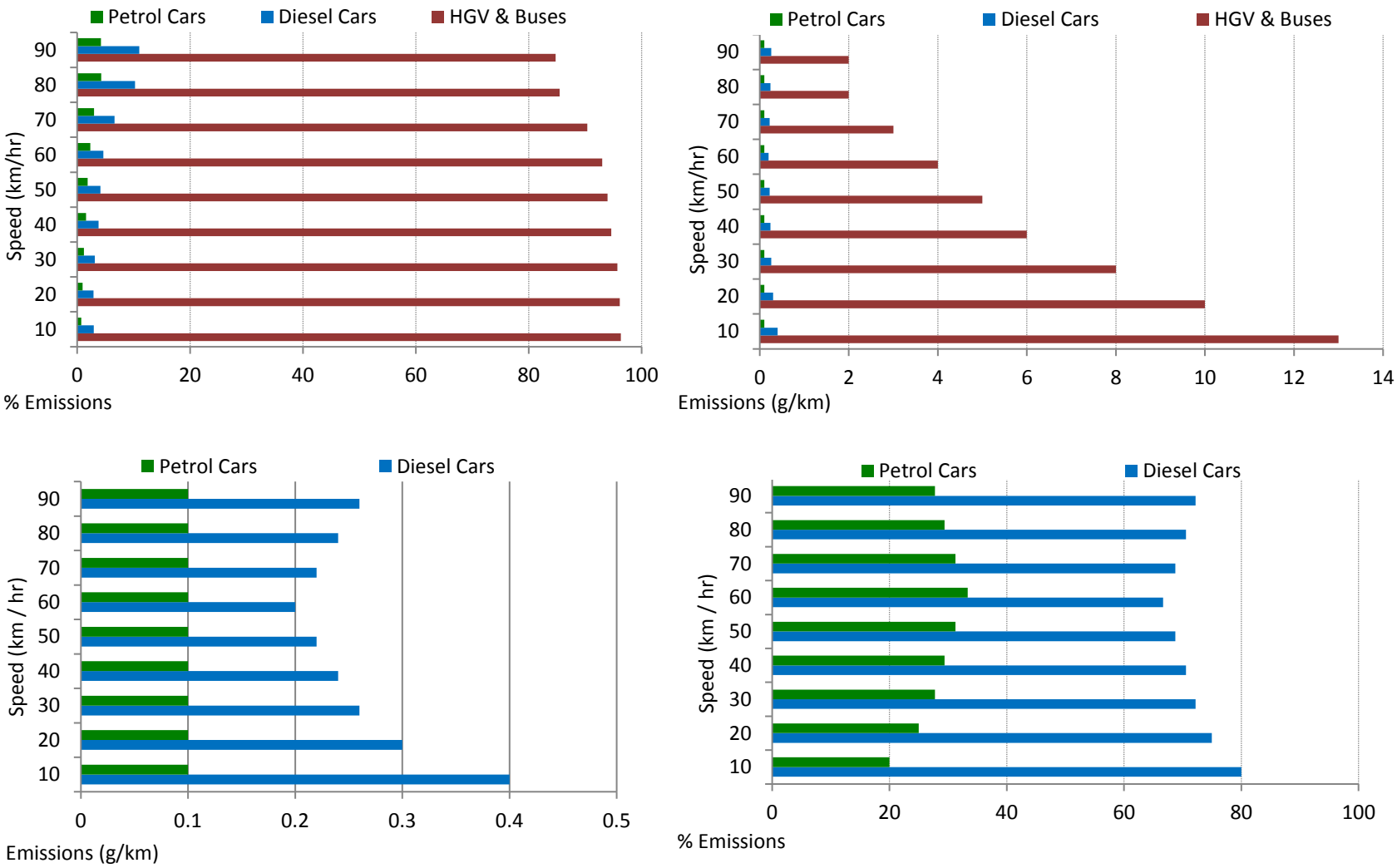


Figure 9 Comparison of the emission profiles (Euro 5&6 average) of HGVs, Petrol & Diesel Cars (Nitrogen Dioxide). Whilst the precision of these profiles may not be fully accurate the general trend is considered useful. Data based on the emissions factor toolkit[20]

[20] http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html

Carbon Dioxide Emissions by Vehicle Type

Similar to air pollution, carbon dioxide emissions vary depending on vehicle types. In the UK approximately 27% of carbon dioxide emissions come from road traffic. Of which just under two thirds (62%) are generated from cars. HGVs and Vans contribute 18% and 17% respectively. Coaches and buses make up a relatively small fraction of 3%, with other vehicles making up less than 0.3%.

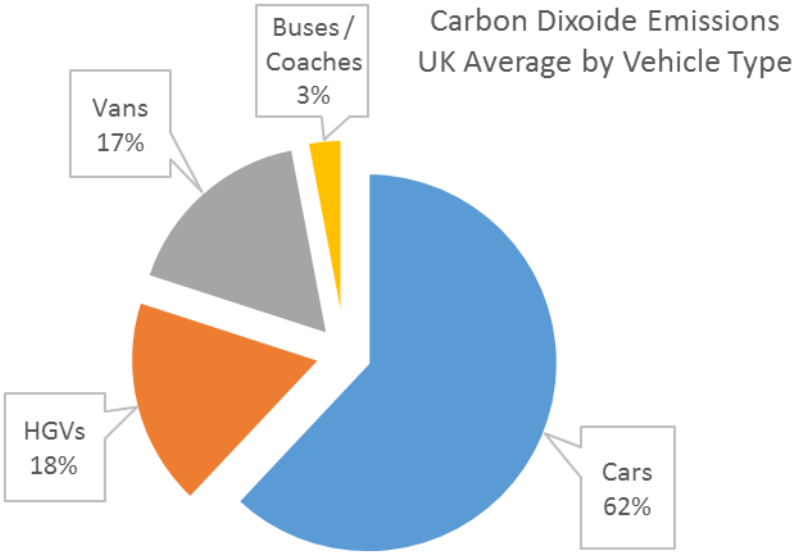


Figure 10 UK Average CO2 emissions by vehicle types (2016)[21]

Alternative Transport

As shown, vehicle numbers have increased by 20% over the last 15 years. It is also important to determine if there has been a similar increase in the uptake of alternative forms of transport such as trains, buses and cycling. These modes of transport are seen as the most viable alternative to fossil fuelled car travel.

Railway Use

Newport has three railway stations. The main Newport station is located in the centre of the city with two smaller stations located to the northwest (Rogerstone and Pye Corner). Prior to 2012 the usage appears to be fairly statistic which has then significantly increased in the last 3 years (See Figure 11).

[21] https://www.gov.uk/government/statistical-data-sets/energy-and-environment-data-tables-env

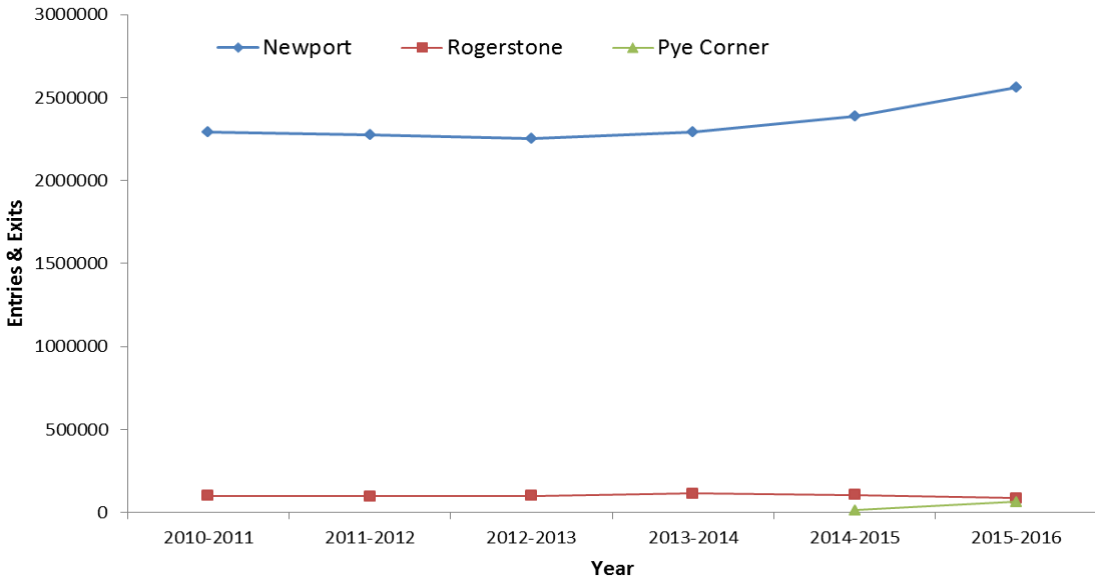


Figure 11 Train Station Usage: Entries & Exists[22]

Bus Usage

Unfortunately, it has not been possible to chart the number and composition of the bus fleet across Newport. Efforts will be made to determine the most appropriate method of capturing this data in the future.

[22] http://orr.gov.uk/statistics/published-stats/station-usage-estimates
http://gov.wales/statistics-and-research/rail-station-usage/?lang=en

Cycling

There is no consistent data set monitoring cycle usage in Newport. Data from the department for transport which is primarily focused on motor vehicles has captured some cycle usage. However, as the primary focus of this data collection and study is for motor vehicles, therefore this data cannot be seen as definitive. The trend of cycle usage shown in Figure 12 indicates a sharp increase from 2013 onwards.

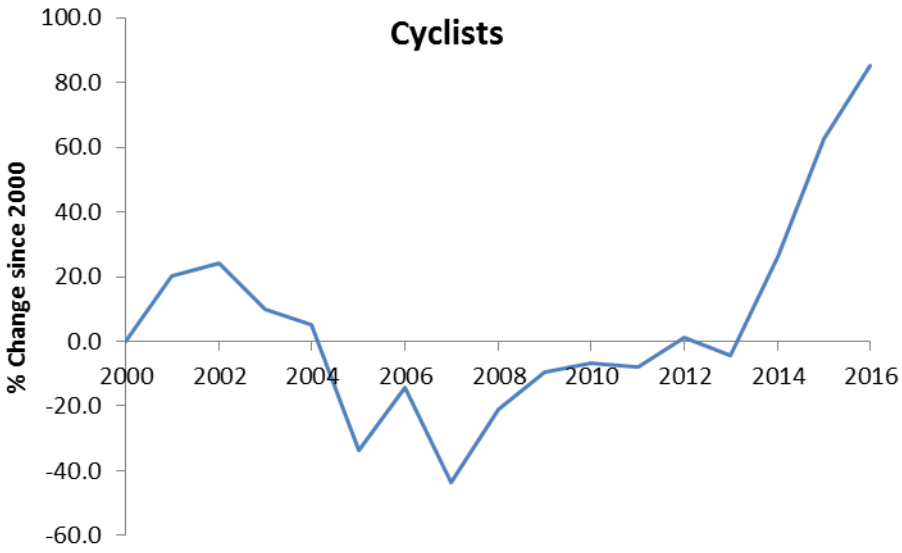


Figure 12 - Cycle usage change since 2000[23]

[23] http://www.dft.gov.uk/traffic-counts/area.php?region=Wales&la=Newport

5.0 Scope, Monitoring & Funding

For any action it is important to define its scope. In this strategy three distinct areas have been defined: the composition of the fleet, the flow of traffic and the reduction in traffic. Not every action will be able to fulfil all three, some will have success in only one, others may have success in two and a handful will have success in all three.

Change Fleet	Improve Flow	Reduce Volume
Different vehicle classes generate differing amounts of pollution (i.e. Electric Cars are less polluting than Diesel) ↓ Altering the fleet composition to low(er) emission types can improve air quality, reduce noise pollution and CO_2 emissions.	Idling traffic causes emissions to build up in restricted areas damaging air quality & wasting fuel that generates unnecessary CO_2 ↓ Improving the flow of traffic minimises the instances of traffic idling, reducing the damage to air quality and CO_2 emissions.	High traffic volume with many vehicle exhausts emitting pollution is damaging to air quality and produces high levels of CO_2 ↓ Reducing the number of vehicles reduces the concentration of vehicle emissions leading to an improvement for CO_2 noise and air quality.

Key Performance Indicators (KPI)

How do you measure the results? Broadly this can be split into two categories

- the problem: air quality monitoring, noise mapping etc
- the solution: fleet composition etc

With regard to the level of pollution, there is a considerable data set already captured and maintained which is reported upon in a number of ways, such as the annual Air Quality Progress Report.

With regards to the solution there are many sources of data that can be captured and reported upon to demonstrate the modal shift and success (or failure) of the strategy. A few methods are described below, and where possible a KPI has been assigned to each action.

Fleet Composition & Volume – It is important to keep track on the composition and volume of road traffic. A number of sources shall be used to report upon: the bus

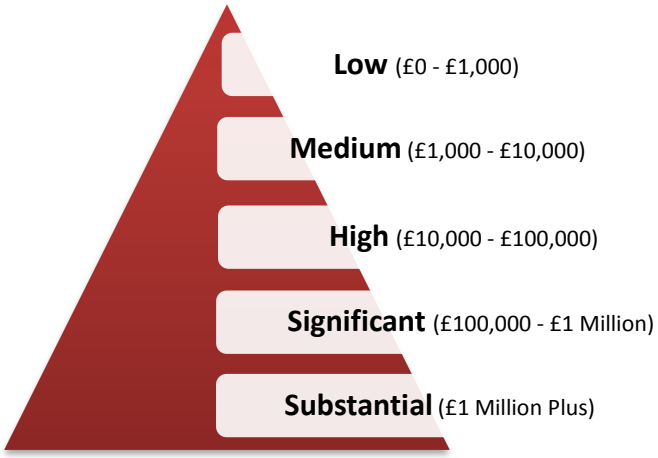
fleet, council fleet, taxi fleet etc. along with the overall composition & volume of traffic.

Electric vehicle charging points – More electric vehicle charging point will be required to support the change to Electric Vehicles. The number of Electric Vehicle Charging points will be captured and reported upon annually.

Participation – Uptake by schools, participation by operators in a fuel economy scheme etc are simple ways to determine how successful an action has been. If there has been limited success analysis will be undertaken to determine what the barriers are and how they can be resolved.

Funding

To implement any action a source of sustainable funding is required. The benefits should not be measured only against a financial scale. The health and local economic impacts should also be considered to provide a balanced judgement. To provide some approximate costs involved with each action the following scale will be applied:



The majority of the funding will be sourced from capital grants and any other external resources that are available. None of the actions are intended to place a financial burden upon existing council services.

6.0 Actions

Actions are the most important part of this strategy. This section provides a description of possible action the Council could implement. This is a starting point to provide the framework for multi scale approach, from a city plan and local plan(s).

This way it will be possible to demonstrate how the scale of one action (city wide) will complement another site specific action. This will also allow the strategy to be adapted and updated to suit the city's needs as things develop over time.

- **CITYPLAN –** this plan will have the most impact on a city wide scale rather than targeting any specific area. This will be aimed at reducing the background pollution level and cutting carbon dioxide emissions.

- **LOCAL PLANS –** following the same format as the city wide plan but with detail as to how the actions will be implemented locally to combat issues such as air pollution.

- **ADDITIONAL PLANS** – There is nothing stopping the format of this strategy to be adapted for any project, internally or externally - From planning through to company travel plans. A toolkit will be developed to aid how this could be done, allowing for projects to integrate into the aim of the Local & City Plan.

A – PLANNING AND CONSTRUCTION

Change Fleet	Improve Flow	Reduce Traffic

KPI – None | Funding: Low

- Planning is a key method to influence the type and design of future developments. Influencing the planning process to include best practice, such as active travel and electric vehicle charging points will provide and support a fundamental change to less polluting forms of transport.

  With carefully considered policy, the planning process can be used to ensure the impact of development near existing AQMAs are minimised, and new AQMAs are declared.

  Furthermore, the construction period can cause a significant increase in highly polluting vehicles. The planning process can be used to ensure these impacts are minimised via a construction and environmental management plan (CEMP) with air quality principles.

Action:

- Implement Supplementary Planning Guidance.
- Implement Construction and Environmental Management Plan (CEMP) designed with good air quality practice for construction sites.

B – CLEAN AIR ZONE (CAZ)

Change Fleet	Improve Flow	Reduce Traffic

KPI – None

Funding: Substantial

- A Clean Air Zone (CAZ) are designated areas where certain vehicle types can be restricted through a charge.

  These can range from designation with signage (raises awareness) to hefty charges and enforcement.

  Noise & CO_2 emissions – Overall it is likely there will be a beneficial impact on the local noise environment. But, during the feasibility studies a noise impact should also be examined, along with the potential CO_2 impact.

Action:

- Assess the feasibility of CAZ which will also look at the health, noise, CO_2 and economic impacts.
- If appropriate undertake detailed feasibility assessments with view to implement a CAZ.
- Once designated, the infrastructure for a CAZ will provide method to implement a range of more stringent enforcement - if and when appropriate.

C – HGV / LGV	
Change Fleet	Reduce Traffic
KPI – No. Participating Companies	Funding: High
▸ Freight vehicles (LGV/HGV) contribute approximately 10 times more pollution compared to a petrol car. Developing a partnership with LGV/HGV operators that promotes fuel economy and reduces running costs will help reduce the pollution impact ~ The less fuel burnt the more money saved, the less air pollution generated.	***Action:*** ▸ Explore and implement an HGV/LGV partnership scheme which promotes fuel economy for Newport.

D – TAXIS / On Street Hirer (Car Clubs)

Change Fleet	Reduce Flow
KPI – Composition & Charging Points at Taxi Ranks	Funding: High – Very High
▸ The taxi fleet, compared to other domestic sized vehicles, are in constant use. Methods of encouraging and supporting a change to ultra-low / zero emission vehicles should be implemented. In particular Council policy relating to taxi licensing should play a significant role in encouraging this change. On Street Car Hirer (Car Clubs) where people can rent a car for a nominal fee for a few hours have already been established in several cities in the UK. This means there are fewer cars within the city, but the ones that are here are being used more of the time. A privately owned car is only used about 5% of its whole life time. 95% of the time it is parked.	***Action:*** ▸ Encourage a policy to support a fleet of low/zero emission taxis ▸ Develop a taxi partnership to encourage best practice (anti-idling etc). ▸ Encourage the installation of Electric vehicle charging points at Taxi Ranks. ▸ Encourage and develop On Street Car Higher (Car Clubs).

E – BUSES & TRAINS (Public Transport)		
Change Fleet	Improve Flow	Reduce Traffic
KPI – Fleet Composition & Usage		Funding: Substantial

- BUS: Similar to HGVs, older buses can contribute significant amounts air pollution. Forming a partnership with bus operators exploring ways of upgrading the fleet to a low/zero emission one, encouraging fuel economy and promoting the use of public transport will reduce the bus fleet impact on the environment.

- TRAIN: Encouraging the use of public transport has two key advantages:
  - Reduce the number of vehicles on the road cutting congestion
  - Capitalises on low emission upgrading of bus and rail fleets.

  Noise – Encouraging the use of public transport that is actively applying low emission technologies is likely to have a beneficial impact upon the sound scape.

Action:

- Develop a partnership with bus operators and support a change to low emission vehicles.
- Encourage lower emission buses to be used on the most vulnerable air quality routes.
- Encourage and support the uptake of zero emission vehicles.
- Encourage the use of public transport.

F - COACHES	
Change Fleet	
KPI – No. Participating Companies	Funding: High
▸ Coach transport is significantly different to bus transport. Buses travel on defined routes where as coaches do not. They operate for a range of reasons such as tourism, schools, sporting fixtures etc. As such, a different approach is required to that of bus transport.	***Action:*** ▸ Develop a partnership with local coach operators similar to that of the HGV fuel recognition scheme.

G - Petrol & Diesel Cars

Change Fleet	
KPI – Fleet Composition (Where possible)	Funding: N/A
▸ Out of all the car types, diesel cars are considered the most polluting for air quality. They also contribute to noise pollution and Carbon Dioxide emissions. The use of diesel cars should be discouraged where possible. ▸ Petrol cars are the least polluting form of fossil fuel power vehicle. However, they still contribute noise & air pollution and contribute to Carbon Dioxide emissions. The use of petrol cars should be discouraged where possible.	***Action:*** ▸ Passively discourage petrol & diesel cars by providing priority parking and routes for low/zero emission & Active Travel.

H - Hybrid / Electric Vehicles

Change Fleet	
KPI – Fleet Composition (Where Possible)	Funding: High / Very High
▸ Electric / Hybrid vehicles produce low/zero emissions and should be encouraged whenever possible. Existing large destination points (shopping centres, train stations, car parks etc) will be encouraged to install electric charging points. New developments will be required to install charging points via the AQ SPG (See Action A). A strategy of installing a number of on street electric charging points will also be developed. These will be positioned where they are considered to have either 1. The highest use and/or 2. The highest potential for public awareness. This should be supported with an ongoing public awareness campaign of the benefits and locations.	***Action:*** ▸ Actively encourage the installation of electric vehicle charging points at existing large scale destinations (trains stations, car parks etc). ▸ Actively encourage the installation of electric vehicle charging points via the planning process. ▸ Explore and implement a policy of on street charging points at key locations (i.e. Taxi Ranks, premium locations parking bays). ▸ Encourage the use of Electric / Hybrid Vehicles across the district by public awareness.

I – Walking & Cycling (Active Travel)

Reduce Traffic

KPI – Usage	Funding: Significant
▸ Cycling is a highly efficient and method of transport with a relatively low impact upon the environment. Encouraging cycling across the city is seen as a fundamental key approach to radically reducing pollution levels. Efforts to maintain expand and encourage the use of cycle routes for active travel will be developed and implemented across the city. In particular, encouraging the use of cycle to schools, cycle to work schemes in both the public and private sector and through the planning process. ▸ Travelling on foot is usually a method of transport that is often overlooked. Similar to cycle paths any efforts to maintain expand and encourage the usage of good quality foot paths and walking routes as part of an active travel network will be supported.	***Action:*** ▸ Actively support the expansion of the cycle network. ▸ Active travel will be actively supported and encouraged, via the expansion of cycle routes and initiatives to encourage cycling to and from key destinations (work, school, home etc).

J – PUBLIC BODIES (Best Practice)	
Change Fleet	Reduce Traffic
KPI – See Well Being Plan	Funding: Low - High
▸ All public sector bodies: The Local Authority, Health Service, Fire & Police Service and so on are large employers. All of which should become role models in best practice. Policies and procedures to implement active travel, encourage the use of public transport and change vehicle fleets to low/zero emission should all be implemented. The Public Service Board under the Well Being Act is a key stakeholder in supporting this action.	***Action:*** ▸ Within the organisation: ○ Implement polices to encourage a low emission fleet of vehicles. ○ Actively Encourage Active Travel. ○ Actively Encourage low/zero emission forms of transport for staff / car sharing. ○ Support and promote the use of public transport internally. ○ Raise awareness of air quality across the workforce. ▸ Encourage similar actions as listed above in other public bodies.

K – Schools

Change Fleet	Reduce Traffic
KPI – No. Participating Schools	Funding: Significant
▸ Schools generate a significant volume of traffic during drop off and pick up. Parents, school buses and staff all contribute to the congestion. This causes high levels of localised pollution in which the most vulnerable groups (children) are exposed. A highly focused combined effort on all parties (schools, the Council, parents and WG) is required to help reduce the pollution caused by all these journeys and imbed active travel in the next generation as the 'norm'. Cycle and walking routes will be developed to the schools and initiatives to support their use will be developed. These actions will only succeed if there is sustained support from schools, the Council and Welsh Government. If any of these bodies are unable to commit, these actions are likely to fail.	***Action:*** ▸ Feasibility of the following draft plan will be explored and where possible implemented: <u>Primary School:</u> ○ **Pre year 2** a walking/scooter bus will be offered to pupils living in the local area. ○ **Years 3- 6** the option of changing to the cycle bus following a cycle proficiency and maintenance lesson will be made available. At the same time the curriculum will provide lessons on air quality. <u>Secondary School:</u> ○ **Years 7 – 11** a cycle to school scheme will be offered where bicycles will be made available at a discount. ○ **Years 9 – 11** in-depth scientific lessons on air quality will be part of the curriculum. ○ **Years 11 – 13** Car costs and pollution awareness lesson with suggestions of how to minimise both, possibly offering free bus travel. ▸ Awareness campaign for parents/guardians: ○ Active Travel ○ Low emission transport ○ Shared journeys ○ Anti-Idling ▸ School travel plans for staff and parents.

L - PUBLIC AWARENESS/INFORMATION

Change Fleet	Reduce Traffic
KPI – None	Funding: Medium - High
▸ Congestion is caused by all of us. Therefore, the public as a whole play a key part in transforming the fleet and talking up active travel. A frequent and sustained mode of communication to the media and wider public should be developed explaining the causes and solutions. This could be supported further with the engagement of local action groups to empower the community to implement local changes. Furthermore, any wider news such as regional health alerts from the Welsh Air Quality Forum / Health Agencies could be disseminated through the local communication routes.	***Action:*** ▸ Air Quality Awareness Week possibly in conjunction with active travel. ▸ Ensuring an Air Quality message supports sustainable transport and active travel initiatives. ▸ Website / Facebook / Social Media ▸ Local Air Quality Awareness Group(s).

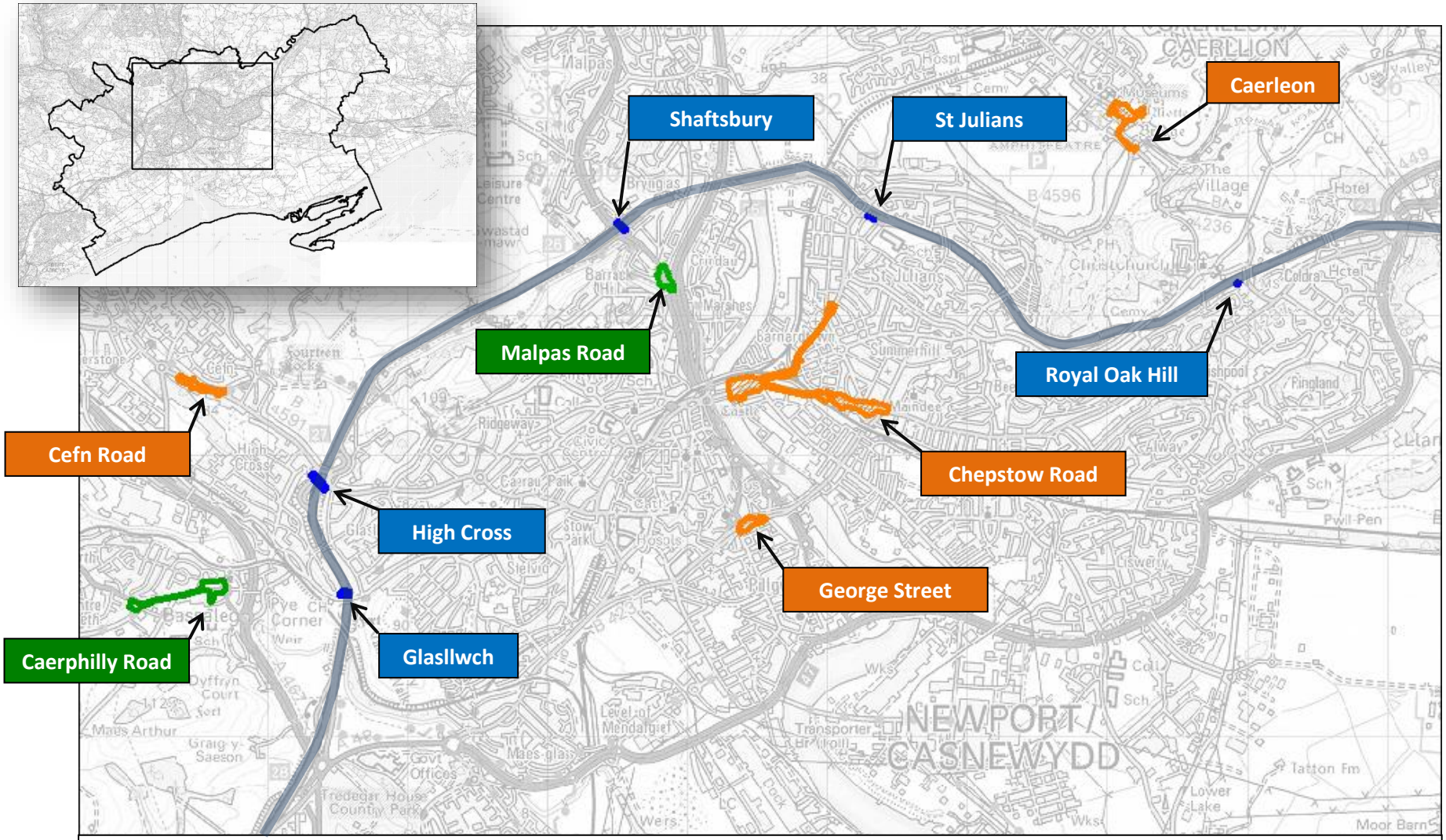
M - STREET / ROAD IMPROVEMENTS & ENFORCEMENT

Improve Flow	Reduce Traffic
KPI – None	Funding: Medium - Significant
▸ Street / Road improvements can reduce traffic congestion. However, these should be discouraged where they: ○ A – cause additional damage to air quality ○ B – disregard Active Travel completely ○ C – prioritise private vehicle use over public transport. Currently within the Newport district the Police enforce elements of parking restrictions. Unfortunately, this means the Council does not have the power to implement measures such as Low Emissions Zones. Any efforts by the Council decriminalise stationary road traffic offences will be supported as a matter of urgency. Once this has been implanted other enforcement tools can be explored. For example, red routes, which are a red version of double yellow lines that prevent vehicles stopping at any time and highlight the need to the drivers not to stop for any reason.	***Action:*** ▸ Road improvements will have regard to noise, air quality, active travel and public transport at all times. ▸ Decriminalization of stationary traffic offences to be brought under the remit of the council. ▸ Explore the feasibility of Red Routes and other enforcement tools. ▸ Encourage and support the implantation of green corridors.

N – Light Goods Vehicles / Deliveries

Change Fleet	Reduce Traffic
KPI – Fleet Composition (Where Possible)	Funding: High
▸ There has been an increase in light vehicle goods which is probably the result of the increase in internet shopping and home delivery. There are few actions that are considered possible to influence a change in vehicle fleet. However, it may be possible to focus actions upon the consumer rather than the delivery mechanism. For example, encourage the use of delivery lockers at key locations for pick up rather than at the home. This may reduce the number of vehicle trips to residential properties. Takeaway deliveries involve many short stop start journeys. Whilst these are likely to occur when the roads are quieter they still contribute a significant level of pollution.	***Action:*** ▸ Encourage the installation and use of delivery lockers at key locations. ▸ Encourage the use of low/zero emission vehicles for deliveries.

ACTION PLANS



Map of Newport's AQMAs (as of 2018)

This document is available in Welsh / Mae'r ddogfen hon ar gael yn Gymraeg

CITY – Action Plan

This plan outlines of what actions Newport City Council intends to focus to help reduce carbon dioxide emissions, air pollution and noise from our transport network. For the majority of the actions the detail on how they will be implemented will follow in the site specific plans.

A – PLANNING AND CONSTRUCTION

- Supplementary Planning Guidance for sustainable travel.
- Ensure that Construction and Environmental Management Plan(s) (CEMP) designed with good practice for construction sites are implemented with new developments.

B – CLEAN AIR ZONE (CAZ)

- Investigate the feasibility of a city wide Clean Air Zone and if appropriate implement.

C – HGV / LGV

- Implement a city wide Fuel Economy HGV/LGV partnership scheme.

D – TAXIS / ON STREET CAR HIRE

- Develop and implement a policy to encourage a low emission taxi fleet.
- Implement a city wide Fuel Economy Taxi partnership scheme.
- Encourage and support the installation of electric vehicle charging points at Taxi ranks.

E – BUSES & PUBLIC TRANSPORT

- Implement a city wide fuel economy bus fleet partnership scheme.
- Encourage and support the uptake of zero emission vehicles.
- Support and promote public transport.

F - COACHES

- Implement a city wide fuel economy scheme for coach operators.

G – PETROL & DIESEL CARS

- Where possible passively discourage the use of Petrol & Diesel vehicles promoting the use of less polluting forms of travel.

H - Hybrid / Electric
▸ Develop a city wide strategy for electric vehicle charging points at key locations and where appropriate install. ▸ Partnership work with major destinations to encourage the installation of electric vehicle charging points ▸ Encourage the installation of electric vehicle charging points through the planning process.
I – CYCLING & WALKING (ACTIVE TRAVEL)
▸ Continued development of the city's active travel network. ▸ Implementation of a city wide bike hire scheme.
J – PUBLIC BODIES (Best Practice)
▸ Work towards the Council becoming an example of best practical with regard to encouraging active travel and policies that encourage a reduction in vehicle trips / emissions. ▸ Encourage the Public Service Boards to implement similar changes in their respective organisations in line with Newport's Well Being Plan.
K - SCHOOLS
▸ Develop with key stakeholders a pilot scheme capturing all of the possible elements that could be targeted at schools to encourage zero emission forms of travel. Once proven successful expand to all schools in the district in a phased approach.
L - PUBLIC AWARENESS/INFORMATION
▸ Regular website updates ▸ Annual events around clean air day that include a public forum.

M - STREET / ROAD IMPROVEMENTS & ENFORCEMENT
▸ Ensure that new schemes do not cause additional air quality or noise impacts. ▸ Encourage schemes that are likely to significantly (or on balance) improve air quality and noise. ▸ Support measures that will encourage strict road traffic enforcement. ▸ Encourage and support green infrastructure across the city.
N – LIGHT GOODS VEHICLES / DELIVERY
▸ Investigate the feasibility of local distribution hubs across the district. ▸ Encourage the installation and use of delivery lockers at key locations where traffic will be drawn away from unnecessary repeat trips.

Local – Action Plan

Once the City Plan has been completed local plans that focus on the detail will be developed in consultation with the local community. The priority will be to develop plans for areas of existing poor air quality and the city centre.

A – PLANNING AND CONSTRUCTION
B – CLEAN AIR ZONE (CAZ)
C – HGV / LGV
D – TAXIS / ON STREET CAR HIRE
E – BUSES & PUBLIC TRANSPORT
F - COACHES
G – PETROL & DIESEL CARS
H - Hybrid / Electric
I – CYCLING & WALKING (ACTIVE TRAVEL)
J – PUBLIC BODIES (Best Practice)
K - SCHOOLS
L - PUBLIC AWARENESS/INFORMATION
M - STREET / ROAD IMPROVEMENTS & ENFORCEMENT
N – LIGHT GOOD VEHICLES / DELIVERY