In fulfillment of the Environment (Northern Ireland) Order 2002 - Local Air Quality Management
In 2004, following a review and assessment process Belfast City Council identified four areas of poor air quality across the city and subsequently declared these as Air Quality Management Areas (AQMAs). Two years later, the council, along with relevant partner organisations launched an Air Quality Action Plan (AQAP) for the city designed to address these areas of air quality concern, safeguard good air quality and to achieve national air quality strategy objectives and EU limit values by 2010. Around 90 per cent of the action plan was complete by the 2010 deadline but, although the air quality limit values for particulate matter have now been achieved, limit values for nitrogen dioxide continue to be exceeded and give cause for concern in some locations.

In order to fulfil our statutory obligations under the provisions of the Environment (Northern Ireland) Order 2002, the council and relevant partner organisations committed to the development of a revised AQAP for the city to tackle the outstanding nitrogen dioxide (NO₂) pollution issues.

Better care for Belfast’s environment is a key objective and priority for Belfast City Council in providing a clean, green city now and for the future. One aspect of ensuring we achieve this is through protecting and improving air quality for the health and wellbeing of the citizens and visitors of Belfast.

We have developed a comprehensive AQAP that draws upon all forms of air quality and transport planning activities, including sustainable transport options as well as engineering solutions. The aim of this AQAP is to improve road vehicle operations and promote and enable a shift onto more sustainable modes of transport to achieve compliance with the NO₂ EU limit value by 2020.

In producing this AQAP, Belfast City Council has worked in partnership with organisations represented on the Belfast Air Quality Action Planning Steering Group as acknowledged below. Their general support and contribution towards this document is greatly appreciated.

- Department for Regional Development
- Department of the Environment
- Freight Transport Association
- Road Haulage Association
- Translink
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Introduction

1.1 Introduction and aims

At a local level, Belfast City Council has an obligation to regularly review, assess and report on air quality under the Local Air Quality Management (LAQM) regime. In Northern Ireland, this is established via Part III of the Environment (Northern Ireland) Order 2002 and the relevant Policy and Technical Guidance documents (LAQM.PGNI(09)). Under the LAQM process, where a local authority determines that exceedence of an air quality objective is likely, they must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan with measures to pursue the relevant objective.

At a national level, the UK Government is required to achieve European Union (EU) air quality limit values in accordance with the schedules prescribed in the Ambient Air Quality Directive (2008/50/EC) and daughter directive. In these directives, the deadline to achieve the limit values for nitrogen dioxide (NO2) was given as 1 January 2010.

In September 2011, Defra reported to the European Commission that the UK had failed to meet limit values for NO2 in 24 zones. (A ‘zone’ is a part of the territory determined by Member States; an agglomeration is a zone where the population is greater than 250,000 or exceeds a certain population density). Northern Ireland is defined as a zone; the Belfast Metropolitan Urban Area is defined as an agglomeration. Notification was accompanied by action plans that provided evidence to the Commission regarding when the UK was likely to achieve the limit values. The Commission considered this information in detail and provided its decision on 25 June 2012, rejecting the two applications submitted for Northern Ireland. The Air Quality Action Plan for Northern Ireland was rejected on the grounds that it demonstrated compliance could be achieved a year earlier than applied for. The UK was advised to adjust this plan accordingly in order to keep the period of exceedence as short as possible. The revised action plan submitted for Northern Ireland was accepted by the Commission based on compliance with the annual limit value being achieved by 1 January 2014. The submitted Air Quality Action Plan for Belfast Metropolitan Urban Area was rejected on the grounds that it failed to demonstrate how compliance could be achieved by 1 January 2015 as suggested.

The aim of this action plan is primarily to confirm measures that will be implemented throughout the city to improve air quality for the citizens of Belfast. In doing so we will determine realistic projected compliance of the NO2 EU limit value using evidence on the scale and impact of the measures planned, including a clear implementation timetable for those measure.
In 2006, the council, along with relevant partner organisations launched an Air Quality Action Plan for the city designed to address these areas of air quality concern, safeguard good air quality and to achieve national air quality strategy objectives and EU limit values by 2010. The original action plan included 164 measures many of which were difficult to quantify in identifying emission reduction if any with their successful implementation. Around 90 per cent of the action plan was complete by the 2010 deadline but, although the air quality limit values for PM$_{10}$ have now been achieved, limit values for NO$_2$ continue to be exceeded and give cause for concern in some locations. Following evaluation of the previous action plan, it was agreed with Belfast Air Quality Steering Group that an integrated approach to linking measures would be adopted in the development of the new action plan. The new plan will have fewer measures targeted on achieving the required reductions in NO$_2$ both within the AQMAs and across the city as a whole.

### 1.2 Background

Belfast City Council completed its initial assessment of air quality across the city during 2003 and concluded that measures would be required in four specific areas of the city in order to mitigate the effects of NO$_2$ and PM$_{10}$ pollution. As these areas border major arterial roads, the pollution was principally attributable to road transport. The relevant National Air Quality Strategy objectives for NO$_2$ and PM$_{10}$ are summarised in the following table:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Concentration</th>
<th>Measured As</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen Dioxide (NO$_2$)</td>
<td>200 µgm$^{-3}$ Not to be exceeded more than 18 times per annum.</td>
<td>1-hour mean</td>
</tr>
<tr>
<td></td>
<td>40 µgm$^{-3}$</td>
<td>Annual mean</td>
</tr>
<tr>
<td>Particulate Material (PM$_{10}$)</td>
<td>50 µgm$^{-3}$ Not to be exceeded more than 35 times per annum.</td>
<td>24-hour mean</td>
</tr>
<tr>
<td></td>
<td>40 µgm$^{-3}$</td>
<td>Annual mean</td>
</tr>
</tbody>
</table>

In 2006, the council, along with relevant partner organisations launched an Air Quality Action Plan for the city designed to address these areas of air quality concern, safeguard good air quality and to achieve national air quality strategy objectives and EU limit values by 2010. The original action plan included 164 measures many of which were difficult to quantify in identifying emission reduction if any with their successful implementation. Around 90 per cent of the action plan was complete by the 2010 deadline but, although the air quality limit values for PM$_{10}$ have now been achieved, limit values for NO$_2$ continue to be exceeded and give cause for concern in some locations. Following evaluation of the previous action plan, it was agreed with Belfast Air Quality Steering Group that an integrated approach to linking measures would be adopted in the development of the new action plan. The new plan will have fewer measures targeted on achieving the required reductions in NO$_2$ both within the AQMAs and across the city as a whole.
In August 2004, the council identified and declared four Air Quality Management Areas (AQMAs) within Belfast where the health based air quality objectives are being exceeded. These AQMAs are described below; the blue lines on each map indicate the boundaries of the AQMAs as shown in Figures 1-4.

**Figure 1: M1-Westlink AQMA**

The M1 / Westlink corridor from the Belfast City boundary at Sir Thomas and Lady Dixon Park to the end of the Westlink at the junction with Great George’s Street and York Street including Stockman’s Lane and Kennedy Way. This area was originally declared for predicted exceedences of both the nitrogen dioxide and particulate material annual mean air quality strategy objectives as well as exceedences of the particulate matter 24 hour mean objective and the nitrogen dioxide 1 hour mean objective. This area was revoked for particulate matter in September 2015 but continues to exceed air quality objectives for nitrogen dioxide.

**Figure 2: Cromac Street and Albertbridge Street AQMA**

Cromac Street to the junction with East Bridge Street and then from East Bridge Street to the junction with the Ravenhill and Albertbridge Roads and Short Strand. This area was declared for predicted exceedences of the nitrogen dioxide annual mean air quality strategy objective.

**Figure 3: Upper Newtownards Road AQMA**

The Upper Newtownards Road from the North Road junction to the Belfast City boundary at the Ulster Hospital incorporating the Knock Road to the City boundary at Laburnum Playing Fields and Hawthornden Way. This area was declared for predicted exceedences of the nitrogen dioxide annual mean air quality strategy objective.

**Figure 4: Ormeau Road AQMA**

The Ormeau Road from the junction with Donegall Pass to the City boundary at Galwally. This area was declared for predicted exceedences of the nitrogen dioxide annual mean air quality strategy objective.
2 Air quality in Belfast

2.1 Air quality in Belfast

Belfast City Council operate five automatic monitoring stations across the city in order to inform its air quality management processes and to provide real time information to the public in relation to pollution levels within our air quality management areas.

This monitoring data would indicate that air quality in Belfast has generally improved. The magnitude of the decrease in NO₂ levels along the Upper Newtownards Road AQMA show reductions to the point that this area is now in compliance with the air quality objectives. The reductions in ambient NO₂ levels within this AQMA are welcomed, however, the council will continue to maintain its monitors in this location in order to determine whether the decrease is sustained over coming years.

Using the Defra year adjustment calculator tool we predict that Belfast, based on the existing situation, will be in compliance with the EU limit values by 2020 as demonstrated in Figure 5. With the significant measures being taken to improve air quality throughout the city coupled with the predicted emission reductions, we are confident that this is achievable.

Figure 5: Monitored and projected annual mean NO₂ concentrations at Belfast roadside air quality monitoring stations
2.2 Sources of emissions in Belfast

Local Air Quality Management Policy Guidance (LAQM.PGNI (09)) states that an Air Quality Action Plan (AQAP) must include quantification of the source contributions to the predicted exceedences of the relevant objectives; this will allow the action plan measures to be effectively targeted. Therefore, this AQAP needs to consider to what extent various sources are responsible for the exceedences of the NO₂ objectives. Figure 6 illustrates the estimated contribution of each source to overall nitrogen oxides emission levels – this is known as source apportionment and has been completed, using data obtained from the National Atmospheric Emissions Inventory (NAEI) 2010.

Transport accounts for 62.6 per cent of the oxides of nitrogen with a further 37.4 per cent attributed to industrial point, domestic, industrial and commercial sources. Domestic sources have experienced significant improvements with the introduction of the Clean Air Order and Smoke Control since the late 1960s. Industrial processes are regulated under different legislation to air quality and the implementation of any measures to address these sources would have to be introduced at a national level. Consequently, their development is beyond the scope of this AQAP and it is considered appropriate that the actions outlined within this plan, proposed to reduce ambient nitrogen dioxide levels, are predominantly targeted towards road transport sources.

2.3 Vehicle fleet composition and emissions

As transport is the major source of emissions in Belfast, to quantify further sources within the road transport sector, this action plan also undertook work in identifying the vehicle fleet composition and associated emissions. Traffic apportionment for each of the four AQMAs is presented in Figure 7.

The results indicate that light good vehicles (LGV) represent over 90 per cent of the fleet, however, despite this both heavy good vehicles (HGV) and buses produce more emissions per vehicle. Based on these finding the AQAP proposed measures will focus on encouraging a modal shift from single car occupancy towards public transport to reduce the number of cars and also work towards reducing emissions from public transport and HGVs throughout the city.
Figure 7: Vehicle fleet composition and related NOx emissions in Belfast AQMAs, 2013. Source: DRD – Traffic survey data 2013 and Traffic and Travel Information 2012 (Annual Traffic Census)

**Ormeau Road** - Transport Mode apportionment
- LGV 96.4%
- HGV 2.2%
- Buses 1.4%

**Ormeau Road** - Transport’s NOx emissions
- LGV 67.3%
- HGV 17.0%
- Buses 15.7%

**Upper Newtownards Road** - Transport mode
- LGV 96.3%
- HGV 2.9%
- Buses 0.8%

**Upper Newtownards Road** - Transport’s NOx emissions
- LGV 68.3%
- HGV 22.6%
- Buses 9.1%

**Westlink/M1 Corridor** - Transport mode apportionment
- LGV 94.6%
- HGV 4.6%
- Buses 0.8%

**Westlink/M1 Corridor** - Transport’s NOx emissions
- LGV 66.5%
- HGV 27.0%
- Buses 6.5%

**City Centre** - Transport mode apportionment
- LGV 93.3%
- HGV 1.9%
- Buses 4.8%

**City Centre** - Transport’s NOx emissions
- LGV 47.0%
- HGV 11.4%
- Buses 41.6%
2.4 Required reduction in nitrogen dioxide in Belfast

In order to progress the action plan process, in 2013 the council commissioned the Transport Research Laboratory (TRL) and Transport and Travel Research Ltd (TTR) to conduct a feasibility of options study to form the basis of the new action plan.

As vehicle transport was identified as the main source of emissions, a key part of the study was to design a test to provide an indication of the magnitude of reduction required to citywide traffic in order to meet the nitrogen dioxide objective and EU limit value. This information was significant to inform the decision making process so that the AQAP could be properly targeted. The TRL / TTR test concluded that a ~50 per cent reduction in traffic would equate to a 35 per cent reduction in road NOx / NO2.

Looking specifically at 2013 air quality monitoring data from the Westlink / M1 Corridor, the council have calculated that in order to reach the annual mean nitrogen dioxide limit value of 40 µg/m³ (assuming that NOx / NO2 background concentrations remain the same) road NOx would need to be reduced by ~50 per cent (which equates to a ~50 per cent reduction in traffic).

Clearly, if traffic reductions of this magnitude were possible across the city, this would have significant impacts on background concentrations. Calculations suggest traffic measures across the city to achieve a 35 per cent to 40 per cent reduction in background NOx concentrations could be achieved with approximately a 30 per cent reduction in the traffic.
2.5 What is being done to improve air quality within Belfast?

Improving air quality in Belfast has been high on the agenda for over 40 years. The city has experienced significant improvements with the introduction of the Clean Air Order and Smoke Control in the late 1960s. The availability of environmentally cleaner fuels such as natural gas has also contributed to improvements from domestic sources.

A significant amount of work continues to improve upon and protect citizens from exposure to poor air quality. An effective method of reducing public exposure to air pollution within Belfast is the integration of air quality considerations within the planning process. Such an approach seeks to ensure that no new development is permitted to cause a significant deterioration in air quality, and that residential developments are not permitted to be built in locations where air quality might already be poor. To address this issue, the council produced and in June 2009 launched ‘Air quality and land use planning: A Belfast specific guidance note for developers and air quality consultants’. The document ensures consistency in the approach to dealing with air quality and planning in Belfast.

Extensive monitoring and review work undertaken by the council indicate sustained reductions in both NO₂ and PM₁₀, and although areas remain where NO₂ continues to cause concern, PM₁₀ is now in compliance with the objective. The background concentrations of PM₁₀ have significantly decreased due to the shift to natural gas from solid fuel and the newer vehicle fleet throughout the city. Euro IV vehicle emission standards introduced in 2005 were designed to target particulate matter by using particulate filters on car exhausts. These factors coupled with the 2006 Air Quality Action Plan, which incorporated multiple actions across a wide range of areas have meant that the Westlink / M1 AQMA was revoked for PM₁₀ in September 2015.

To assist with the development of the original Air Quality Action Plan, a steering group was established in 2004 to identify and agree on measures, which would deliver improvements to air quality. Based on this previous success, in order to address the remaining NO₂ problem, a new steering group was established in 2013 with the objective of “Agreeing upon a consultative approach to developing a new air quality action plan for Belfast”.

As illustrated by the source apportionment analysis, a significant proportion of the nitrogen oxides emitted throughout the city is attributable to road transport. However, it should be noted that within Northern Ireland, the responsibility for managing the road network does not lie with district councils, but with the Department for Regional Development (DRD).

Similarly, the provision of public transport is undertaken by Translink, which manages the integrated services of Ulsterbus, Metro and Northern Ireland Railways. In relation to freight transport, both the Freight Transport Association (FTA) and Road Haulage Association (RHA) work closely with this sector throughout Northern Ireland. Since these organisations already have a wide range of initiatives in place for encouraging increased public transport patronage, and reducing transport emissions, it was considered appropriate that along with the Department of Environment Northern Ireland and Belfast City Council these organisations would form the new Action Planning Steering Group. The new plan will principally seek to build upon existing proposals and identify a new measures to complement and link these together. It is felt that by supporting and building upon existing proposals, tangible improvements in air quality can be achieved more quickly.
To facilitate the action planning process the council commissioned the Transport Research Laboratory (TRL) and Transport Travel Research (TTR) to undertake a ‘feasibility of options’ study to form the basis of the new action plan. The study involved four work packages. The first two work packages set the boundaries for the study and considered a wide range of air pollution mitigation measures, which were discussed with the steering group in detail. The likely impacts on emissions and air quality of these measures were ranked in order of impact to inform the decision making process.

Following individual meetings with the steering group organisations in March 2013, the potential measures were narrowed down the following year to take forward a shortlist of measures to better understand their potential impacts, implementation methods and costs as part of work package three. The shortlisted measures included a workplace parking levy, an improved interchange at the Westlink / York Street junction, new slipways to the Westlink at Stockmans Lane and Kennedy Way, active travel, bus improvements, a freight consolidation centre and low emissions zone. The outputs from work package three allowed the steering group members to report back to their own organisations and agree on the most effective measures that they could commit to for inclusion in the new action plan.
3 Action plan measures

3.1 Action plan measures

Having completed a feasibility study to consider all the available options to reduce nitrogen dioxide (NO₂) concentrations throughout the city, it is considered that the following package of measures will reduce emissions, improve road vehicle operations, and promote and enable a shift onto more sustainable modes of transport.

It is predicted that successful implementation of these measures will allow Belfast to meet air quality objectives for nitrogen dioxide by 2020.
The Department for Regional Development (DRD) is identified as a ‘relevant authority’ under the Air Quality Regulations (Northern Ireland) 2003 and as such, the Environment (Northern Ireland) Order 2002 requires it to implement actions in order to comply with, or to pursue the achievement of relevant air quality standards and objectives.

This duty has been reinforced by the Air Quality Standards Regulations (Northern Ireland) 2010, which place a statutory duty on Northern Ireland Government Departments to ensure that EU limit values are achieved.

The vision of the department is:

“A region with modern, safe and sustainable transport, roads and water services which improve quality of life for all.”

There are two core groups within the DRD, ‘Governance, Policy and Resources’ and ‘TransportNI’. The Governance, Policy and Resources group are responsible for public transport budgets, performance monitoring, accessible transport and the department’s governance and sponsorship role of NITHC / TranslinkNI. They are also responsible for regional development and transport policy and planning, sustainable transport, including the cycling unit, transport legislation and air and sea ports. This includes responsibility for coordinating and monitoring the implementation of the Regional Development Strategy and the New Approach to Regional Transportation.

TransportNI is responsible for ensuring that the public road network is managed, maintained and developed. It has a key responsibility in ensuring that measures are taken to implement the roads aspects of both the New Approach to Regional Transportation and the Investment Strategy for Northern Ireland 2011-21. It also informs the department’s policy development process to ensure that measures to encourage safe and sustainable travel are practical and can be delivered.

Both DRD TransportNI and the Policy and Resources group were represented on the action planning Steering Group, with the consensus that current transport arrangements and the high level of dependency on the private car, particularly in Belfast, was not sustainable. It was recognised that unconstrained traffic growth could not be accommodated on the Belfast highway network and that there was limited scope and appetite for ongoing highway works to support such growth.

In light of this and in keeping with the DRD vision the following range of measures proposed by DRD are designed towards reducing emissions by developing and promoting sustainable transport measures.
The project is to provide a computer-based multi-modal transport model and support services in order to assist the DRD and its partners to plan and prioritise transport investment in the greater Belfast area and across Northern Ireland.

The system will comprise separate but interlinked models of Northern Ireland and the Belfast urban area. The modelling system will be appropriate for:

- Guiding longer term (10 – 25 years) transportation policy and strategy taking account of changes in demography and land uses;
- Testing a range of possible major transport investment and management options developed to address economic, equality or environmental issues;
- Providing quantification of vehicular and passenger flows for use in the appraisal of individual transport schemes.

The model will be used to test the impacts of potential new highway, public transport, walking and cycling schemes at the planning and prioritisation stage. The model will forecast how travellers will change their routes, mode of travel, time of travel or even their destinations in response to the new choices and network conditions created. In particular, the model will forecast estimates of traffic flows and speeds on a link-by-link basis across the Belfast network. These will be of particular value in providing the key traffic inputs for use in the more detailed atmospheric dispersion models operated by the council. The model of Belfast is planned for completion by the end of 2015.
3.2.2 Belfast Rapid Transit System (BRT)

Belfast Rapid Transit (BRT) is a new bus-based public transport service which will help to address the current and future transport needs in Belfast and support sustainable economic growth and regeneration. BRT will provide a modern, safe, efficient and high quality service which will encourage people to travel by public transport instead of by car. It will help to integrate communities and link people to jobs, shops, leisure, health and education services.

The BRT network will initially include three rapid transit routes, which will link East Belfast, West Belfast and Titanic Quarter via the city centre. These three routes are known as EWAY, WWAY and CITI. The total estimated cost of the BRT is £98.5 million in outturn prices. Construction of the BRT infrastructure commenced in 2014 and assumes a completion end date in the 2018 financial year.

Demand forecasts have been prepared for the BRT system for two future years. The first future year (2021) was selected to represent the situation once initial patronage build-up has been achieved (typically 3 to 5 years after opening) and the second future year (2031) represents the longer-term situation.

The BRT system is forecast to:
- Increase public transport patronage by 3.5 million trips per year within 15 years of the pilot BRT network becoming operational.
- Increase daily public transport patronage by between 43 per cent and 75 per cent, depending on the BRT corridor.
- Increase the public transport mode share on the BRT corridors by approximately eight percentage points, from 17 per cent to 25 per cent.
- Reduce public transport journey times along the BRT corridors by up to 30 per cent.
- Reduce traffic volumes on the WWAY and EWAY BRT corridors by up to 20 per cent during the peak periods - due to modal shift to BRT from the private car and dispersion of some general traffic to other routes.
- Increase general traffic journey times along, and in the vicinity of, the BRT corridors by an average of 5-8 per cent - although some sections will experience increases of 40 per cent, particularly in the period immediately after implementation.

The BRT system is expected to lead to a beneficial impact for air quality in the Upper Newtownards Road AQMA with introduction of the EWAY route and along the Westlink / M1 AQMA with introduction of the WWAY route. This is a result of mode shift to BRT from private cars and therefore reduced overall traffic volumes. Calculations undertaken by the council predict a 16 per cent reduction of road NOx emissions g/Km along the Upper Newtownards Road at peak times with the introduction of BRT. The project is also expected to reduced carbon emissions, with a reduction of more than 92,000 tonnes of carbon over the appraisal period, valued at almost £3 million.
3.2.3 Belfast Transport Hub (Great Victoria Street)

TranslinkNI and the DRD have been working in conjunction with the Strategic Investment Board and have identified the potential to create a first class leading integrated public transport hub that will be a high-class gateway for Belfast.

Located on the site of the Europa Buscentre and Great Victoria Street Train Station, the new hub will create an excellent first impression of Belfast as a confident and progressive capital city offering state of the art links to national and international markets, create new jobs, provide investment opportunities, reduce congestion and share and support Belfast’s successful growing economy.

Currently the hub is in stage one; selection process of options. Construction of the scheme is anticipated to start in 2017 (subject to funding) and is expected to take up to 5 years to complete at a cost in and around £100million. It will cater for current demand and future growth, offering customers a fully integrated transport solution: a destination catering for rail, bus and coach, taxi, car and bicycle users. Already around 7 million passengers use the existing facilities each year and as more people choose to use the bus and train this is estimated to increase to around 13 million passengers by 2030. This hub will enable a shift to more sustainable modes of transport and in the long term contribute to a reduction in background concentrations of nitrogen dioxide.
3.2.4 Bicycle Strategy for Northern Ireland

In November 2013, a dedicated Cycling Unit was established within the DRD. The unit will be working to ensure that cycling provision is a key element in both transport strategy and delivery and to develop and promote the bicycle as an everyday mode of transport throughout Northern Ireland.

Since being established the Cycling Unit has developed a draft Bicycle Strategy that sets out a vision for the kind of cycling community we would like Northern Ireland to be in 25 years. The draft vision is:

‘To establish a cycling culture in Northern Ireland to give people the freedom and confidence to travel by bicycle, and where all road users can safely share space with mutual respect.’

The vision for cycling is set within the context of, and driven by the Executive’s Programme for Government priorities of growing a sustainable economy, improving health and well being while building communities and protecting the environment. We aspire to become more like our European neighbours who have embraced the bicycle as simply ‘another mode’ of transport that is accessible, attractive, safe and desirable.

A public consultation on the draft strategy concluded in November 2014. A consultation report is being prepared and the final strategy will be launched in 2015. The strategy will be followed up with a Bicycle Strategy Delivery Plan, which will outline specific, measurable, achievable, realistic and time bound objectives, policies and actions.

The Cycling Unit has also begun work on the development of a Bicycle Network Plan for Belfast. This plan is intended to guide the development and operation of the bicycle infrastructure in the city for the next ten years. The objectives of the Network are:

To develop a comprehensive bicycle network through the expansion of cycling infrastructure and cycling facilities.

To ensure consistency in the design of safe infrastructure – providing dedicated infrastructure where there are large volumes of higher speed vehicles and shared facilities where the volume and speed of traffic is low.

To encourage use of the bicycle and promote safe cycling through increasing the amount of bicycle parking, providing more cycling education and training programmes and supporting events to promote cycling.

Cycling is beneficial for the individual, but it also delivers benefits for wider society including fewer sick days, longer life expectancy, less wear and tear on the roads, less pollution and buoyant local economies. Increased levels of cycling could contribute to better urban design, reduced congestion, improved air quality, less noise pollution and a cleaner environment.
The ‘Plugged in Places’ (PIP) initiative was launched on 11 November 2009 and provided up to £30 million funding to help deliver charging points to stimulate the market for the uptake of electric vehicles in the United Kingdom. The funding was awarded to eight successful regions including £850,000 for the Northern Ireland ecarNI project.

The DRD and the Department of the Environment (DOE) formed a consortium of public and private sector organisations, which included both departments, Northern Ireland Electricity (NIE), Electricity Supply Board (ESB), Power NI, Donnelly Motor Group, Strategic Investment Board (SIB) and a number of local councils. As a prerequisite of membership, the Consortium members agreed to provide matched funding. The overall expenditure, including Office of Low Emission Vehicles (OLEV) funding and Consortium funding, between 1 of April 2011 and 31 of March 2014 on the ecarNI project was £3.2 million.

The ecarNI Phase 1 Project successfully delivered on its 3-year funding requirements, by installing 320 no. 22kW charge points at 160 locations throughout NI, and 14 no. 50kW DC rapid charge points. This network operates seamlessly with the infrastructure in the Republic of Ireland. A charge point management system (CPMS) was also delivered which records charge point usage data and has the functionality to deliver a payment system in the future. A customer service helpline was also created and processes were put in place to deal with on-going operational and maintenance queries from ecarNI drivers. A series of marketing initiatives were also delivered.

There are significant benefits to both the environment and to the driver in the use of electric vehicles. These include:

- no emissions while driving;
- no noise;
- up to 30% lower CO₂ emissions, well to wheel (compared to a similar sized petrol vehicle);
- no petrol costs – the approximate cost of charging a vehicle is around £3.00;
- no road tax; and
- maintenance costs around 20% lower than petrol or diesel cars or vans.
Under ecar Phase 2 (2014 – 2016), the department will be working with the electricity sector and other key stakeholders to advance the commercialisation of the current ecarNI infrastructure, to continue the operation of the network and to provide continued support to the innovation and development of the growing ultra low emission vehicle sector within Northern Ireland.

The Go Ultra Low Cities scheme funded by the Office for Low Emission Vehicles (OLEV) is an opportunity for cities to cultivate a regional, national and international reputation for their uptake of ultra low emission vehicles (ULEVs). The £35 million fund is being made available for 2-4 Cities (Regions) to put in place measures that will increase uptake of ULEVs, improve air quality and allow successful bidders to show that they are an exemplar region for innovation in electric vehicle usage.

The DRD and DOE were recently successful in the screening phase of the scheme with a Northern Ireland regional bid entitled ‘Evangel’. The final bid was submitted in October 2015 and the department is seeking partners in the public, private, voluntary and community sectors to work together to secure the funding.

The Northern Ireland bid proposal included a number of incentives to encourage the uptake of electric vehicles across Northern Ireland. A major marketing and communications campaign the ‘Million-Mile-Move’ was also proposed as well as other low carbon policy ideas which will contribute to the growth of the electric vehicle sector in Northern Ireland and improvements in air quality.
3.2.6 Park and Ride

The DRD produced a Strategic Park & Ride Delivery Programme 2013-15. The aim of this programme was to create at least an additional 1,000 Park & Ride and Park & Share spaces across Northern Ireland.

By the end of its term in 2015 the programme will have significantly exceeded its objectives, by delivering over 2,000 additional spaces. This will bring the total number of Park & Ride spaces to over 7,600, an increase of over 30 per cent in the number of spaces in the last 2 years. The new spaces provided under the Programme were delivered at the following locations:

- Ballee: 49 additional spaces
- Ballygawley: 60 additional spaces
- Ballymartin, Templepatrick: New 420 space site
- Blacks Road, Belfast: 26 additional spaces
- Coleraine Bus & Train Centre: 45 additional spaces
- Crevanagh Road, Omagh: 166 additional spaces
- Drumahoe, Co Londonderry: 149 additional spaces
- Dunlady Road, Dundonald: New 520 space site
- Sheepbridge, Newry: 37 additional spaces
- Tamnamore, Dungannon: New 312 space site

DRD is currently considering the options for the delivery of additional Park & Ride and Park & Share facilities post 2015, when the current programme expires. The scale of the Park & Ride proposals post 2015 will be dependent on the availability of finance. Projects that may be considered post 2015 include:

- Cullybackey Train Halt: New 110 space site
- Lisburn West Train Halt: New 350 space site
- Sprucefield, Lisburn: New 650 space site, replacing existing 320 space facility

These additional Park and Ride facilities have positive effects on air quality in Belfast by providing an attractive public transport alternative to the private car for commuters coming into the city to work.
3.2.7 York Street Interchange Scheme

The current York Street junction is one of the main gateways to Belfast and provides access to the Port of Belfast as well as serving strategic traffic movements between the North, South and East of the Province. The three roads at this location cater for over 100,000 vehicles per day.

The York Street Interchange Scheme will provide full grade separation for traffic travelling on the strategic network between the Westlink, the M1 and M2. These proposed improvements to this key junction will provide continuous links between three of the busiest roads in Northern Ireland, the M2, M3 and M1 / Westlink Corridor. This project is a high priority within the DRD programme. The cost of the preferred option for the York Street Interchange lies in the range of £100 Million to £135 Million and it is envisaged, that construction will commence in 2018 and will take three years to complete.

Currently work is continuing on the design and associated studies to inform the Direction Order, Vesting Order and Environmental Statement. These will form part of the Stage 3 Assessment on the preferred option and will include detailed assessments of the transport benefits such as journey timesavings, along with more detailed costs. These reports will also include details of the performance of the scheme in areas such as integration with public transport, non motorised users, handling of storm water, level of flood protection, visual impact and cultural heritage, land use, traffic noise and air quality amongst others.

An indicative test to assess the impact this scheme may have was undertaken as part of the AQAP feasibility study. The test evaluated the impact of improved throughput of the junction by reducing stop start activity based on the rational that removing existing traffic signals at the junction will in effect improve the throughput of traffic. The results indicate that the impact from smoothing the driving pattern at the two junctions would reduce concentrations of road NO2 by approximately 60 per cent.

In terms of air quality, the scheme is considered as a means of reducing localised emissions on connecting roads (i.e. as a result of relieving a significant congestion hotspot) and, to a lesser extent, incremental reductions in background emissions, which of course will have a wider impact on exposure.
3.3 Measures proposed by Translink

Translink is the brand name for the integrated public transport operation of Belfast Metro, Northern Ireland Railways and Ulsterbus. As the primary provider of public transport services in Northern Ireland, Translink is uniquely placed to encourage the use of public transport as the preferred method of transport thus contributing to reduced road transport emissions.

To make public transport attractive, they have a responsibility to satisfy the travelling public’s demands relating to quality, reliability, cost and frequency of transport services. Translink play an important part in improving the quality of the environment and their Environmental Policy demonstrates this commitment in achieving this goal.

Public transport by its very nature is a more sustainable option and Translink work hard to offer integrated travel solutions that are attractive, sustainable and good value in order to attract passengers. Around 77 million passengers now use the bus and train every year but as well as encouraging individuals to go car free, helping to reduce congestion, air pollution and carbon use, Translink also takes steps to reduce their own impact on the environment.

With specific relation to air quality, the organisation has consistently sought to improve fuel efficiency and reduce emissions from its vehicles. Buses are purchased in line with the latest and best available emission standards and recent investment in new buses will ensure continuing environmental improvements.

3.3.1 Bus fleet improvement commitment

Translink are working towards achieving their 7 year fleet procurement programme, which covers 2013 – 2020. Funding to cover purchases for 2013-14 and 2014-15 has allowed for the delivery of 52 new buses (42 double decker and 10 single decker), representing around 20 per cent of the Metro fleet all with conventional drivetrains, albeit to the new Euro VI emission standard. These new vehicles which have been in service since September 2014, have replaced older vehicles within the fleet, and currently operate on some of the busiest routes across the city including both the Ormeau Road and Upper Newtownards Road AQMAs. They will also service the Blacks Road and new Park and Ride facility at Dundonald, which opened in October 2014.

The programme also proposes purchases of 15 hybrid double decks for Metro in years 2015-16 and 2016-17 (a total of 30 vehicles) and a further 15 in 2019-20. Although Translink use the term “hybrid” in the programme, the actual procurement process will take a wider view of the best available technologies at the time. Success of the proposed procurement programme is subject to funding which is currently secured until 2015.

These new buses will be amongst the first vehicles in Northern Ireland to meet the latest Euro VI emission standards making them some of the most fuel efficient and environmentally friendly buses in the region. Combining lower air quality emissions with attracting more people out of their cars will help to provide a healthier city environment for all. Calculations undertaken by the council have demonstrated a 17 per cent decrease in NOx emissions from the Metro fleet between October 2011 and October 2014 along the Upper Newtownards Road AQMA.

Alongside this, Translink have been assisting DRD to look at options for BRT vehicles. This has included a review of alternative drivetrain technologies.
3.3.2 Promote public transport

Translink are committed to encouraging the use of public transport and run a number of travel awareness campaigns including:

- Love Metro Saturdays - £2 day travel with a dayLink card or £2.50 with a paper day ticket on Metro during the promotional period;
- Smartlink MJ / Travel Card Savings;
- Family Fares – Available on main school holidays;
- Park and Ride promotions in particular for Black Road / Sprucefield / Cairnhill / Dundonald;
- TaxSmart / Corporate commuter initiative – targeting local businesses
- Better Value ticket initiative;
- Extensive ylink campaign – aimed at all young people 16 – 23 (includes student activity at Belfast Met / Queens / UU / Stranmillis / St Marys etc);
- Safety bus / Schools Travel Challenge – while main issues are about safe travel, key messages also relate to sustainable travel and benefits for environment / society / individuals and wider community;
- Translink support key events in the city in conjunction with Belfast City Council; and
- Generic Life’s Better Corporate Campaign - focuses on the many benefits of using public transport.

Translink have also promoted using public transport through a number of sponsorships including:

- East Belfast Arts Festival;
- Feile;
- Belfast Mela;
- Metro Monster Mash – Halloween;
- NI Schools Debating Competition – motion around benefits of sustainable travel; and
- Ulster Rugby Partnership – Promotion of Metro to Ravenhill – special ticket.

These campaigns may initially have a low impact on air quality, but will provide long term benefits in encouraging the use of public transport. Increasing the use of public transport should reduce single occupancy car use, improve air quality and result in a beneficial effect on health. Further information on Translink campaigns is available on their website at www.translink.co.uk.
The Freight Transport Association (FTA) and Road Haulage Association (RHA) are both well-established trade associations for operators of goods vehicles within the field of freight transport logistics.

They represent the interest of professional hauliers and commercial vehicle operators supplying them with many services to help their businesses be safe, efficient and profitable. As well as representation the associations also provide services to their members including training, tachograph analysis, maintenance audits, legal & best practice advice and consultancy services.

3.4 Measures proposed by the Freight Transport Association (FTA) and Road Haulage Association (RHA)

3.4.1 Assess feasibility for a Freight Consolidation Centre (FCC)

Freight Consolidation Centres (FCC) are distribution centres, situated close to a city centre, shopping centre or construction site, at which part loads are consolidated and from which a lower number of consolidated loads are delivered to the target area, so reducing the number of vehicle movements. To enhance the benefits of a FCC, electric or low emission vehicles can be used to make the consolidated deliveries in the area.

The DRD represented at an All-Ireland Freight Forum in 2013, briefly looked at the potential for a FCC in Belfast and agreed it may be discussed at further meetings in the future. In addition, the FTA held a number of meetings with Belfast City Centre Management (Belfast City Council) incorporating TransportNI, Police Service of Northern Ireland (PSNI), Chamber of Commerce and FTA members to consider how to make deliveries more efficient and economical. The idea of a FCC was believed to be a good one but it would need to be made mandatory to be successful.

A test undertaken as part of the AQAP feasibility of options study indicated that consolidation of goods into the City centre with a 100 per cent uptake can bring about significant reductions in emissions and subsequent improvement in AQ (approximately 20 per cent reduction in annual mean NO₂ compared to the base case). The voluntary uptake did not appear as attractive (approximately 5 per cent reduction in the annual mean NO₂) but would nevertheless provide a foundation to promoting a greater uptake.

On this basis of the test results, it was agreed by the steering group members to further investigate and explore options available and the feasibility of developing a Belfast FCC.
3.4.2 Loading bays & servicing parking

DRD as part of the Belfast on the Move project carried out an overall review and reassignment of the kerbside allocation after a series of detailed consultations with a number of key stakeholders. This project was substantially completed in summer 2013, with a 12-month review carried out in July 2014.

The review identified many conflicting demands on available kerb side space in Belfast City Centre including provision for bus stops, disabled parking bays, taxi ranks, loading bays and short duration parking applications (Pay and Display bays).

The Freight Transport Association is keen for this to be further investigated and have requested the provision of additional loading bays within Belfast City Centre. TransportNI are scheduled to carry out an overall review of loading bays in Belfast City Centre in 2015 and will liaise with all the main stakeholders in relation to this matter including the FTA and RHA.

3.4.3 Investigate introduction of the ECO Stars scheme to Belfast

The ECO Stars (Efficient and Cleaner Operations) fleet recognition scheme is a free, voluntary scheme designed to provide recognition, guidance and advice to operators of goods vehicles, buses and coaches.

The scheme provides members with recognition at both vehicle and whole operation levels for a company’s best practices (which lead to a star rating of 1-5 for both vehicles and overall operation, based on both age/emission standards of vehicles and operational measures that reduce fuel consumption).

The scheme can deliver emission benefits through: encouragement and advice on fleet upgrades to reduce emissions and fuel consumption; and encouragement and advice on best practice operational measure to reduce fuel consumption. ECO Stars could promote positive engagement with freight, delivery, servicing and passenger transport operators that can open up other opportunities for partner working and adoption of best practices at a local level that benefits industry and business, plus citizen’s health and the environment.

Belfast City Council are currently working with the FTA and RHA to investigate the scheme in more detail and identify any associated air quality benefits of introducing the scheme to Belfast.
3.5 Measures proposed by Belfast City Council.

Belfast City Council recognises that the most significant initiatives for improving air quality are those measures proposed by the DRD and Translink. Despite this, the council take a lead role in encouraging improvements in air quality to improve the health and wellbeing of the citizens and visitors of Belfast.

As an organisation, we will consider our own transport implication through addressing emissions from our fleet to minimise the impact of our operations upon air quality across Belfast. We will encourage and promote more sustainable transport options including public transport and active travel by walking and cycling. We will progress the Belfast Public Bike Hire scheme, which will link with measures proposed by DRD / Translink and enhance the connectivity between transport options throughout the City.

3.5.1 Coca-Cola Zero Belfast Belfast Bikes

The development of a public bike share scheme is identified as a partnership project in the council’s Investment Programme 2012-2015. Phase 1 of the scheme included 300 public bikes, and up to 30 bike-docking stations in the city centre.

Objectives of the bike hire scheme are:
- to support an increase in the modal share for cycling in Belfast and reduce dependency on cars particularly for short trips;
- to improve the health of residents by encouraging a healthier way to travel;
- to give our residents and visitors greater access to places that are beyond reach on foot through an affordable transport system;
- support access to employment and services by linking city centre locations; and
- to reduce greenhouse gas and ambient pollution emissions from road transport.

In summary, Belfast Public Bike Hire will provide a sustainable and inexpensive transport system for local people and visitors. It will help reduce traffic congestion and vehicle emissions, improve air quality and result in a beneficial effect on health. The scheme has been operational since April 2015.
3.5.2 Manage the councils fleet emissions

Belfast City Council’s fleet of vehicles is one of the council’s biggest assets, with over 400 vehicles and items of plant with a value over £14 million. In June 2013, the council approved a high-level improvement plan based on recommendations from an external fleet consultant following review of the existing fleet.

The recommendations will allow the council to put into place a more effective and appropriate means of managing, controlling and utilising the fleet. Ultimately, this will enable us to have a better value for money approach to fleet provision, and create strong foundations so that we can deal with the current and future financial and environmental challenges and take a proactive approach to managing emissions from our own transport and fleet activities.

3.5.3 Support Belfast Active Travel Plan

Belfast City Council is taking part in a three year programme funded by the Public Health Agency (PHA), to encourage staff to get active by walking or cycling to work. This programme is part of the new Belfast Active Travel Action Plan (which the council support through the Belfast Strategic Partnership) and links in with the council’s own Health and Wellbeing Strategy.

In aiming to boost active travel and reduce the number of car journeys, the action plan sets out a series of actions under four key aims:

- Improving the walking and cycling network (for example: two end-to-end cycling demonstration routes).
- Building new skills for active travel (for example: support programmes for schools, workplaces and communities).
- Promoting opportunities for active travel (for example: improved signage, taster sessions).
- Supporting others to prioritise active travel (for example: influencing planning policy).

The active travel plan aims to make Belfast a more vibrant city where people are healthy, fit and well connected with one another, and use physical activity as part of their everyday lives. Taking an alternative mode of transport will also reduce air pollution making Belfast a better place to live and work.
Summary of Air Quality Action Plan proposals

To summarise the Air Quality Action Plan (AQAP) proposals, timescales for implementing the measures are classified as short, medium or long term, with air quality impacts and costs classified as low, medium or high. The classification scheme is summarised in the following tables:

Table 4.1: Estimated Timescales.

<table>
<thead>
<tr>
<th>Time category</th>
<th>Time required to implement measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short</td>
<td>&lt; 2 years</td>
</tr>
<tr>
<td>Medium</td>
<td>2– 5 years</td>
</tr>
<tr>
<td>Long</td>
<td>&gt;5 years</td>
</tr>
</tbody>
</table>

Table 4.2: Description of impacts and costs given in output tables

<table>
<thead>
<tr>
<th>Level</th>
<th>Air quality impacts</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>No significant or measurable impact as will reduce emissions only by a minimal amount on own</td>
<td>Under £100k setup and year 1 operation</td>
</tr>
<tr>
<td>Med</td>
<td>Will reduce emissions by a significant amount, likely to have a measurable effect when combination with other measures or at local level/specific times. Unlikely (on own) to impact on annual average concentrations</td>
<td>£100K to £500,000 setup and Year 1 operation</td>
</tr>
<tr>
<td>High</td>
<td>Significant and measurable impact</td>
<td>£500,000 set-up and Year 1 operation</td>
</tr>
</tbody>
</table>
# Table 4.3: Summary of Action Plan Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Lead Authority</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast Multi-Modal Transport Model</td>
<td>DRD</td>
<td>Development of a computer-based multi-modal transport model and support services in order to assist the DRD and its partners to plan and prioritise transport investment in the greater Belfast area and across Northern Ireland. The model will be applied to test impacts of potential new highways, public transport, walking and cycling schemes at the planning and prioritisation stage. The model will forecast how travellers will change their routes, mode of travel, time of travel or even their destinations in response to the new choices and network conditions created.</td>
<td>High</td>
</tr>
<tr>
<td>Belfast Rapid Transit</td>
<td>DRD</td>
<td>Belfast Rapid Transit (BRT) is public transportation (PT) by bus that is intended to provide a faster more reliable and more comfortable journey for passengers than conventional bus services. In order to provide a faster journey time, road space is allocated to give priority to BRT vehicles. The objective is to improve accessibility and service for existing PT users and attract new PT users.</td>
<td>High</td>
</tr>
<tr>
<td>Belfast Transport Hub</td>
<td>DRD</td>
<td>Translink and the DRD in conjunction with the Strategic Investment Board have identified the potential to create a class leading integrated Public Transport Hub in Belfast. The hub is set to be located on the 20-acre site of the existing Europa Buscentre and Great Victoria Street Train Station. The new hub will offer customers a fully integrated transport solution: a destination catering for rail, bus and coach, taxi, car and bicycle users.</td>
<td>High</td>
</tr>
<tr>
<td>Bicycle Strategy for NI</td>
<td>DRD</td>
<td>Improve and extend cycle network in Belfast City Centre with a network of parallel routes including contra-flow cycle lanes, shared use bus and cycle lanes. Provide secure cycle parking, promote cycle to work scheme and public bike hire scheme.</td>
<td>Med</td>
</tr>
<tr>
<td>ecarNI</td>
<td>DRD</td>
<td>ecarNI - installation of electric charging points across NI. 9 points in Belfast centre on street or in car parks. Over the next 2 years the Department will be working with the electricity sector and other key stakeholders to advance the commercialisation of the current ecar infrastructure, to continue the operation of the network and to provide continued support to the innovation and development of the growing ultra low emission vehicle sector within Northern Ireland.</td>
<td>Med</td>
</tr>
<tr>
<td>Park and Ride (P&amp;R) (Bus &amp; Rail)</td>
<td>DRD</td>
<td>P&amp;R schemes aim to reduce traffic travelling and parking within the city centre by establishing an out of town car park and using buses (or trains) to travel into the centre. The objective is to improve accessibility and service for existing PT users and attract new PT users.</td>
<td>High</td>
</tr>
<tr>
<td>Timescale</td>
<td>AQ impact</td>
<td>AQ Benefits</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Short Operational from December 2015</td>
<td>Med</td>
<td>This model will provide the capability to estimate the likely change in air quality arising from different transport investment options.</td>
<td></td>
</tr>
<tr>
<td>Med Construction commenced 2014 Estimated completion 2018</td>
<td>Med</td>
<td>Increase in the usage of the public transport would contribute to reduced congestion and improved air quality. Our test results suggests that introduction of BRT would reduce road NOX emissions by ~16% based on Euro 6 buses (Upper Newtownards Road).</td>
<td></td>
</tr>
<tr>
<td>High Estimated start date 2017 Estimated completion 2022</td>
<td>Med</td>
<td>Experience in Great Britain and Europe shows that investing in public transport infrastructure, particularly this type of project, improves the public transport. Increase in the usage of the public transport generally contributes to reduced congestion and improved air quality.</td>
<td></td>
</tr>
<tr>
<td>High Bicycle Strategy launched in 2015 to be followed by a 10yr Network Plan for Belfast</td>
<td>Low - Med</td>
<td>The Bicycle Strategy will contribute to improvements in the physical environment. Increased levels of cycling could reduced congestion, improved air quality, reduce noise pollution and contribute to a cleaner environment. The Bicycle Strategy will be followed with a Bicycle Network Plan for Belfast to guide the development &amp; operation of bicycle infrastructure in the city for the next 10 years.</td>
<td></td>
</tr>
<tr>
<td>Med NI Bid proposal submitted to OLEV in October 2015 – application for £35million competitive funding to be divided between 2-4 cities for the period 2015-2020</td>
<td>Med</td>
<td>There are significant benefits to both the environment and to the driver in the use of electric vehicles. These include: no emissions while driving; no noise; up to 30% lower CO2 emissions, well to wheel (compared to a similar sized petrol vehicle); no petrol costs – the approximate cost of charging a vehicle is around £3.00; no road tax; and maintenance costs around 20% lower than petrol/diesel cars/vans. Our test results suggests that a 1% change of the LGVs along the Westlink corridor to ecars would reduce road NOx emissions by ~0.6% based on the 2013 traffic data.</td>
<td></td>
</tr>
<tr>
<td>Short Park and Ride Delivery Programme 2013-2015</td>
<td>Med</td>
<td>DRD considering the options of delivering additional P&amp;R schemes. This would have positive effect on reducing air quality in Belfast by providing alternative transport for commuters coming into the city rather than private car. There is currently a total of 7,600 P&amp;R spaces throughout NI, the 2013-2015 delivery programme resulted in an increase of over 30% in the number of spaces available. Improvements to P&amp;R facilities along the Belfast Metropolitan Transport Corridor have resulted in a 17% increase of cars using the facilities between 2012-2014.</td>
<td></td>
</tr>
<tr>
<td>Measure</td>
<td>Lead Authority</td>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>York Street Interchange</td>
<td>DRD</td>
<td>The York Street Interchange will provide full grade separation for traffic travelling on the strategic network between the Westlink, the M1 and M2. These proposed improvements to this key junction will provide continuous links between three of the busiest roads in Northern Ireland; the M2, M3 and A12 / Westlink. This project is a high priority within the DRD Programme.</td>
<td>High</td>
</tr>
<tr>
<td>Fleet improvement</td>
<td>Translink</td>
<td>Upgrading current bus fleet by replacement and renewal to bring in greater proportion of newer, lower polluting vehicles, and reducing the average age of the fleet.</td>
<td>High</td>
</tr>
</tbody>
</table>
|                                     |                         | Proposed procurement process for Metro Fleet (subject to funding):  
<p>| Promote Public Transport            | Translink               | Annual programme of publicity campaigns and events – encouraging commuters to use public transport instead of private cars.                                                                                   | Low   |
| FCC                                | RHA &amp; FTA               | Goods / deliveries moved into city centre from edge of town warehouse, for example at a site close to the city port.                                                                                       | Low - Med |
| ECO Stars                           | RHA &amp; FTA               | Voluntary fleet recognition and advice scheme that encourages operators to move towards a cleaner fleet and improve fuel efficiency. A sufficient number of operators would need to sign up to deliver emission benefits. | Low   |
| Servicing and Loading Bays (S&amp;L)    | RHA, FTA and TransportNI | Allocating current on-street car parking spaces at strategic points as HGV Loading Bays for specific periods such as 07.00 – 11.00 Monday to Friday. This would ease the flow of traffic in the city and persuade some commuters to avoid taking car into the city centre at morning peak hours | Low   |
| Coca-Cola Zero Belfast Belfast Bikes | BCC                     | Public bike scheme in city centre – 300 bikes and 30 docking sites in public places including Titanic Quarter, the Gasworks, Queen’s University and York Street.                                                   | Med   |
| BCC Fleet Improvement               | BCC                     | BCC developed Fleet Improvement Programme in 2013. This includes updating fuelling infrastructure, developing GPS fleet-tracking system and disposal method.                                                        | Low   |
| Active Travel Plan                  | BCC                     | Encourage walking, cycling and use of public transport instead of private car.                                                                                                                               | Med   |</p>
<table>
<thead>
<tr>
<th>Timescale</th>
<th>AQ Impact</th>
<th>AQ Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med</td>
<td>High</td>
<td>The York Street interchange redevelopment will in effect improve the throughput of traffic and reduce background concentrations of NO\textsubscript{2}.</td>
</tr>
<tr>
<td>Estimated start date 2018 Estimated completion 2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Med</td>
<td>High</td>
<td>Fleet improvement will reduce emissions from buses and consequently improve air pollution especially along the busy roads.</td>
</tr>
<tr>
<td>Fleet procurement programme in place for the period 2013-2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>Low</td>
<td>The impact of this measured will be low initially, but should increase over time as further marketing campaigns encourage greater usage of public transport.</td>
</tr>
<tr>
<td>Ongoing publicity campaigns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long</td>
<td>Low - Med</td>
<td>FCC combined with the use of low emission vehicles would have a significant impact on emissions level.</td>
</tr>
<tr>
<td>Investigate and explore options 2015-2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Med</td>
<td>Low</td>
<td>Uptake of this scheme would result in greener and modern delivery vehicles in the city centre (reductions in emissions).</td>
</tr>
<tr>
<td>Investigate and explore options 2015-2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>Low</td>
<td>More loading bays in the city would reduce engine idling caused by vehicles having to wait for suitable parking space. It would also reduce the occurrence of double parking therefore reducing traffic congestion.</td>
</tr>
<tr>
<td>TransportNI S&amp;L Bays review is scheduled for 2015-2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short</td>
<td>Low</td>
<td>Using the bikes for shorter city centre journeys will cut congestion and improve air quality.</td>
</tr>
<tr>
<td>Operational April 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Med</td>
<td>Low - Med</td>
<td>This will reduce overall emissions from council fleet.</td>
</tr>
<tr>
<td>2013-Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Med</td>
<td>Med</td>
<td>Increasing use of public transport and active travel such as walking and cycling should reduce single occupancy car use, improve air quality and result in a beneficial effect on health.</td>
</tr>
<tr>
<td>Plan implementation 2015 - 2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Belfast City Council and partner organisations involved in development of the Air Quality Action Plan (AQAP) recognise that ambient pollution levels can only be successfully reduced across the city if the proposals outlined within the plan gain the widespread support of all stakeholders including the public. Therefore, in developing this action plan, Belfast City Council consulted with a diverse range of relevant authorities and stakeholder groups at various stages throughout the process.

Belfast City Council routinely publishes a quarterly magazine entitled City Matters, which is circulated to all households within Belfast and provides information regarding the council’s activities. It was felt that this publication provided the most effective approach through which to reach all households within Belfast. An article was therefore placed in the summer 2015 edition of the Belfast City Council City Matters magazine. The article publicised the development of the AQAP and invited residents to submit their views on the proposed content and measures within the plan. The draft AQAP was also publicised via the council’s social media networks and made available for the public to download from the Belfast City Council website.

Feedback from both statutory and non-statutory respondents indicated that there was positive support for implementation of measures proposed in the action plan. However, concern was expressed regarding successful implementation of some measures at a time of significant government budget cuts. Some of these concerns were specifically in relation to budget cuts being imposed on Translink and it was noted that instead of enhancing public transport services, the short and long-term impact of such cuts could potentially result in more people using their cars.

One respondent expressed concern and disappointment that the action plan did not include any measures to address domestic situations, such as discharge from boiler flue pipes. Domestic emissions are regulated by Building Control under the Building Regulations, which set performance standards for the design and construction of buildings. Part L of these regulations considers combustion appliances and fuel storage systems and were therefore not the remit of this action plan.

Finally, Sustrans submitted an extensive consultation response. We consider that the following three overall recommendations from them will be addressed through successful implementation of this AQAP:

- **Capital – infrastructure**
  Transport investment priorities need to change: local air quality improvement should be a priority objective in the fundamental planning of government spending on transport.

- **Resource – behaviour change/marketing**
  Specifically, a significant, dedicated investment programme should be created for cycling and walking, and with a still clearer focus on shifting local transport choices from motorised to active travel.

- **Legislation**
  Existing and planned developments and infrastructure should be ‘health-checked’, to ensure they are supportive of active travel, will not generate additional motor trips, and in particular will lead to improved local air quality.
To ensure that the Air Quality Action Plan (AQAP) measures are implemented by relevant dates and to provide a medium for other contributors to report on the implementation of their measures, the council will convene the Air Quality Action Planning Steering Group on an annual basis. During meetings, steering group members will be able to present progress on their own proposals and consider the implementation of measures.

Additionally, the Environment (Northern Ireland) Order 2002 places a statutory duty upon local authorities to undertake annual reviews and assessments of air quality throughout their area. The Department of the Environment has published a timetable for this process covering the period 2005 – 2017. As part of this review and assessment timetable, local authorities were required to submit an updating and screening assessment in April 2015 and progress reports to the Department in April 2016 and 2017. The department has also published guidance indicating that progress reports should include information on the implementation of the AQAP.

Belfast City Council will monitor implementation of the AQAP via annual meetings of the Belfast Action Planning Steering Group. Annual progress updates will be submitted to the department via Local Air Quality Management Progress Reports.
Local Authority Officers:
Air Quality Officers

Department:
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