Northamptonshire Highway Air Quality Strategy

Fit for Purpose

January 2013
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Northamptonshire Highway Air Quality Strategy

Contacts and Further Information

This is Northamptonshire County Council’s Highway Air Quality Strategy.

It sets out the overarching vision for Highway Air Quality within Northamptonshire and sets out our strategy to achieve it. This strategy is one of a series of thematic daughter documents to the Northamptonshire Transportation Plan that was adopted in April 2012.

Consultation on the first batch of the thematic strategies, including this Highway Air Quality Strategy, took place between 3rd September and 19th October 2012. A summary of the consultation responses can be found on our website at:


If you have any problems accessing Northamptonshire County Council’s website or do not have access to the internet, please contact us using the details below.

This strategy was approved and adopted by Northamptonshire County Council’s Cabinet in December 2012.

This strategy together with the other Batch 1 daughter documents and the Northamptonshire Transportation Plan itself can be viewed on the County Council’s website at:


Should you have any queries regarding this strategy, please contact the Transport Planning Team.

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1. Aim and Objectives of the Northamptonshire Transportation Plan

Transportation is not an end in itself. The movement of people and goods takes place not for its own sake, but to fulfill the diverse needs and desires of the public. Therefore the County Council’s transport policies are similarly promoted for their effect on other specific goals, priorities and objectives, rather than as an end in themselves.

**Northamptonshire Transportation Plan Vision:**

For Transport and Travel to contribute towards making Northamptonshire a great place to live and work, through creating tangible transport options to satisfy individual needs and to encourage more sustainable travel. The transport system will provide fast and efficient movement of people and goods, and will be accessible for all. Expanding networks and capacity of networks in Northamptonshire will be fully integrated into new developments and regeneration areas to support more sustainable communities.

Economic growth and prosperity is a top priority for Northamptonshire and connectivity has a vital role to play in encouraging businesses to locate to the area, and getting people to work and services such as education and health, as well as to leisure activities and for shopping. Improved technology and local accessibility will reduce the need to travel, whilst supporting economic growth, within a low carbon environment and Northamptonshire will become an exemplar for the latest developments in information technology, fuel technology, and new forms of transport.

The county council will work in partnership with all stakeholders and the wider community to deliver this transport vision and strategy.

This transportation plan needs to be both aspirational and realistic at the same time. Current economic climates mean that transport is certainly in a more austere time than in the last 15 to 20 years and this plan needs to reflect that but at the same time still plan for future growth.

**The overall aim for this Transportation Plan is:**

‘Northamptonshire Transportation - Fit for..... Purpose’

The aim ‘fit for purpose’ means creating a network that delivers exactly what Northamptonshire needs to be able to function plus what it needs to be able to grow, no more and no less.
This overarching aim can then be broken down into six objectives that have been chosen to guide this Transportation Plan. These objectives have been drawn up to reflect the issues which have been identified as locally important through consultation, while at the same time reflecting wider national and local policy context. These objectives have been deliberately chosen to reflect the main impacts that transport can have on the wider community, rather than being linked to particular schemes or measures. They form the basis upon which the policies and programmes contained in this Plan have been developed.

1. **Fit for the Future** – creating a transport system that supports and encourages growth and plans for the future impacts of growth, whilst successfully providing benefits for the County.

2. **Fit for the Community** – through the transport system help to maintain and create safe, successful, strong, cohesive and sustainable communities where people are actively involved in shaping the places where they live.

3. **Fit to Choose** – ensuring that the people of Northamptonshire have the information and the options available to them to be able to choose the best form of transport for each journey that they make.

4. **Fit for Economic Growth** – creating a transport system that supports economic growth, regeneration and a thriving local economy and successfully provides for population and business growth.

5. **Fit for the Environment** – to deliver a transport system that minimises and wherever possible reduces the effect of travel on the built, natural and historic environment.

6. **Fit for Best Value** - being clear about our priorities for investment and focusing on value for money by prioritising what we spend money on and how it can be beneficial for the county as a whole and search for alternative sources of funding.

The Northamptonshire Transportation Plan fits in with the Northamptonshire Arc, helps to deliver the Core Spatial Strategies in West and North Northamptonshire and supports the work of the Local Enterprise Partnerships.
Daughter Documents

This Strategy is the part of a series of documents which will eventually form the Northamptonshire Transportation Plan ‘suite of documents’. This suite of documents will include strategies or plans covering a range of transport themes and also detailed geographic strategies or plans for the Northamptonshire’s main towns.

Thematic strategies or plans that will be developed as daughter documents to the Northamptonshire Transportation Plan:

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<th>Thematic Strategies</th>
<th>Daughter Documents</th>
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<td><strong>Air Quality</strong></td>
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<td>Smart Travel Choices</td>
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<td>Kettering</td>
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<td>Transport Management</td>
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<td>Highways Improvement</td>
<td></td>
<td>Towcester</td>
</tr>
<tr>
<td>Development Management</td>
<td></td>
<td>Wellingborough</td>
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The Highway Air Quality Strategy

The following table shows how this Highway Air Quality Strategy ties in with the six over-arching Northamptonshire Transportation Plan objectives:

<table>
<thead>
<tr>
<th>Air Quality Strategy</th>
<th>Fit for..... the Future</th>
<th>Fit for..... the Community</th>
<th>Fit to..... Choose</th>
<th>Fit for..... Economic Growth</th>
<th>Fit for..... the Environment</th>
<th>Fit for..... Best Value</th>
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<tbody>
<tr>
<td>Tackling the air quality issues that would otherwise arise is an important part of accommodating future growth in the county.</td>
<td>Tackling the air quality issues that affect local communities.</td>
<td>Providing alternative journey options is an important part of the Air Quality Strategy.</td>
<td>Tackling congestion in Air Quality Management Areas is an important part of the Air Quality Strategy that will have benefits for economic growth.</td>
<td>Air Quality is a key environmental issue.</td>
<td>Funding for all schemes, including those intended to improve air quality will be prioritised in order to achieve best value for money.</td>
<td></td>
</tr>
</tbody>
</table>

The Highway Air Quality Strategy supports the Northamptonshire Arc Vision. It helps to deliver the environmental improvements that are part of the North Northamptonshire and West Northamptonshire Joint Core Strategies; and by improving the environment within the county can help the work of the Local Enterprise Partnerships. Improved air quality can also have advantages in terms of equalities and quality of life, particularly for young children, the elderly and those with pre-existing illnesses such as asthma, heart disease or other cardio-respiratory conditions.
2. Air Quality and Climate Change

Air quality has the potential to impact on human health and the environment. Poor air quality can be particularly harmful for the most vulnerable members of society such as young children, the elderly and those with pre-existing illnesses such as asthma, heart disease or other cardio-respiratory conditions. Exposure to poor air quality, particularly over a long period and at elevated concentrations, is believed to play a role in diseases such as asthma and cancer. Depending on the pollutant type, exposure to high levels over short time scales can lead to difficulties in breathing and acute symptoms such as wheezing, coughing, headache and nausea.

The sources that contribute to local air quality problems, e.g. emissions from road transport, are the same sources which are known to directly contribute to Carbon Dioxide emissions and climate change. Therefore, measures that we take to improve air quality locally can complement climate change measures and vice versa.

The provisions of Part IV of the Environment Act 1995 establish a national framework for air quality management, which requires all local authorities in England, Scotland and Wales to conduct local air quality reviews. Section 82(1) of the Act requires these reviews to include an assessment of the current air quality in the area and the predicted air quality in future years. Should the reviews indicate that the standards prescribed in the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendments) Regulation 2002 will not be met, the local authority is required to designate an Air Quality Management Area. Action must then be taken at a local level to ensure that air quality in the area improves. This process is known as ‘local air quality management’.

UK national policy also exists in terms of climate change and the emission of greenhouse gases. Following the Kyoto Protocol, the UK Government committed itself to reducing carbon dioxide emissions by 20% below 1990 levels by 2010, and to cut overall greenhouse gas emissions by 12.5% below 1990 levels by 2008 – 2012. The Government has now set a long term aim of reducing Carbon Dioxide levels by 80% by the year 2050. This Strategy and the wider proposals in the Northamptonshire Transportation Plan have a key role to play in meeting these targets.

There are seven key pollutants (plus Ozone, which is considered at a national level) considered in the UK Air Quality Strategy, each of which has a specific threshold of concentrations in the air to protect human health. All of these substances are present in the atmosphere at background levels. It is human activities that contribute to excess or elevated concentrations of these substances in quantities enough for them to become polluting.
The seven pollutants and the effects that excess levels can have on human health are outlined in Table 1:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Health Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Dioxide</td>
<td>Causes respiratory illness and possibly increase the risk of lung infections. Young children and asthma sufferers are the most sensitive groups at risk.</td>
</tr>
<tr>
<td>Sulphur Dioxide</td>
<td>It is an irritant and can cause a feeling of chest tightness and a narrowing of the airways. Those who suffer from asthma are more sensitive than other people. Can aggravate existing bronchitis.</td>
</tr>
<tr>
<td>Fine Particles – PM$_{10}$</td>
<td>Fine particles have been linked with a number of respiratory illnesses, including asthma. Of more concern is that long-term exposure to fine particles has been linked as a cause of premature death from heart and lung disease. Fine particles may also cause lung cancer, due to cancer forming compounds present in exhaust fumes attach themselves to the surface of particles, which may then be breathed into the lungs.</td>
</tr>
<tr>
<td>Ozone</td>
<td>Ozone is a toxic gas, which can cause damage and irritation to the lungs and airways. Damage is increased when taking exercise, although the effects are not permanent. Asthmatics are not thought to be more sensitive to ozone, although ozone may make people more sensitive to pollens and allergens.</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>This pollutant can deprive the blood of oxygen and cause headaches, dizziness, and nausea, and at very high levels, death. Elderly people, pregnant women, young children and people suffering from heart and lung disease are more sensitive to carbon monoxide.</td>
</tr>
<tr>
<td>1,3 Butadiene Benzene</td>
<td>Some Volatile Organic Compounds, such as Benzene and 1, 3 Butadiene, are either known or thought to cause cancer.</td>
</tr>
<tr>
<td>Lead</td>
<td>Children are the most sensitive to lead poisoning.</td>
</tr>
</tbody>
</table>

Table 1: The Key Air Pollutants and their effects on health

This detailed air quality strategy will outline our methods for reducing the emissions from road vehicles that can cause air quality problems in Northamptonshire by increasing modal shift, improving network management and working in partnership with the borough and district councils.
3. Air Quality Policies

- **Policy 1**
  - Air Quality Management

- **Policy 2**
  - Air Quality and Modal Shift
    - Cycling
    - Marketing
    - Public Transport
    - Travel Planning
    - Travel Centres
    - Low Emission Vehicles

- **Policy 3**
  - Air Quality and Network Management
    - Car Sharing
    - Low Emission Vehicles

- **Policy 4**
  - Car Sharing
  - Low Emission Vehicles

- **Policy 5**
  - Congestion

- **Policy 6**
  - Buses

- **Policy 7**
  - Partnership Working

- **Policy 8**
  - Partnership Working

Northamptonshire Highway Air Quality Strategy
4. Air Quality Management in Northamptonshire

There are currently (in December 2012) eight areas in Northamptonshire that have been declared as Air Quality Management Areas as a result of excess levels of Nitrogen Dioxide. In all of them the most important source of Nitrogen Dioxide is emissions from road vehicles. The declared areas are:

- **The M1 corridor** - between Junctions 15 and 16;
- **Victoria Promenade**, Northampton - a number of properties along Bridge Street, Victoria Promenade and Victoria Gardens;
- **St James**, Northampton - a number of properties along St James Road, Weedon Road, Harlestone Road and adjoining streets;
- **Harborough Road**, Northampton - roads and properties fronting parts of Kingsthorpe Grove, Harborough Road, Cranford Terrace, Alexandra Terrace and Boughton Green Road;
- **A45 London Road**, Northampton - a number of properties overlooking the northbound and southbound carriageways of the A45, extending from Woodland Road to the Queen Eleanor interchange;
- **Campbell Square**, Northampton - a number of properties located at the junction of Grafton Street, Campbell Street, Regent Square and Barrack Road;
- **St Michael's Road**, Northampton - all properties fronting St Michael's Road; and
- **A5 Watling Street**, through Towcester town centre.

Plans of all of the Air Quality Management Areas can be seen in Appendices 2 and 3.

The M1, the A5 and the affected part of the A45 are Highways Agency roads, so there are a total of five Air Quality Management Areas on Northamptonshire County Council roads.

**Air Quality in Northampton Improving**

A revocation order was issued by Northampton Borough Council for four Air Quality Management Areas in Northampton in April 2012. The Air Quality Management Areas that are being revoked are located at Barrack Road, Park Avenue North, A43 Lumbertubs Way and A45 Nene Valley Way. Levels of Nitrogen Dioxide at these locations are now within acceptable limits.
5. Aim, Objectives and a Strategy Approach

Aim
The aim of this Highways Air Quality Strategy is to reduce the number of transport-related Air Quality Management Areas on Northamptonshire County Council roads to zero and maintain that position.

Objectives
The Northamptonshire Transportation Plan and the Action Plans that have been produced by district and borough councils for the local Air Quality Management Areas have been used to produce the overarching objectives for this Highway Air Quality Strategy.

Fit for...the Future
Objective 1: To support and encourage growth in Northamptonshire by tackling the air quality issues that could otherwise be the result of increased demand for travel.

Fit for...the Community
Objective 2: To ensure that air quality policy meets the needs of local communities, particularly those located in declared Air Quality Management Areas, and reduce the impact that emissions from vehicles on our highways has on human health.

Fit to...Choose
Objective 3: To sit alongside the other strategies in the Northamptonshire Transportation Plan that will increase the attractiveness of low emission alternatives to private car journeys. This will reduce the number of vehicles on our highway network and reduce the impact of vehicle emissions on the air quality.

Fit for...Economic Growth
Objective 4: To sit alongside other strategies in the Northamptonshire Transportation Plan that aim to reduce congestion in Northamptonshire. Reducing congestion benefits air quality by reducing the time that vehicles spend waiting at junctions. It benefits the economy by reducing the time lost to businesses as vehicles wait in traffic.

Fit for...the Environment
Objective 5: To improve the local environment by reducing emissions from vehicles and improving air quality.

Fit for...Best Value
Objective 6: To outline a clear prioritisation for spending on schemes that will improve air quality.
A Strategy Approach

This Highways Air Quality Strategy does not sit in isolation as air quality problems cannot be tackled without considering network management and modal shift. This strategy, therefore, has strong links to the Highway Management Strategy and the Northamptonshire Transportation Plan strategies that seek to increase modal shift by increasing the attractiveness of alternatives to the private car, including the walking, cycling, and bus, rail, and Smarter Travel Choices strategies.

The other important part of this Highway Air Quality strategy is more effective partnership working with stakeholders including district and borough councils to seek a joined up approach to improving air quality in the county.

The Highway Air Quality Strategy needs to address:

**Air Quality and Modal Shift**
- Set out the key principals of modal shift and consider the methods that can be used to encourage people to walk, cycle, use public transport or use other alternative transport modes instead of using their cars.

**Resources and Monitoring**
- The funding that is available for schemes to improve air quality and monitoring of the results.

**Air Quality and Network Management**
- Consider ways of reducing congestion in urban areas and ways of increasing bus priority in order to reduce the amount of time that vehicles spend waiting at junctions.

**Effective Partnership Working**
- Set out how we can work more closely with district and borough councils to tackle air quality problems in Northamptonshire.

**Air Quality Policy 1:**
We will seek to reduce the impact of vehicle emissions and improve air quality in Northamptonshire by encouraging modal shift, by managing congestion on our road network and through effective partnership working.
6. Air Quality and Modal Shift

The population and housing growth that is proposed in Northamptonshire will lead to an increased demand for travel. To accommodate this demand, strategies need to be in place to improve the attractiveness of alternatives to the private car and encourage the shift to more sustainable transport modes. There are many benefits for the county of promoting modal shift, including reducing congestion and improving health. Reducing car usage will reduce the emissions of nitrogen dioxide from road traffic so modal shift is a vital part of this Air Quality Strategy.

**Air Quality Policy 2**

We will aim to reduce the vehicle emissions that have a damaging effect on air quality by increasing the attractiveness of low-polluting alternatives to the private car and encouraging modal shift.

The Northamptonshire Transportation Plan sets two targets for modal shift, based on 2001 Census journey to work data, to achieve by 2031:

- A reduction of 5% in single occupancy car journeys to work from the existing built up areas of the towns
- A reduction of 20% in single occupancy car journeys to work from new developments

The Bus, Cycling, Rail, Smarter Travel Choices and Walking Strategies that form part of the Northamptonshire Transportation Plan set out in detail how we will improve and promote alternatives to private car journeys in order to achieve the above targets. Brief consideration is given below to how modal shift can be encouraged in order to improve air quality.

6.1 Marketing and Information

Communications are absolutely key to any successful modal shift initiative, both in terms of winning support for the initial proposals and for maximising take up once implemented. Good branding will help improve public recognition and give coherence to the overall package so should be an early consideration in scheme development.

It is imperative to have a marketing and information strategy aimed at fostering positive images and raising awareness of sustainable transport services, in order to promote alternatives to the private car; thereby reducing emissions from road traffic.

To help encourage Modal Shift we have included a Marketing and Promotions Toolkit in our Smarter Travel Choices Strategy:
Marketing and Promotions Toolkit

- Increasing the range, quality and availability of public transport information
- Foster closer links with the Primary Care Trust, education and leisure and tourism to encourage joint working and the promotion of joint initiatives
- Continuing the on-going excellent partnerships with the bus and rail operators
- Fostering and developing partnerships with Parish Councils and Boroughs to address local transport needs
- Promoting existing services in both rural and urban areas
- Work to secure funding for marketing new and existing transport solutions
- Develop specific marketing and information for businesses
- Consulting with users and non-users in order to understand their needs
- Promote the development of Travel Plans
- Producing high quality publications and innovative solutions to encourage the adoption of sustainable transport modes
- Encouraging the development and use of web-based information
- Host Competitions and Road shows to spread the message

6.2 Walking

Walking is the second biggest mode of transport in the county, behind the use of the car, as such it needs to have a heightened profile to secure and deliver infrastructure improvements that meet the needs of current and potential pedestrians in Northamptonshire. The Walking Strategy details our approach to getting more people walking in the county.

Unattractive walking environments will be improved by upgrading pedestrian access to services, education, employment sites and transport interchanges. Where possible, underpasses will be avoided on walking routes in favour of surface level crossings.

We will improve perceptions of safety amongst pedestrians through the provision of information to individuals and communities promoting personal awareness and by ensuring that attractive public realm and walking infrastructure is included in new developments.

We will improve the quality of information available to pedestrians through signage, route maps and marketing of routes that are not obvious to drivers.
### 6.3 Cycling

Cycling is an inexpensive and environmentally sustainable form of transport and recreation and has many benefits to people’s health, the environment, the economy and the local community. Cycling is already the third most popular recreational activity in the UK with an estimated 3.1 million people already riding a bicycle each month. The Cycling Strategy explains how we will make cycling a more attractive option for those people already cycling and for potential new cyclists.

#### The Hierarchy of Provision for Cycling Infrastructure

<table>
<thead>
<tr>
<th>Consider First</th>
<th>Consider Last</th>
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<tbody>
<tr>
<td>1. Traffic Volume Reduction</td>
<td>6. Conversion of Footways to Shared Use for Pedestrians and Cyclists</td>
</tr>
<tr>
<td>2. Traffic Speed Reduction</td>
<td></td>
</tr>
<tr>
<td>3. Junction or Hazard Site Treatment, Traffic Management</td>
<td></td>
</tr>
<tr>
<td>4. Reallocation of Carriageway Space</td>
<td></td>
</tr>
<tr>
<td>5. Cycle Tracks Away from Roads</td>
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</table>

Our strategy for encouraging more people to cycle includes:

- Improving signage to show directions and cycling times to a destination
- Providing adequate parking facilities at trip attractors and transport interchanges
- Promoting the benefits of cycling and outlining potential incentives
- Educating cyclists
- Increasing safety through training and Safer Routes to School schemes

### 6.4 Public Transport

Increasing the use of public transport is an issue that has been highlighted in the Air Quality Action Plans produced for the Air Quality Management Areas on the county roads. There are a number of factors that can influence modal shift when it comes to using public transport as a tangible alternative to the private car.
Public transport needs to be made more attractive if it is to provide a viable alternative to car travel. Our Bus Strategy sets a target of raising the number of bus passengers by 50% by 2026-31 and outlines our proposals for meeting that target.

Our proposals for making public transport more attractive include:

- Making comprehensive public transport information available through different media, including our website, printed leaflets, maps, bus stop publicity and Traveline.
- Improving access to real time information, including live display boards at stops, text-services and an easy to use website.
- Increasing use of smart and integrated ticketing which can increase flexibility for users, reduce the need to queue, and offer incentives for increased use through loyalty points.
- Improving bus stop infrastructure on heavily used urban routes and providing each village in Northamptonshire with at least one marked bus stop.

**Northamptonshire Arc Transit**

Light rail, trams and other rapid transit systems can play a significant role in making public transport a more attractive option. A Rapid Transit system covering the Northamptonshire Arc area would be good for passengers, good for the local economy and be an effective and efficient means of moving large numbers of people in urban areas.

Looking to the future, we are committed to investigating a rapid transit network for the Northamptonshire Arc. This will provide next-generation services on the core urban and inter-urban routes, link the main towns, and provide access to town centres and major trip generators such as hospitals, universities and colleges and business parks. This is essential to achieve a transformation and major step-change in the use of public transport and by doing so, reduce the twin challenges of managing predicted traffic growth to avoid major congestion and reducing emissions.

Anticipated features of the Northamptonshire Arc Transit network are:

- Rapid links between existing urban areas and planned growth areas
- Modern high capacity, low emission vehicles
- High levels of journey time reliability
- High quality real time information
- Multi-modal integrated ticketing
6.5 Travel Planning

Travel Planning should be at the heart of the sustainable travel approach and be a key part of any package of measures designed to encourage modal shift. Travel Plans are produced by developers and organisations to set out how they will influence mode of travel to create modal shift away from single occupancy car journeys. Common methods of Travel Plans include Work Place Travel Plans, School Travel Plans and Personal Travel Plans:

**Workplace Travel Plans**

The vast majority of journeys to work are made by car and 37% of transport related emissions come from the journey to work, and travelling as part of work. Business is therefore a key area to tackle in terms of carbon reduction and nitrogen dioxide emissions. Workplace travel plans typically combine measures to support walking, cycling, public transport and car sharing. These are reinforced with promotion and incentives and by the management of workplace parking. A good workplace travel plan can reduce the number of people driving to work by 15%, equivalent to about 1 million fewer miles per year for a business of 2000 staff. Workplace Travel Plans can benefit the business, employees and the wider community:

<table>
<thead>
<tr>
<th>Business</th>
<th>Employees</th>
<th>Community</th>
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</thead>
<tbody>
<tr>
<td>Reduced parking requirements</td>
<td>Health improvements</td>
<td>Improved air quality</td>
</tr>
<tr>
<td>Reduced travel costs</td>
<td>Less time travelling to work</td>
<td>Reduced congestion</td>
</tr>
</tbody>
</table>

Our Smarter Travel Choices Strategy outlines our commitment to working with local businesses to develop and implement Workplace Travel Plans in order to reduce the number of single-occupancy car journeys to work. We will work with the planning guidance set out for the use of Commercial Travel Plans.

**School Travel Plans**

None of the Local Education Authority maintained schools in Northamptonshire are situated inside Air Quality Management Areas, but schools attract a large number of car journeys. Many of these journeys will travel through or near an Air Quality Management Area, contributing to the nitrogen dioxide emissions at the site.

School Travel Plans encourage schools to use their own resources to introduce measures to assist cycling and walking and the promotion of safety on the journey to school. Schools are responsible
for managing their own Travel Plans and we will introduce Safer Routes to School infrastructure schemes to complement Travel Plan measures.

**Personalised Travel Planning**

Personal travel planning delivers information, incentives and motivation to individuals to help them voluntarily make sustainable travel choices. Within the UK, Personalised Travel Planning has been reported to reduce car trips by 11% and distance travelled by car by 12% amongst the population targeted.

Publicity and information will be made available to residents through the county council website and other sources, such as Travel Centres, in order to help people make informed decisions about using sustainable travel modes and producing fewer air pollutants.

**6.6 Travel Centres**

The significant lifestyle changes associated with moving to a new area mean that it is far easier to achieve modal shift from new developments than it is from existing housing areas. Travel Centres serving large new housing developments will be an important tool in helping us achieve modal shift targets set out in the travel plans for the development. They will help and encourage new residents to travel by more sustainable transport modes through methods such as:

- producing welcome packs for residents,
- dissemination of travel information,
- supporting walking and cycling initiatives and
- implementing car sharing schemes.

Travel centres aim to help residents, employees and visitors of new and existing developments utilise sustainable modes of transport in their daily travel needs whether it be for the daily commute to work, a trip to the local shops or to a major football match. They save time and money by providing people with a variety of information and other services and facilities that will encourage them to leave the car at home and to lead a more sustainable lifestyle. The benefits of Travel Centres, including improvements to air quality, are shown in Figure 1 on the following page.
6.7 Car Sharing and Car Clubs

The Smarter Travel Choices strategy sets out our commitment to promoting car clubs and car-sharing in order to encourage sustainable car use within new developments and for businesses within Northamptonshire.

Car sharing is when two or more people travel by car together, usually to the same destination for all or part of the trip, either as part of an organised scheme or on an ad hoc basis. The best developed schemes are targeted at the daily commute. Such schemes may operate within a single company or across a number of different employers in the same area.

Car Clubs allow people to book a timeslot to use a pool car for anything from 30 minutes to a weekend; bookings can be made in advance or with only a few minutes notice. Car Clubs offer the opportunity for people to not own their own car or maybe forego a second car for their family because they can hire the car for the journeys when a car is needed.
6.8 Low-Emission Vehicles

The use of alternative fuels, such as electricity, can help to significantly reduce emissions from transport, and in the case of electricity, help alleviate air quality problems. An electric car powered from today’s grid could emit between 15% and 40% less carbon over its lifetime than a comparative sized petrol car. This will improve as the electricity generating sector moves towards alternative energy sources. Car manufacturers have already spent billions of pounds developing alternative power sources and more efficient vehicles. The Government is providing £43m to fund £5,000 discounts on the price of electric vehicles through the Plugged-in-Places scheme. This provides match-funding to roll-out electric vehicle recharging infrastructure at selected places across the country.

Northamptonshire is part of the Plugged in Places scheme. The County Council is working with Cenex (who manage the scheme), private businesses, developers, local partners and residents to install charging points at key locations.

**Air Quality Policy 3**

We will continue to be part of the Plugged in Places scheme and will work with partners and residents to install charging points at key locations.

There are wider economic benefits for the county to being at the forefront of the development of low emission vehicles. Northamptonshire, with its expertise in high performance engineering and the presence of Silverstone Circuit and Rockingham Raceway, which can act as proving grounds, is the ideal place to develop, test and manufacture low emission vehicle technologies. In September 2011 Rockingham hosted the annual Low Carbon Vehicle event which showcased the capabilities of the country’s technology providers and provided a global platform for collaborative opportunities.

The Connecting Northamptonshire document that forms part of our Northamptonshire Arc Concept commits us to considering the introduction of low emission zones where air quality and carbon emissions are a concern for local communities.

**Air Quality Policy 4**

Where air quality and carbon emissions is a problem and a major concern for local communities, the County Council will consider the introduction of low emission zones to encourage the use of cleaner vehicles, limit access to certain vehicle types or reduce the number of vehicles overall.

Consultation with local residents and businesses should be undertaken before any Low Emission Zones are introduced and careful consideration should be given to the types of vehicles that are permitted into the zone. Local bus operators should be encouraged to use low emission or alternatively fuelled buses on services operating in any Low Emission Zone.
7. Air Quality and Network Management

The most significant contributors to local Nitrogen Dioxide levels in Air Quality Management Areas in Northamptonshire are as a result of road transportation. Where traffic congestion occurs on Northamptonshire’s roads this can lead to increases in local Nitrogen Dioxide concentrations due to the stop-start nature and low speeds that traffic will encounter at that location. Tackling congestion through network management, therefore, is an important part of the Air Quality Strategy.

The Highway Management Strategy sets out in detail our strategy for managing our road network and tackling congestion. It was introduced as a result of the Traffic Management Act 2004, which is intended to provide the basis for better conditions for all road users through the proactive management of the national and local road network. Part 2 of the Act places a network management duty on local authorities to keep traffic flowing; take account of their duties and responsibilities and to co-operate with other authorities to the same end.

7.1 Addressing Congestion on the Inter Urban Road Network

The car is the mode people most frequently choose for all but the shortest trips in Northamptonshire. This is mainly because of its freedom and flexibility. For this reason we are committed to making car travel more sustainable, managing traffic better, promoting opportunities for ultra-low emission vehicles and addressing ‘infrastructure gaps’ in the road network. However, it is important that any highway improvements are designed as part of an overall package aimed at reducing traffic numbers overall and reducing emissions.

The way roads are managed is critical to how they are used and tackling congestion. Northamptonshire’s inter-urban roads have experienced up to twice the national traffic growth rate in recent years. In and around Northampton and on parts of the strategic network congestion is particularly acute and is already having a negative impact on economic performance and quality of life. As road traffic grows, congestion will become more of an issue and will increasingly impact on other towns.
The impact of housing and commercial development on the road network means that it is important that new development contributes financially to new infrastructure. Investment will be targeted to have the maximum impact in terms of improving mobility and accessibility, supporting growth and lowering emissions from transport.

### 7.2 Addressing Congestion in Urban Areas

The majority of Air Quality Management Areas in the county are located in urban areas where there is little potential for new roads to reduce congestion. Any new roads which come forward will primarily link new developments to the existing network. These roads are likely to be specifically related to, and funded by, new developments.

**Air Quality Policy 5**

We will work to reduce vehicle emissions on our urban roads by tackling congestion through network management.

The Highway Management Strategy contains our Congestion Strategy. It focuses on four key principles:

- improving management of the existing highway network to optimise the utilisation of the existing capacity
- providing high quality alternatives to car travel
- putting measures in place to manage demand for private vehicles
- where necessary accommodating the remaining traffic on high quality roads.

A key element of the Congestion Strategy is using technological advances to improve the utilisation of the council’s traffic control systems to minimise delays to traffic on the existing road network.

Our traffic control system, known as NetCoM, is a state-of-the-art Urban Traffic Control platform capable of implementing both fixed time and SCOOT strategies, and hosts a new remote monitoring system that can also implement fixed time strategies.

SCOOT (Split-Cycle Offset Optimisation Technique) is a method of altering signal timings in response to the real-time situation for traffic on street.
NetCoM manages 122 traffic signalled junctions and 247 pedestrian crossings including fault management, and it allows for the implementation of strategies and plans to deal with accidents, incidents and congestion. It also responds to public enquiries related to traffic signals and provides a traffic control fault and operational centre.

The benefits of NetCoM are traffic signals running effectively and efficiently, minimising the effects of incidents on network congestion, improved journey time reliability and it provides information to outside and inside sources. Therefore this system will help us to monitor and manage the road network.

NetCoM can be used to reduce emissions from vehicles in and around Air Quality Management Areas by improving traffic flow.

### 7.3 Bus Priority

Netcom technology can be used to give buses priority through traffic signal controlled junctions, thereby reducing journey times over other traffic. This facility will help improve air quality by encouraging modal shift and reducing the emissions from idling buses.

The Bus Strategy sets out our policy on bus priority. When considering the provision of bus priority measures it is necessary to consider the current and future problems being tackled. Air quality should be one of the problems that is considered.
7.4 Bus Fuel Sources

Source Apportionment work carried out by Northampton Borough Council shows that buses are the second highest contributor of NO\textsubscript{x} emissions at the Bridge Street/Victoria Promenade junction in Victoria Promenade Air Quality Management Area. This is shown in Table 3.

<table>
<thead>
<tr>
<th>Transport Mode</th>
<th>Car</th>
<th>LGV</th>
<th>Rigid HGV</th>
<th>Arctic HGV</th>
<th>Buses</th>
<th>Motorcycles</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Apportionment (%)</td>
<td>40.5</td>
<td>11.1</td>
<td>20.5</td>
<td>6.8</td>
<td>20.9</td>
<td>0.19</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3: NO\textsubscript{x} Contribution Summary, Bridge Street, Northampton

Alternative fuel sources that will be more widely available for buses in the future include diesel/electric hybrid, electric, and fuel derived from anaerobic digestion. Emissions from buses powered by these fuel sources are considerably less than those from ageing diesel buses.

Air Quality Policy 6

We will work with local operators and Government to seek the introduction of buses fuelled by alternative fuel sources in Northamptonshire.
8. Effective Partnership Working

Part IV of the Environment Act 1995 requires that, in two tier counties such as Northamptonshire, district and borough councils regularly review and assess the current and likely future air quality in their areas against objectives set in the National Air Quality Strategy.

There are seven district/borough councils in Northamptonshire, two of which have Air Quality Management Areas declared within their boundaries:

- Corby Borough
- Daventry District
- East Northamptonshire
- Kettering Borough
- Northampton Borough (which has seven Air Quality Management Areas declared)
- South Northamptonshire (which has declared one Air Quality Management Area) and
- Borough of Wellingborough

When the assessment of air quality shows that the national objectives are unlikely to be met, the district or borough council is required to designate an Air Quality Management Area at the relevant location. The authority is then required to prepare an action plan that sets out those measures it intends to take in pursuit of the air quality objectives within the area covered by the Air Quality Management Area.

The Air Quality Action Plans that have been produced by Northampton Borough Council and South Northamptonshire Council all show that road traffic is the most important contributor of air pollutants and contain actions that require changes to transport in and around the affected areas. As the highway authority for the county Northamptonshire County Council is required, under Part IV of the Environment Act 1995, to advise on transport actions that can be included in action plans and implement any appropriate schemes. It is, therefore, important that we work closely with the district and borough councils to utilise their knowledge of air quality and the county council’s transport expertise in order to improve air quality in the county.

The development of Air Quality Action Plans is an important process in improving air quality and reducing the number of Air Quality Management Areas in the county. Northamptonshire County Council has been a consultee when these documents have been written, but it is important that we should take a more active role in the development and implementation of these in the future by working more closely with our partners.

Air Quality Policy 7
We will work more closely with the district and borough councils to improve air quality in the county and reduce the number of Air Quality Management Areas.
The County Council playing a more active role will allow this Air Quality Strategy, and other strategies in the suite of documents that make up the Northamptonshire Transportation Plan, to be used to ensure that any transport actions included in Air Quality Action Plans are realistic, achievable and in line with Northamptonshire County Council strategies.

However, the long-term success of any strategy or action plans that are intended to improve air quality in Northamptonshire will be dependant on how much consideration is given to air quality issues when plans are being made about the growth and development of our towns. It is important that we work with partners including district and borough councils, the Highways Agency and land developers, to ensure that air quality is considered in the early stages of any proposals and that new development does not have a detrimental impact on air quality.

**Air Quality Policy 8**
We will work with our partners and stakeholders to increase the importance that is placed on air quality management when new developments are planned.

If a proposed development is expected to have a detrimental effect on air quality at a location then funding should be sought from the developer to mitigate the problem.

An effective partnership approach to tackling air quality problems in Northamptonshire will mean that we are able to use the expertise from all of our partners when seeking and gaining best value from external funding sources for schemes that could benefit air quality.
9. Delivering the Strategy

The previous section outlines the policies of the overarching highways air quality strategy. The table below demonstrates how these policies contribute to the objectives of the Northamptonshire Transportation Plan.

<table>
<thead>
<tr>
<th>NTP Objectives</th>
<th>Highway Air Quality Objectives</th>
<th>Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit for...the Future</td>
<td>Objective 1</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td></td>
<td>To support and encourage growth in Northamptonshire by tackling the air quality issues that could otherwise be the result of increased demand for travel.</td>
<td></td>
</tr>
<tr>
<td>Fit for...the Community</td>
<td>Objective 2</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td></td>
<td>To ensure that air quality policy meets the needs of local communities, particularly those located in declared Air Quality Management Areas, and reduce the impact that emissions from vehicles on our highways has on human health.</td>
<td></td>
</tr>
<tr>
<td>Fit to...Choose</td>
<td>Objective 3</td>
<td>1, 2, 3, 5</td>
</tr>
<tr>
<td></td>
<td>To sit alongside the other strategies in the Northamptonshire Transportation Plan that will increase the attractiveness of alternatives to private car journeys This will reduce the number of vehicles on our highway network and reduce the impact of vehicle emissions on the air quality.</td>
<td></td>
</tr>
<tr>
<td>Fit for...Economic Growth</td>
<td>Objective 4</td>
<td>1, 4</td>
</tr>
<tr>
<td></td>
<td>To sit alongside other strategies in the Northamptonshire Transportation Plan that aim to reduce congestion in Northamptonshire in order to encourage economic growth. This will be beneficial for air quality by improving the times that vehicles spend waiting at junctions.</td>
<td></td>
</tr>
<tr>
<td>Fit for...the Environment</td>
<td>Objective 5</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td></td>
<td>To improve the local environment by reducing emissions from vehicles and improving air quality.</td>
<td></td>
</tr>
<tr>
<td>Fit for...Best Value</td>
<td>Objective 6</td>
<td>1, 2, 4, 6, 7, 8</td>
</tr>
<tr>
<td></td>
<td>To outline a clear prioritisation for spending on schemes that will improve air quality.</td>
<td></td>
</tr>
</tbody>
</table>
Scheme Funding

The cost of implementing schemes that reduce emissions from vehicles and improve air quality can be high. For example, setting up the infrastructure for electric vehicle charging would initially have a high cost and small benefit, but as more people are encouraged to switch to electric vehicles the benefit would increase.

At the present time there is a need to be realistic about the schemes that can be undertaken, meaning that schemes that improve air quality in Northamptonshire are more likely to be delivered as part of modal shift or network management measures.

Funding for schemes to improve air quality could come from a number of different sources:

- The Integrated Transport Block (Northamptonshire Transportation Plan)
- Central government grants
- Section 106 Agreement contributions from developers
- Developer led Infrastructure delivery secured through Section 278 agreements
- Localism
- Match funding from the public sector
- New sources of grant funding from public bodies
- Community Infrastructure Levy
- Partnership with commercial operators

Reductions to the Integrated Transport Block mean that there will be less funding available for all transport schemes including those that will improve air quality. The Northamptonshire Arc, Local Enterprise Partnerships, and Regional Growth Fund could all offer real opportunities for the Council to take forward projects over the next few years, as could grant funding from other sources such as Department for Environment Food and Rural Affairs.

With a series of independent funding sources, a coherent strategy is required to achieve the most equitable and efficient use of limited resources. One example of delivering best value is by joining smaller schemes together to gain economies of scale in terms of design and implementation.

With an increased pressure on resources, a clear method for prioritisation of schemes to be implemented is required. Prioritisation should be given to schemes that directly improve air quality or that encourage modal shift and reduce congestion within and close to Air Quality Management Areas.
The following general prioritisation for schemes may be useful in determining between schemes:

1) Schemes in Declared Air Quality Management Areas
2) New developments
3) Town centre
4) Intra-urban links
5) Inter-urban

Scheme Delivery

This strategy will be delivered through county-wide initiatives and a policy framework that secures the importance of tackling air quality at a county and local level.

The majority of the strategy will be delivered through other documents that make up the Northamptonshire Transportation Plan, including the Highway Management Strategy, Bus Strategy, Cycling Strategy, Smarter Travel Choices Strategy and Walking Strategy along with the town strategies for towns where Air Quality Management Areas are declared. At this time those are Northampton and Towcester

The key strategy action points and delivery timeframes are outlined below.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action</th>
<th>Countywide/Local</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality and Modal Shift</strong></td>
<td>Use the Marketing and Information Action Plan and other methods that are included in the Smarter Travel Choices Strategy, such as Travel Centres and Travel Planning, to raise awareness of sustainable travel services</td>
<td>Countywide</td>
<td>Strategy adopted in 2012</td>
</tr>
<tr>
<td></td>
<td>Use the actions and techniques set out in the Walking Strategy to encourage more people to walk</td>
<td>Countywide</td>
<td>Strategy adopted in 2012</td>
</tr>
<tr>
<td></td>
<td>Use the methodologies set out in the Cycling Strategy to encourage more people to cycle</td>
<td>Countywide</td>
<td>Strategy adopted in 2012</td>
</tr>
<tr>
<td></td>
<td>Use the Bus and Rail Strategies to make public transport a more attractive alternative to the private car</td>
<td>Countywide</td>
<td>Strategy adopted in 2012</td>
</tr>
<tr>
<td></td>
<td>Encourage the use of low emission vehicles in order to reduce the emissions from transport.</td>
<td>Countywide</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Strategy</td>
<td>Action</td>
<td>Countywide/Local</td>
<td>Time frame</td>
</tr>
<tr>
<td>--------------------------------------</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Air Quality and Congestion Management</strong></td>
<td>Use the strategies and methodologies set out in the Highway Network Management Strategy to reduce congestion on our urban road network</td>
<td>Local, particularly close to AQMAs</td>
<td>Strategy adopted in 2012</td>
</tr>
<tr>
<td></td>
<td>Reduce the effects of congestion on bus services through bus priority measures and the auditing of transport schemes</td>
<td>Local, particularly close to AQMAs</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Work with partners to exploit opportunities to introduce hybrid buses operating in Air Quality Management Areas</td>
<td>Local, particularly close to AQMAs</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Effective Partnership Working</strong></td>
<td>Take a more active role in the development and implementation of the Air Quality Action Plans developed by borough and district councils</td>
<td>Countywide</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>Increase the importance that is given to air quality issues when new developments are planned.</td>
<td>Countywide</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

**Monitoring**

In Northamptonshire air quality is monitored by the district and borough councils as part of their responsibilities under the Environment Act 1995.

We have set a target of reducing the number of transport-related Air Quality Management Areas on Northamptonshire County Council’s highway network to zero and maintaining that position.

We will use the monitoring data collected by the relevant Environmental Health authorities to monitor progress against that target and assess which of the actions that we have undertaken have been most effective in tackling air quality problems.
10. Appendices

Appendix 1: Summary of Policies:

<table>
<thead>
<tr>
<th>Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of this Highways Air Quality Strategy is to reduce the number of transport-related Air Quality Management Areas in Northamptonshire to zero and maintain that position.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will seek to reduce the impact of vehicle emissions and improve air quality in Northamptonshire by encouraging modal shift, by managing congestion on our road network and through effective partnership working.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will aim to reduce the vehicle emissions that have a damaging effect on air quality by increasing the attractiveness of low-polluting alternatives to the private car and encouraging modal shift.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will continue to be part of the Plugged in Places scheme and will work with partners and residents to install charging points at key locations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where air quality and carbon emissions is a problem and a major concern for local communities, the County Council will consider the introduction of low emission zones to encourage the use of cleaner vehicles, limit access to certain vehicle types or reduce the number of vehicles overall.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will work to reduce vehicle emissions on our urban roads by tackling congestion through network management.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will work with local operators and Government to seek the introduction of buses fuelled by alternative fuel sources in Northamptonshire.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will work more closely with the district and borough councils to improve air quality in the county and reduce the number of Air Quality Management Areas.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Quality Policy 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>We will work with our partners and stakeholders to increase the importance that is placed on air quality management when new developments are planned.</td>
</tr>
</tbody>
</table>

If a proposed development is expected to have a detrimental effect on air quality at a location then funding should be sought from the developer to mitigate the problem.
Appendix 2

Plans of Air Quality Management Areas in Northampton Borough
Taken from 2009 Air Quality Updating and Screening Assessment for Northampton Borough Council.

M1 Air Quality Management Area
Victoria Promenade Air Quality Management Area
St. James Air Quality Management Area
Harborough Road Air Quality Management Area
London Road Air Quality Management Area
Campbell Square Air Quality Management Area
St. Michael’s Air Quality Management Area
Appendix 3

Air Quality Management Area in South Northamptonshire
Taken from South Northamptonshire Air Quality Action Plan 2008

A5 Watling Street Air Quality Management Area
Northamptonshire Highway Air Quality Strategy
Fit for Purpose

For more information please contact
LTPConsultation@northamptonshire.gov.uk