



# Greater Manchester Local Transport Plan 3

## Integrated Assessments

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### Non-Technical Summary



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# ABBREVIATIONS

The following abbreviations have been used in this report:

Abbreviation	Description
AQMA	Air Quality Management Area
BAME	Black, Asian and Minority Ethnic
BAP	Biodiversity Action Plan
CCTV	Closed Circuit Television
CO <sub>2</sub>	Carbon Dioxide
DECC	Department of Energy and Climate Change
DfT	Department for Transport
EA	Environment Agency
FRA	Flood Risk Assessment
GMITA	Greater Manchester Integrated Transport Authority
GP	General Practitioner
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HRA	Habitats Regulations Assessment
IA	Integrated Assessments
ICT	Information Communication and Technology
LEZ	Low Emissions Zone
LAIP	Local Area Implementation Plan
LNR	Local Nature Reserve
LTP	Local Transport Plan
NATA	New Approach to Appraisal
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
PTEG	Passenger Transport Executive Group
RoW	Right of Way
RoWIP	Rights of Way Improvement Plan
PM <sub>10</sub>	Particulate matter (10µm diameter)
PRoW	Public Right of Way
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEMMMS	South East Manchester Multi-Modal Study
SMART	Specific Measurable Achievable Relevant Time-bound
SO <sub>2</sub>	Sulphur Dioxide
SPA	Special Protection Area

SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System
WHO	World Health Organisation

# EXECUTIVE SUMMARY

The Greater Manchester Integrated Transport Authority, in partnership with the ten Local Authorities, is currently producing a third, new Local Transport Plan (LTP3). This document will set out clear priorities for local transport spending and services, with a view to helping residents, businesses, commuters and visitors get to where they need to go to in a manner that works best for them. An Integrated Assessment has been undertaken in order to assess the impacts of the LTP's draft long-term strategy on the environment, human health and equality and diversity issues to help to inform the next stages of its development.

The assessment has considered the effects of the measures proposed in the draft LTP3 strategy and the high-level effects of four alternative strategy options. The assessment of options was used to help steer the development of the preferred draft strategy. The results of the assessment of the preferred draft strategy are summarised below.

The strategy includes a number of measures to reduce the amount of road traffic and car usage in order to reduce air (including carbon) and noise emissions. Overall, modelling has indicated that the specific major physical infrastructure proposals can help improve local air quality along certain routes, though on their own are unlikely to significantly affect emissions overall across the county or in the Air Quality Management Area as a whole. However, the draft strategy proposes numerous further policy measures which relate to encouraging behavioural changes that move people away from using cars which have been successful elsewhere. Individually these are not expected to make a significant difference county-wide although collectively are expected to contribute to reducing emissions along the key radial routes into the regional centre, other key centres and through some of the most deprived neighbourhoods. Given the high-level nature of the strategy and the uncertainty of future funding levels it is difficult to quantify the exact, likely success of these measures and hence the likelihood of meeting these targets for air and carbon dioxide emissions. Further modelling of the policy measures should be undertaken as the details of the strategy are developed alongside a review of the outputs of the current dispersion modelling process. It is also recommended that future regular monitoring of this will be essential.

The strategy identifies the need to control and manage noise levels from transport and references the role of Defra's Noise Action Plans and the further work required on these by Local Authorities. The proposals to increase rail capacity as outlined in the Northern Hub strategy are likely to increase rail movements in areas already suffering from rail noise. However, it is uncertain whether the level of increase will be significant in terms of noise annoyance. Overall, modelling indicates that there is a risk of perceptible noise increases and decreases to receptors adjacent to many of the physical infrastructure schemes proposed. Hence it is recommended that mitigation measures be considered during detailed design stages, as per GMPTE's standard practice on all the schemes which it promotes. The other policy measures in the strategy have the potential to benefit local noise reduction through a number of cumulative measures, whilst it is not currently possible to quantify the level of reduction; it is recommended that the design development stages focus on realising this potential.

Given the high-level nature of the draft strategy it is not currently possible to quantify exactly its effects upon biodiversity and ecological features, however on the basis of the information available at this stage, it is not considered likely that the policy measures currently identified in the strategy will have a significant biodiversity/ecological impact. Whilst the physical infrastructure changes currently being proposed may result in effects, many are unlikely to be significant following the implementation of mitigation at the local level. Nevertheless, some schemes are anticipated to affect some locally important ecological sites which we recommend be subject to further investigation with the aim of mitigating adverse effects. Opportunities should be sought to enhance the green infrastructure network to achieve benefits in terms of wildlife connectivity. Some proposed schemes are at an early stage of development and it will be important to choose options and designs which, as part of an overall package of interventions, minimise adverse effects upon

ecology and the wider environment. The development of roads and other physical infrastructure can give rise to effects that may change the physical character of the landscape and townscape. Noise and light arising from transport related developments can also give rise to changes in landscape character and tranquillity. New station and bus interchange developments, such as those proposed in Bolton, Altrincham, Rochdale and Wythenshawe, have the potential to improve the townscape through high quality design, and potentially stimulate further changes in the public realm and to neighbouring sites. Simultaneously however, there is a risk that other physical infrastructure proposals, notably some of the major road schemes might result in localised adverse impacts on character and views. It is therefore recommended that the detailed design stages for these schemes focus on mitigating these potential impacts.

The impacts of the strategy upon heritage assets are expected to be minimal and limited to minor effects associated with some of the major infrastructure proposals. Any proposals to reintroduce services to the East Lancashire heritage railway have potential to result in some adverse effects, although this study is still at an early investigation stage and, we recommend looking at mitigation measures as it progresses. Once again it is recognised that this is standard practice on all the schemes which GMPTE promotes.

Development of transport infrastructure can cause surface water features to be modified, including the diversion and culverting of watercourses. Pollution risks to surface and groundwaters may be increased both during construction and operation. However, it is not envisaged that the strategy would result in any significant impacts overall as localised impacts should be minimised through appropriate environmental assessment and management measures. The strategy recognises the need to reduce flood risk on the highway network, and the opportunity afforded during highway maintenance works to remove constraints on water flows and restore natural flow patterns. The creation of new walking / cycling routes may provide opportunities to introduce Sustainable Drainage Systems and soft landscaping.

It is considered that there is a potential for a number of the strategy components to deliver significant health improvements, if implemented collectively and in support of a wider set of initiatives that are being undertaken across Greater Manchester to tackle some of the significant health inequalities that exist. Key benefits of the strategy include the potential to deliver accessibility improvements and the long-term health gains that could be achieved through the clear commitment to increase levels of walking and cycling. In the long-term the measures proposed to improve the rail, bus and Metrolink networks could make walking and cycling more desirable transport options for the Greater Manchester population by helping to encourage a modal shift.

The strategy highlights measures to address a range of key user issues from ticketing in relation to affordability, to the expansion of the Metrolink and new interchanges in relation to availability with measures to develop accessibility at, for example, bus stops, and measure to improve safety and acceptability. The potential of these measures for positive impact on the population as a whole is clear and they support the objective of the strategy to ensure that the transport network supports the Greater Manchester economy so that it can improve the life chances of residents and the success of business. However, the strategy could be strengthened in its approach to ensuring the needs of all key sections of the community are met. The assessed impact on population is positive in many areas but there is a need to build on the recommendations made in the assessment to ensure inclusion for all sections of the population and the delivery of positive outcomes, in particular disabled people, black, Asian, minority ethnic people, women and older people all of whom are over represented in low income households. A further emphasis upon the role of the strategy for rural areas is also recommended.

From an economic perspective the strategy, in the long-term has the potential to support the future development of the city region's economy. The Manchester Independent Economic Review highlighted the importance of the transport network in supporting the development of the economy

and a number of the measures in the LTP3 are consistent with the recommendations of the review and also complement the objectives of the Greater Manchester Strategy.

Throughout the Integrated Assessment a number of recommendations have been made to enhance the strategy and/or avoid adverse effects. The next stage of the process will be for the Integrated Transport Authority and Association of Greater Manchester Authorities to review the extent to which these recommendations can be accommodated (taking into account funding limitations) alongside feedback received from this consultation. Following adoption of the strategy, the effects identified will be subject to monitoring alongside the monitoring indicators identified for the LTP3 itself.



# 1 INTRODUCTION

The Greater Manchester Integrated Transport Authority (GMITA), in partnership with the ten Local Authorities is producing a third, new Local Transport Plan (LTP3) which will be the main document for setting out the detail of how transport will be better managed and delivered in Greater Manchester.

The LTP3 will comprise a long-term strategy for transport in Greater Manchester (10 to 15 years) which will be accompanied by ten short-term (four year) Local Area Implementation Plans (one per Local Authority).

GMITA have commissioned this Integrated Assessment (IA) which has assessed the impacts of the long-term strategy on the environment, human health and equality and diversity issues. The IA has been designed to comply with the requirements of the European Union Strategic Environmental Assessment (SEA) Directive.

This Non-Technical Summary outlines the results of the IA process.

# 2 BACKGROUND AND PURPOSE OF THE LTP3

The LTP3 seeks to provide a clear set of investment priorities and supporting activities that have been designed to support the maximum potential growth in Greater Manchester, whilst also being sensitive to the need for lower carbon travel patterns and the importance of addressing the economic and social costs of deprivation within the community.

It sets out the transport policy and the key investment schemes anticipated over the LTP3 period. The context for the LTP3 is set by the Greater Manchester Strategy which contains the following vision:

*By 2020, the Manchester City Region will have pioneered a new model for sustainable economic growth based around a more connected, talented and greener city region where the prosperity secured is enjoyed by the many and not the few.*

*By 2015 Greater Manchester has established itself as a world leader transferring to a low carbon economy.*

The following objectives have been set for the LTP3:

- To ensure that the transport network supports the Greater Manchester **economy** to improve the life chances of residents and the success of business
- To ensure that **carbon** emissions from transport are reduced in line with UK Government targets, to minimise the impact of **climate change**
- To minimise the adverse impact of transport on **public health** and on **community safety**
- To ensure that the design and maintenance of the transport network and provision of services supports **sustainable neighbourhoods and public spaces**
- To maximise **value for money** in the provision and maintenance of transport infrastructure and services

The LTP3 will ultimately comprise a long-term overarching strategy, ten Local Area Implementation Plans (LAIPs) which will detail how the strategy will be implemented in

each of the ten Greater Manchester Authorities and a series of supporting technical documents.

The focus of this IA is the long-term strategy, from here referred to as, 'the strategy'. The LAIPs will also be subject to the IA process in due course. The strategy outlines the overarching transport policy and key investment schemes proposed to deliver the LTP3 objectives. This comprises proposals for the following areas:

- Better buses for Greater Manchester
- Delivering the Metrolink vision
- A rail system for our future economy
- Fares, tickets and information about sustainable travel
- A new future for walking and cycling
- Managing our highways
- Securing healthy and safe travel options
- A greener transport system

The assessment has been based around the proposals under each of these headings.

### 3 THE INTEGRATED ASSESSMENTS PROCESS

The LTP Guidance published by the Department for Transport (DfT) states that all LTP3s should be subject to a combined process of SEA, Health Impact Assessment (HIA) and Equalities Impact Assessment (EqIA). The combined process would be known as Integrated Assessment and should follow the procedural stages of the SEA process. The LTP3 should also be subject to Habitats Regulations Assessment (HRA). HRA has been undertaken on the strategy and is reported separately.

The purpose of the IA is to ensure that the impacts of strategy and its alternatives upon the environment, human health and equality and diversity issues are assessed prior to adoption so that adverse effects can be avoided and the principles of sustainable development can be incorporated into the strategy as it develops. The SEA element is a legal requirement.

Table 3-1 outlines the stages A-E of the IA process and it illustrates the equivalent stages in the strategy process together with the key consultation points undertaken. The IA has been undertaken throughout the development of the strategy:

Table 3-1 Stages in the IA Process

Timescales	LTP3 Strategy Process	IA Process	Consultation
March– May 2010	Determining the scope of the LTP3.	A) Setting the context, establishing the baseline, determining the scope and identifying options. Prepare Scoping Report	Scoping Report issued for 5 week consultation April– May 2010. SEA options development workshop. SEA scoping workshop.
May – September 2010	Generating alternatives for the LTP3 Strategy, appraising options and predicting effects. Selecting preferred options for the plan. Production of a draft LTP3 Strategy.	B) Developing, refining and appraising strategic alternatives. Appraising preferred options and propose mitigation/ enhancement. C) Production of the IA Report.	EqIA stakeholder meetings. HIA workshop.
October December 2010	Consulting on the Draft LTP3 Further development of LTP strategy	D) Consultation on the IA Report and revisions following any significant changes.	Consultation on Draft LTP (October – December 2010) and IA Report. EqIA stakeholder meetings. HRA meeting to discuss the outcomes of the HRA and the draft LTP3.
January 2011– March 2011	Approval Processes Production of final LTP3 Strategy. Adoption of LTP3 Strategy.	Production of SEA Statement	
Concurrent with finalisation of Strategy	Development of LTP3 LAIPs for each of the 10 Greater Manchester Authorities	IA to be undertaken on each of the LAIPs to form annexes to the IA Report.	
Following adoption	Reviewing LTP3 implementation.	E) Monitoring the significant effects of the LTP3.	

The stages A-E are explained further below.

### 3.1 Stage A: The Scope of the IA

It is essential to understand the scope of the assessment to ensure that all reading the IA and the LTP3 strategy understand what the assessment is seeking to achieve and what it is not intended to address. The scope of the IA was established in the Scoping Report which was consulted upon with the statutory SEA consultation bodies and Greater Manchester health and equalities representatives in May 2010.

#### 3.1.1 Geographic Scope of the IA

The strategy covers all of Greater Manchester. As such, the IA also covers this area and gives consideration to neighbouring areas where relevant.

#### 3.1.2 Temporal Scope of the IA

The strategy covers the period up to 2020. The IA assesses impacts up to this period and beyond where possible. Making predictions beyond 10 years into the future increases the levels of uncertainty in the prediction of effects.

### 3.1.3 Topics Covered in the IA

The topics covered in the IA were agreed during the scoping consultation. They are listed in Table 3-2 and link to both the topics suggested in the SEA Directive and the sub-objectives listed in the DfT's New Approach to Appraisal (NATA) transport appraisal process.

**Table 3-2** Topics covered in the IA

Integrated Assessments Topic
Air Quality
Noise
Climatic Factors
Biodiversity, Flora and Fauna
Cultural Heritage
Water
Landscape and Townscape
Human Health
Population, Economy and Diversity

It should be noted that for purposes of an IA no one topic is more or less important than another. However, transport authorities are required to make trade-offs across impacts to optimise the collective benefit in terms of impact on both local and national priorities. When deciding upon priorities for spending there will always be limited resources of a level below that required to maximise impact across all policy areas. Many of the topics overlap and are interrelated.

For each topic, data has been collated regarding the conditions for that topic which are currently being experienced in Greater Manchester. This enabled the identification of existing issues and problems relating to that topic. An overview of this data is presented in section 4. Further to this a review of relevant plans, programmes and environmental protection objectives has been undertaken to better understand the context for each topic with respect to transport in Greater Manchester and feed into the development of the assessment process.

## 3.2 Stage B: Developing and refining LTP alternatives and appraising the effects

### 3.2.1 Treatment of Alternatives

In line with the requirements of the SEA Directive, this IA has assessed the likely significant effects of reasonable alternatives to the strategy, taking into account its objectives and geographical scope.

A number of alternative strategic options were identified in the Scoping Report which have been further developed following the scoping consultation. Further detail is provided in section 5 of this Non-Technical Summary of how the alternatives were identified and assessed.

## 3.2.2 The IA Framework and its Application

The strategy has been assessed against a set of 11 IA Objectives. A set of guide questions provides more detailed guidance about the issues that need to be considered as part of the assessment process. These are collectively known as the IA Framework. The IA Objectives are listed in Table 3-3.

Table 3-3 IA Framework

Integrated Assessment Objectives	Guide Questions
1) To avoid deterioration in air quality as a result of transport emissions and to create improvements.	<p>Will the LTP result in a change in air quality?            Will the LTP help to meet national air quality standards in all areas?            Will the LTP result in increased emissions in Air Quality Management Areas (AQMAs)?            Will the LTP result in changes in air quality and atmospheric deposition in areas of sensitive biological habitat?            Will the LTP result in changes in air quality in sensitive areas of population and for the most vulnerable groups of society?            Will the LTP result in changes in air quality that will support rather than further disable key sections of the community?</p>
2) To avoid worsening of environmental noise as a result of transport and to create improvements.	<p>Will the LTP increase or reduce the levels of annoyance from noise from transport, particularly in those areas suffering high levels of deprivation?            Will the LTP reduce or increase the levels of transport related noise in the areas of highest priority.</p>
3) To reduce carbon dioxide (CO <sub>2</sub> ) emissions from transport.	<p>Will the LTP result in CO<sub>2</sub> emissions being reduced from the transport sector throughout the life of the plan and contribute to meeting national targets?            Will the LTP result in a modal shift away from road freight and private car usage towards public transport and lower carbon options?            Will the LTP effectively communicate with all sections of the community on a movement towards public transport?            Will the LTP help to both adapt to and mitigate the effects of climate change?            Will the LTP help reduce the need to travel?            Will the LTP help improve accessibility through integrated spatial planning?</p>
4) To avoid the deterioration of biodiversity as a result of transport and to create opportunities for enhancement.	<p>Will the LTP result in direct or indirect damage to designated sites of biodiversity or geodiversity importance or protected species, in particular sites and species of international importance?            Will the LTP work towards or against the achievement of Biodiversity Action Plan (BAP) targets?            Will the LTP result in direct physical loss of wildlife?            Will the LTP result in an increase in disturbance to sensitive habitats or species?            Will the LTP result in an increase in nitrogen deposition on sensitive habitats such as blanket bog?            Will the LTP result in the creation of opportunities for biodiversity to flourish, particularly in areas which were once degraded?            Will the LTP result in a strategic approach to the provision and planning of green infrastructure?</p>
5) To avoid damage to heritage assets and their settings and to create opportunities for enhancement.	<p>Will the LTP result in direct or indirect physical damage to designated historic sites such as listed buildings, scheduled monuments or historic parks and gardens?            Will the LTP cause an increase in pollution or vibration which could adversely affect historic assets?            Will the LTP result in noise, visual intrusion or severance which could affect the setting of heritage assets or spoil the historic and cultural associations of an area?            Will the LTP create opportunities to enhance the setting and enjoyment of historic assets?            Will the LTP develop transport options that support links to cultural sites for</p>

Integrated Assessment Objectives	Guide Questions
	all sections of the community?
6) To reduce the risk of pollution to the water environment and to avoid the risk of flooding.	<p>Will the LTP result in an increase or decrease in the risk of transport related pollution to surface and groundwater bodies?</p> <p>Will the LTP result in direct physical changes to watercourses or water bodies which would adversely affect their hydrology or geomorphology?</p> <p>Will the LTP result in a direct or indirect risk of flooding for transport users or local residents and businesses?</p>
7) To avoid the deterioration in quality of the region's landscapes and townscapes as a result of transport infrastructure and create opportunities for enhancement.	<p>Will the LTP result in new infrastructure which would adversely affect the character and views within the region's distinctive landscapes and townscapes, in particular sensitive areas such as National Parks, Conservation Areas, Historic Parks and Gardens, areas of open greenspace and areas of known landscape/townscape quality.</p> <p>Will the LTP promote high quality and sensitive design in all new transport developments which could enhance the landscape/townscape quality of an area, particularly in those areas of existing poor quality as well as in sensitive areas?</p> <p>Will the LTP result in indirect effects upon landscape and townscape as a result of a change in vehicle movements, traffic noise, light pollution and a loss of tranquillity?</p> <p>Will the LTP improve sustainable access to open space and quality natural environments for all sections of the community / those most at need?</p> <p>Will the LTP promote Rights of Way (RoW) and greenways?</p> <p>Will the LTP assist derelict/contaminated land being brought back into use?</p>
8) To contribute to the creation of vibrant, sustainable communities with easy access to the transport system for all.	<p>Will the LTP help to increase access to and usage of the public transport network for all?</p> <p>Will the LTP reduce or increase community severance?</p> <p>Will the LTP reduce levels of crowding and reliability/frequency of bus, train and Metrolink services?</p> <p>Will the LTP help to make public transport more affordable for people on low incomes?</p> <p>Will the LTP improve connections within the transport system, including e.g. cycle parking, public transport interchanges etc?</p> <p>Will the LTP support key sections of the community in accessing social networks and support the development of strong communities?</p>
9) To reduce levels of crime, fear of crime and antisocial behaviour on the transport system.	<p>Will the LTP promote clean, safe and well lit public transport facilities?</p> <p>Will the LTP encourage safe, well designed opportunities for walking and cycling, particularly in those areas which experience high levels of crime deprivation?</p> <p>Will the LTP reduce fear of crime and levels of anti-social behaviour on the public transport infrastructure?</p> <p>Will the LTP encourage clean and well maintained public transport infrastructure free from graffiti, litter and vandalism?</p> <p>Will the LTP improve safety for all sections of the community on the public transport infrastructure with a focus on people most at risk of hate crime?</p>
10) To contribute to the improvement of physical and mental health and wellbeing for all and reduce health inequalities.	<p>Will the LTP increase or reduce the levels and perceptions of safety and accident numbers on the transport system?</p> <p>Will the LTP increase or reduce the levels of annoyance from noise from transport, particularly in those areas suffering high levels of deprivation?</p> <p>Will the LTP increase or reduce levels of air pollution from transport, particularly in those areas suffering high levels of deprivation?</p> <p>Will the LTP encourage healthier lifestyles by promoting the use of walking, cycling and public transport and increase accessibility to open greenspace and sports facilities particularly for the most deprived communities and sections of the community whose access needs are often not catered for?</p> <p>Will the LTP improve or reduce accessibility to health care facilities, particularly for those who need the most health services e.g. the elderly, people with disabilities and those without cars?</p> <p>Will the LTP increase or reduce the use of streets for community purposes and promote greater levels of interaction and community spirit?</p>

Integrated Assessment Objectives	Guide Questions
	Will the LTP communicate effectively to all sections of the community in relation to road traffic safety?
11) To support economic growth across the sub-region and improve access to jobs for all.	<p>Will the LTP improve access to jobs, particularly for people who suffer income or employment deprivation?</p> <p>Will the LTP reduce journey times and improve accessibility for local businesses?</p> <p>Will the LTP help to make Greater Manchester a more attractive place for investment and to do business in?</p> <p>Will the LTP contribute towards the improved performance of local businesses and encourage economic growth?</p> <p>Will the LTP help to strengthen the role of the regional centre and complement links into and out of the sub-region?</p> <p>Will the LTP improve management of environmental, social and economic risks of climate change to infrastructure assets?</p>

The objectives are intended to be aspirational and reflect a desired direction of change, for example, the maintenance and improvement of biodiversity levels. The objectives provide a means of assessing the performance of the LTP3 in a consistent manner enabling its potential effects to be identified and mitigated where possible. The IA objectives establish beneficial social, economic or environmental outcomes which usually involves minimising detrimental effects and enhancing positive effects. As such, these objectives do not reflect the scope of additional funding to address them.

Integral to the assessment process is the development of mitigation measures that can be used to avoid, reduce or offset the potential adverse effects of the LTP3 strategy. Opportunities have also been sought to improve or enhance the LTP3 to benefit environmental and sustainability receptors. It is now up to the transport team to review the extent to which these recommendations can be taken on board (taking into account funding limitations) alongside feedback received from this consultation.

### 3.2.3 Appraisal of Cumulative, Secondary and Synergistic Effects

The SEA Directive requires that cumulative effects should be considered together with additive (synergistic) and secondary effects. Each topic chapter in the IA Report identifies the cumulative effects of the strategy proposals on the current conditions for that topic. Furthermore, it also considers the additive effects of the LTP3 strategy and other reasonably foreseeable plans and programmes upon the same groups of receptors.

## 3.3 Stage C: Preparing the IA Report

Stage C corresponds with the preparation of the IA Report and this Non Technical Summary. The IA Report presents the findings of the assessment to-date including the information collated during scoping, the results of the appraisal together with any mitigation measures.

## 3.4 Stage D: Consulting on the IA Report and the Draft LTP3

Stage D corresponds to the consultation on the IA Report and the Draft strategy. This will be a twelve week public consultation in which comments will be invited on both documents.

Following the close of the consultation period, GMITA will review the feedback and revise the strategy as appropriate. If significant amendments are made to the strategy, the IA may also need to be updated to reflect the appraisal of these amendments prior to the strategy finally being adopted.

### 3.5 Stage E: Monitoring the Significant Effects of Implementing the IA

The SEA Directive requires that the plan or programme is monitored to test the actual significant effects of implementing the plan against those predicted through the assessment. It, therefore, helps to ensure that any undesirable effects are identified and remedial action is implemented accordingly.

This will be undertaken following adoption of the LTP3.

## 4 KEY CHARACTERISTICS OF THE GREATER MANCHESTER ENVIRONMENT

In line with the requirements of the SEA Directive a review of data was undertaken to characterise the existing environment based around the topics identified above. This included identifying how trends in this data might change in the future in the absence of the LTP3 and what key problems and opportunities exist. A summary of the key findings is provided in Table 4-1.

Table 4-4 Summary of Key Characteristics of the existing environment by topic

Current baseline conditions in absence of LTP3	
■	Current conditions are not particularly problematic, or are problematic in only localised areas, or there is no agreed criterion for whether it is problematic
■	Current conditions are already problematic
Predicted future baseline conditions in absence of LTP3	
■	Future conditions are expected to be better than current
■	Future conditions are expected to be roughly the same as current, or some aspects are expected to get better and others worse
■	Future conditions are expected to be worse than current

Topic	Current Situation	Future Situation	Summary
Air Quality	■	■	The largest proportion of air pollution (in particular nitrogen dioxide (NO <sub>2</sub> )) in Greater Manchester arises from road traffic. All the Greater Manchester authorities have declared an AQMA, largely for NO <sub>2</sub> and PM <sub>10</sub> emissions. These primarily follow the motorway network. EMIGMA forecasted NO <sub>2</sub> and PM <sub>10</sub> mass emissions to fall between 2005 and 2010. The 2009 modelling predicts that despite the forecast growth in vehicle traffic (particularly along motorways), NO <sub>x</sub> emissions are expected to fall by about 20%

Topic	Current Situation	Future Situation	Summary
Noise			<p>between 2011 and 2026. However, PM<sub>10</sub> emissions are expected to increase. Note that these predictions do not take into account the suite of policy measures proposed under LTP3 which are expected to continue to contribute to reducing emissions.</p> <p>Noise is a significant issue in Greater Manchester. The main source of ambient noise is from transport, particularly road traffic. Greater Manchester experiences the highest levels of noise along the motorway network (notably the M60 and M62) with significant contributions from some major trunk roads (e.g. A56, A34, A6 and A664). The World Health Organisation (WHO) guidelines suggest that high levels of noise may have significant health effects upon communities in the vicinity of such major radial and orbital routes. The Noise Action Plan identifies that all ten districts should be investigated as a priority due to noise from roads amounting to over 14,000 dwellings. Five districts and over 500 dwellings should be investigated as a priority due to noise from railways. Aircraft noise is an issue in Stockport and, outside Greater Manchester in Macclesfield.</p> <p>The volumes of road, rail and air traffic are anticipated to increase in the future in line with past trends. It is therefore anticipated that noise levels and the potential for increases in noise annoyance will also increase, particularly along primary routes. The expansion of housing and commercial sites across Greater Manchester is also anticipated to bring more people closer to existing transport networks thereby further increasing the levels of noise exposure to the community. However, relatively large increases in traffic are required before increases in noise levels are noticeable so such increases are unlikely to be significant in many areas.</p>
Climatic Factors			<p>In Greater Manchester ground transport is a major source of CO<sub>2</sub> emissions with road transport contributing 33.8% of CO<sub>2</sub> emissions in 2006. EMIGMA modelling identifies that the largest sources of CO<sub>2</sub> emissions from road transport are from Salford and Manchester City Centre. The 2006 Greater Manchester Air Quality Action Plan predicted that transport carbon emissions would rise between 2006 and 2010. Since these predictions, the UK Low Carbon Transition Plan (2009) has made a number of UK-wide predictions based upon certain assumptions in the Department for Energy and Climate Change (DECC) Energy and Emissions Model which project CO<sub>2</sub> emissions to fall from the transport sector by 2020. The 2009 modelling forecasts CO<sub>2</sub> emissions from traffic in Greater Manchester to increase by 15% between 2011 and 2026.</p>
Biodiversity, Flora and Fauna			<p>Greater Manchester, although perceived as an urban area, has a wide and varied range of wildlife and natural habitats. There are four sites of European level importance (three Special Areas of Conservation (SAC) and one Special Protection Area (SPA)) and 21 Sites of Special Scientific Interest (SSSI). There are 52 Local Nature Reserves (LNRs) which are important for providing local people with opportunities to access nature. The Greater Manchester Biodiversity Action Plan (GM BAP) aims to provide an over-arching document for biodiversity across all ten districts. Greater Manchester also includes areas of ancient woodland, Community Forest and parts of the Peak District National Park.</p> <p>Key threats to biodiversity include physical habitat loss through development, air pollution and invasive species, notably as a result of climate change. Biological river quality is also improving. It is anticipated that these pressures will continue into the future and whilst regulatory regimes will continue to help the recovery of many species and habitats, the projected levels of anthropogenic growth and the impacts of climate change will continue to be a significant threat. Transport can negatively affect biodiversity through direct land-take and disturbance and through increased levels of noise and emissions to air. It can also provide benefits through new habitat creation and improved connectivity.</p>

Topic	Current Situation	Future Situation	Summary
Landscape and Townscape	■	■	<p>The landscape and townscape within Greater Manchester varies greatly between districts covering seven different regional landscape character areas and types covering both urban and rural features. The perceived quality of some landscapes and townscapes are valued more than others. The townscape character of the urban areas also varies greatly reflecting the long historical development of the conurbation. There is a mix of high density urban areas, suburbs, semi-rural and rural locations in Greater Manchester, but overwhelmingly the land use is urban. It has a focussed central business district, formed by Manchester city centre and the adjoining parts of Salford and Trafford, but each of the ten metropolitan districts also has at least one major town centre and outlying suburbs. The Peak District National Park lies on the fringes of the area to the east. Nine of the districts include Country Parks and Conservation Areas exist in all ten. All ten districts contain Green Flag parks. The majority of land between the main urban areas of each of the ten districts is designated as greenbelt. Greater Manchester has undergone and continues to undergo significant regeneration.</p> <p>In future years, development (including transport infrastructure, housing, commercial and industrial) will continue to modify the existing landscapes and townscapes of Greater Manchester and potentially put pressure on landscapes notably in rural areas. However, the continuation of regeneration initiatives and careful planning and assessment should help to ensure that the existing value and character of areas are maintained, and where possible enhanced.</p>
Cultural Heritage	■	■	<p>Greater Manchester has an important and diverse history which is reflected in a rich historic environment of archaeological sites, monuments and buildings, museum collections of national and international importance, historical archives, records and in particular the Historic Environment Record. The historic assets of Greater Manchester include: Prehistoric burial mounds and hillforts; Roman forts; Medieval townscapes and the Post-Medieval legacy of the region's industrial past. There are 38 Scheduled Monuments in Greater Manchester, located within nine of the districts. Greater Manchester is home to a large number of Conservation Areas and listed buildings. There are around 25-30 buildings at risk. Manchester City Centre is home to a high number of Listed Buildings largely due to the city's historical industrial past.</p> <p>Increased development and growth, together with redevelopment works, have the potential to adversely impact upon existing heritage features and historic landscapes and townscapes. Pollution, congestion and vibration from increased traffic growth can also adversely affect such features. However, the continuation of careful planning and assessment should seek to avoid this and potentially provide enhancements to, for example, setting.</p>
Water Quality Flooding	■ ■	■ ■	<p>The Greater Manchester water environment is highly varied, ranging from rivers to drains, and ponds and lakes. Water quality has improved significantly over the last two decades within the UK. There have also been significant improvements in river and canal water quality over the past 20 years within Greater Manchester, and the majority of rivers in the city are generally of average to good quality. Problems with water quality within Manchester's waterways occur as a result of the industrialised areas they flow through, with adverse impacts generated by effluent emissions and other water industry and industrial emissions, urban diffuse pollution (run-off from roads, buildings and the built environment), storm outflows, debris (both from littering/fly tipping and vegetation) and contaminated land.</p> <p>A number of areas are at risk of localised flooding within the Irwell and Upper Mersey catchments. Flooding from rivers and streams are the main sources of risk, notably where channel modifications have occurred although sewer flooding is also common as a result of limited drain capacity.</p>

Topic	Current Situation	Future Situation	Summary
			<p>Drinking water for Greater Manchester is supplied mainly from upland catchment areas in the north of England and Wales. However, there are some groundwater extractions and source protection zones exist.</p> <p>As road traffic continues to increase, there is a risk that the amount of pollutant entering the watercourses within Greater Manchester via surface water will continue to put pressure on water quality (including groundwater). It is likely that the ongoing effects of climate change will increase the frequency of storm events, where flooding, runoff and pollution may be issues.</p>
Human Health	■	■	<p>Whilst some districts (notably Trafford) exhibit above average levels of health, many districts exhibit poorer levels than the national and regional averages for a number of health determinants (life expectancy at birth, infant mortality, percentage population in good health). It is acknowledged that poor lifestyle behaviours are a major cause of poor health across Manchester and that there is a correlation with socio-economic deprivation.</p> <p>Incidence of key lifestyle related diseases such as cancer, coronary and respiratory diseases are all generally higher than national and regional averages. Current estimates indicate that the City of Manchester has 90,000 adults and 14,000 children that are obese in a total population of 464,000. This figure is projected to increase to 137,000 by 2015.</p> <p>The total number of transport related accidents and casualties in the area has fallen every year between 2000 and 2008. The number of child casualties, pedal cycle casualties and pedestrian casualties has also fallen. Published literature suggests that there is a social class gradient to accidents with more deprived areas suffering more accidents.</p> <p>Access to General Practitioners (GPs) is largely the same for all of the districts with people able to access more than one GP/health care centre within 15 minutes by either public transport, walking or cycling. However, there are greater differences between the authorities regarding access to hospitals by walking, cycling and public transport. Greater Manchester has an extensive rights of way network.</p> <p>A number of general (not necessarily transport related) initiatives are underway to try and deliver improvements in health and well-being and to reduce health inequalities. Whilst there have been improvements in average population health across Greater Manchester as acknowledged by the Greater Manchester Directors of Public Health, there remain significant spatial variations with some of the most deprived areas continue to suffer greater levels of health inequality. It is expected that such trends are likely to continue over the next few years as initiatives to tackle such issues are only likely to deliver significant benefits in the long-term.</p>
Population and Diversity	■	■ <sup>1</sup>	<p>Greater Manchester has a large and varied population being the principal centre of population within the North West and one of the UK's largest conurbations. The age structure is broadly consistent with UK and regional averages although the City of Manchester has a much higher proportion of 16-29 year olds. The population as a whole is ageing. Economic activity rates vary greatly between the districts but are on the whole reflective of Greater Manchester's role as a regional employment centre. Levels of socio-economic deprivation also vary greatly between the districts with</p>

<sup>1</sup> NB measure of 'problematic' refers to the high level of transport needs in Greater Manchester and the high levels of inequality. The projection refers to needs increasing in the future for example as a result of an ageing and growing population.

Topic	Current Situation	Future Situation	Summary
			<p>Trafford and Stockport showing on average lower levels of deprivation than other districts and Manchester and Salford being some of the most deprived nationally.</p> <p>The percentage of working age population with disabilities varies across Greater Manchester from around 16% in Trafford to 21% in Bury. This has significant implications for transport. The percentage of people with long-term limiting illnesses is predicted to increase.</p> <p>Greater Manchester is the most ethnically diverse part of the North West, with around 11% of the population from black, Asian, minority, ethnic (BAME) groups, focuses mainly in the Manchester Local Authority area. The BAME population is generally younger than the population as a whole and is growing rapidly.</p> <p>The review of the baseline and future projections within key data sources indicate that there will be an ageing population across Greater Manchester which will present specific challenges for the transport network. There is also a possibility that the percentage of the population with mobility difficulties and in need of support and care will increase which is linked to the rise in the average age of the population.</p> <p>Population projections also indicate that there is a growing BAME population across all of the Local Authorities in Greater Manchester. In relation to the other equality groups including gay, lesbian and bisexual, people going through gender transition and religion and belief there is insufficient baseline data available at this stage to accurately predict how the baseline conditions are likely to evolve.</p>

## 5 TREATMENT OF ALTERNATIVES

### 5.1 Identification and Development of Reasonable Alternatives

The IA process has proposed a range of alternatives at various times during the development of the LTP3. A series of strategic alternatives were identified in the IA Scoping Report and have since been developed further. Some of the options were merged and a revised set of assumptions were developed.

The following revised set of reasonable alternative options were agreed to be subject to the IA:

- Business as usual scenario
- A strategy in which the primary focus is to maximise accessibility to the regional centre and other key centres
- A strategy in which the primary focus is on transport investment to, from and in areas of multiple deprivation
- A strategy that looks to prioritise delivery of a low carbon and health transport strategies

An assessment of these alternatives through the IA has been undertaken and the results are summarised in table 5-1. It should be noted that the assessment of these options has tried to focus on the key differences between them in order to benefit the development of the preferred option. In reality, the options are, in many ways very

similar and only subtle differences emerged. Cross cutting elements of each option are likely to be relevant to a preferred option.

**Table 5-1 Summary of options assessment**

Strategy Option	Summary of effects
Business as usual scenario	Whilst this option offers some benefits, a continuation of LTP2 policies, in isolation is not considered an appropriate option in view of the assessment results. Whilst the LTP2 Progress Report demonstrates that some good progress has been made in a number of areas, there remain some challenging issues that need to be addressed if the transport network of Greater Manchester is to provide the support necessary to deliver wide-ranging economic benefits and the necessary support to the population of Greater Manchester to enable a decrease in the gap between the most and least able. The air quality, carbon and noise impacts of this option are more difficult to predict in the absence of specific traffic modelling results but it is predicted that further interventions are needed to enable these issues to be tackled and associated benefits for health and well-being delivered.
A strategy in which the primary focus is to maximise accessibility to the regional centre and other key centres	There are a number of potential benefits associated with this option through its commitment to improving reliability, reducing congestion and improving accessibility which could benefit the Greater Manchester economy in the long-term. This option is also likely to offer greater air quality and carbon reduction benefits compared to the Business as Usual Scenario, although these predicted benefits cannot currently be quantified. There could also be some indirect health and well-being benefits if the strategy helps to reduce congestion and makes options such as walking and cycling more desirable.
A strategy in which the primary focus is on transport investment to, from and in areas of multiple deprivation	Whilst this option could potentially benefit a number of the more deprived communities across Greater Manchester, it is viewed as a slightly unbalanced option that may not lead to the most appropriate outcomes across Greater Manchester. There are a number of transport problems across Greater Manchester that result in environmental, social, economic and health impacts outside of the deprived communities and they would not necessarily be addressed through this option. However, it is clear that in the case of air quality, many of the worst performing areas for air quality also correlate with the areas of highest multiple deprivation so it is difficult to separate the positive effects on both air and the most vulnerable parts of the community in this option.
A strategy that looks to prioritise delivery of a low carbon and health transport strategies	This option offers a number of benefits and is potentially quite a significant change in the way transport issues are tackled in Greater Manchester through a far stronger commitment to the delivery of active travel measures. If successful, these measures could provide wide-ranging environmental, social, economic, health and equality benefits. However, the measures would need to be implemented in conjunction with crime and safety initiatives and in close collaboration with community groups to ensure that the needs of the population are met.

Greater Manchester has not chosen one of the specific strategic alternatives as the preferred strategy, but instead is proposing a strategy that contains elements of all four strategic elements, so as to reflect the complex reality of the needs of a modern economic area with multiple centres. This approach also reflects the reality of the need to deliver a strategy against what will always be limited resources. Initial thoughts on the strategy have been modified following the alternative strategy process and associated comments received during the scoping report consultation. The LTP3 objectives have been formulated to incorporate all the desirable elements of the four strategy options.

The key themes of the preferred LTP3 strategy have been designed to take on elements of all the strategic options. These elements are economic growth, environmental sustainability, health and wellbeing, and value for money. In particular, the preferred strategy has included a much greater emphasis on active travel and the health benefits that this can bring. The strategy hence includes a network of safe cycle routes in support of greatly increased levels of cycling across Greater Manchester, as well as improved access to health facilities.

## 6 RESULTS OF THE TOPIC-BASED ASSESSMENTS AND MITIGATION

### 6.1 Areas for Considerations

Throughout the assessment of the draft strategy, a number of general observations and recommendations for further LTP3 development have been made in addition to those detailed in the following topic-based sections. In summary, we believe that the current outline strategy could be strengthened by the adoption of the following;

- The strategy would benefit from the inclusion of a strategic map which illustrates the proposals visually.
- The strategy could make greater reference to the role of monitoring and explain how the development of the monitoring indicators is taking place and when it will be made available for comment.
- The strategy could include a specific section on environmental protection and enhancement within the transport network. This could incorporate a number of the recommendations proposed in the following sections and would make a clearer commitment to delivering sustainability benefits and high standards of environmental management through the creation of new infrastructure.
- Similarly, the section could identify more specifically a section on equality and diversity and how the strategy will aim to meet the transport needs of all sectors of society within the county. Again, the recommendations of some of the following sections would provide a basis for this.
- The strategy mentions little regarding rural communities. It is recommended that the principles of rural proofing are incorporated into the strategy.
- Specific recommendations arising from the HRA Report should also be considered with respect to the protection of sites of European nature conservation importance.

### 6.2 Air Quality

Air Quality is linked to health problems particularly in the young, elderly and those suffering with existing health conditions. Road traffic emissions contain a range of pollutants and are a significant source of emissions to air in Greater Manchester, notably oxides of nitrogen (NO<sub>x</sub>) and particulate matter (PM<sub>10</sub>). Air pollution can also directly affect vegetation. Many of the major routes into and around Greater Manchester are designated as AQMA for their high levels of emissions and many of these also correspond with areas of population which experience high levels of deprivation. Improving air quality and meeting European Union emissions targets is a key aim of the strategy.

The strategy includes a number of measures to reduce the amount of road traffic and car usage in order to reduce emissions. These include measures to make public transport more attractive and reliable and have a greater coverage, notably buses, the Metrolink and rail systems and though improved fares and ticketing. Buses contribute 9% of NO<sub>x</sub> emissions in Greater Manchester and more along the main congested routes such as those within the AQMA. Phases 1 and 2 of the Metrolink system were shown to be successful in reducing car journeys and emissions. Consequently the measures proposed are expected to have a positive benefit on reducing emissions, particularly along the key radial routes into the regional centre including within the AQMA, however the extent of this cannot be quantified until the final strategy of deliverables has been developed in full in the absence of clarity on the future regime for delivering such initiatives but hold potential overall.

Proposals to replace the bus fleet with vehicles with cleaner engines and the promotion of eco-driving techniques are yet to be developed in full in the absence of clarity on the future regime for delivering such initiatives but hold potential to have a more significant benefit. Park and ride sites are also promoted although the exact locations have yet to be confirmed. These have potential to contribute to reducing car journeys into the regional and district centres as part of other measures although the success of such measures overall is uncertain, not least as emissions adjacent to the sites may also increase.

60% of commuter traffic in centres outside of Manchester City is by car. The strategy proposes a number of traffic smoothing measures which may have cumulative benefits on reducing emissions overall. The benefits of hard shoulder running on the motorway system are less certain. The proposals to route Heavy Goods Vehicles (HGVs) away from district centres is also a positive measure as HGVs are a significant source of local air pollution. A number of road schemes are also proposed including the South East Manchester Multi-Modal Study (SEMMMS) and Wigan Inner Relief Route. These schemes are expected to improve emissions on some of the existing key routes but lead to increases in areas adjacent to the new roads.

The strategy also places a large emphasis on the role of walking and cycling as an alternative to car use for local trips. If an aspirational target of ensuring 25% of commuter trips below five miles are undertaken by bicycle is achieved, then this could result in savings of 1.5% in NO<sub>x</sub> emissions and 2.2% in PM<sub>10</sub>. Other positive measures include the development of an Air Quality Action Plan, the promotion of electric vehicles, eco-driving techniques and the encouragement of water-borne and rail freight. The uptake of electric vehicles is likely to benefit emissions but only in the longer term as attitudes change towards this. Rail and water-borne freight would also be helpful in reducing HGVs in congested district centres.

Overall, modelling has indicated that the specific key investment schemes (e.g. the major physical infrastructure proposals), whilst they may result in localised air quality benefits along certain routes, are unlikely to significantly affect emissions overall across the county or in the AQMA as a whole. There are numerous further policy measures proposed which relate to behavioural changes to encourage people away from using cars. It has not been possible to model these measures although this is recommended. Individually these are not expected to make a significant difference although collectively are expected to contribute to reducing emissions along the key radial routes into the regional centre. It is difficult to quantify the exact, likely success of these measures.

As the strategy develops in the coming months, key recommendations for consideration are summarised below:

- Targeting and accelerating renewal of buses with cleaner engine types should be made as a key measure to reduce emissions.
- Promotion of retrofitting technology for emissions abatement on older buses vehicles and for larger operators.
- In support of the above options, further investigation into the use of traffic regulation orders, such as Low Emission Zones (LEZs), or vehicle restricted areas for buses.
- Ensuring Safe and Fuel Efficient Driving techniques are appropriately targeted including marketing towards private car drivers.
- Strict targets should be set for walking and cycling delivery and outcomes which should be monitored.
- A greater emphasis upon targeting walking and cycling measures to specific geographic areas should be included, notably to connect residential areas and key employment centres.
- Promotion of cycle training for adults and school children
- This should also encourage improved, secure cycle facilities at places of work and appropriate green travel planning for businesses.
- Specific reference should be given to greenways and quiet lanes.
- Specific reference should be made to the role of Rights of Way Improvement Plans (RoWIPS) and the need to integrate these into the wider walking and cycling network.
- The feasibility of further measures should be investigated which discourage single occupancy vehicles at peak times.
- Further investigations should be undertaken into the role of limiting cars altogether on certain routes into the regional centre at certain times.
- Where major schemes are currently at the options development stage, greater emphasis should be placed on those options which would benefit emissions reduction strategies.

## 6.3 Noise

Transport is a significant source of noise with road, rail and aircraft all contributing to its production. Noise is not only a disturbance but also poses a threat to human health and wildlife movements. Relatively large changes in traffic flows are required to result in perceptible changes in noise exposure. Elevated noise levels in Greater Manchester correspond with the road network and rail routes. Some of the highest noise levels exist in district centres and adjacent to residential areas suffering high levels of deprivation.

The strategy identifies the need to control and manage noise levels from transport and references the role of Defra's Noise Action Plans and the further work required on these by Local Authorities. The Noise Action plans identify that all of the ten Local Authorities include priority areas for action with respect to road noise.

The proposals to encourage a shift away from car travel (for example the bus, Metrolink, fares and walking and cycling proposals) proposed in the strategy are likely to benefit noise reductions cumulatively although it is uncertain whether the benefits would be significant. The new Metrolink lines may result in localised increases in noise although a number of measures are in place to minimise noise emissions. Park and

ride schemes may also contribute to reducing road traffic although noise levels may increase adjacent to car parks at peak times.

The proposals to increase rail capacity as outlined in the Northern Hub strategy are likely to increase rail movements in areas already suffering from rail noise. However, it is uncertain whether the level of increase will be significant in terms of noise annoyance. Proposals to increase services along the East Lancashire and West Rochdale heritage line may also result in localised increases although this study is still at the investigation stage.

The Port of Salford proposals may also result in localised increases in noise levels which should be fully assessed and minimised at the planning and design stage.

The walking and cycling proposals may result in localised benefits, but only in areas where traffic movements are significantly reduced.

Proposals to explore HGV bans and LEZs may also result in localised noise benefits if targeted in the areas most at need. The strategy also identifies the role of Transport Asset Management Plans in reducing noise through the implementation of, for example, low noise road surfacing following maintenance. The SEMMMS road scheme has been assessed as slight adverse overall for noise although preferred options have not been confirmed for the Wigan Inner Relief Route and Longdendale study to be able to determine the likely noise effects. It should be noted that the Longdendale study is adjacent to a number of ecological and landscape designations which may be affected by significant noise increases.

The promotion of electric vehicles is positive as these are significantly quieter than conventional vehicles although benefits are expected in the long-term only when significant uptake is more likely.

Overall, modelling indicates that there may be perceptible increases and decreases to receptors adjacent to many of the physical infrastructure schemes proposed. The other policy measures in the strategy may help to benefit local noise reduction through a number of cumulative measures although it is not certain whether this would be significant.

Many of the areas for consideration as the document moves forward are consistent with those identified above under Air Quality and have not been repeated here. Further key recommendations are summarised below:

- Further acceleration of a renewal of buses with quieter, modern engines technologies.
- Ensuring appropriate environmental management practices are employed on all construction projects to minimise local construction noise issues.
- Ensuring that all bus station and interchange proposals, especially those in Important and First Priority Areas as identified in the Defra Noise Action Plan give special attention to providing noise attenuation measures as part of their design.
- It will be important for ongoing Metrolink noise surveys to continue and feed into the design of new infrastructure to help reduce noise outputs in the future.
- Uptake of advice from the Noise Action Plan as it is reviewed every five years
- The relevant rail and highways authorities will be asked to examine initially the Important Areas containing First Priority Locations and in due course the other Important Areas and form a view about what measures, if any, might be taken in

order to assist the management of environmental noise in the context of Government policy on sustainable development.

- It is recommended that the Port of Salford proposals also include appraisal in terms of a full range of other environmental issues, including noise and the indirect effects of noise from rail movements in the surrounding area.
- Walking and cycling measures should be targeted towards Important and First Priority Areas identified in Defra's Noise Action Plan.
- The strategy could consider the development of Quiet Lanes as part of pedestrian priority routes.
- This could also go further by placing an onus on the forthcoming LAIPs to use the outcomes of the Noise Action Plan and emerging detailed action plans to further guide the development of policy and proposals in those specific areas with noise reduction as a priority.

## 6.4 Climatic Factors

Transport is a significant contributor to the United Kingdom's atmospheric emissions, accounting for approximately a quarter of the UK's domestic emissions of CO<sub>2</sub> – one of the main greenhouse gases contributing to climate change. The majority of these emissions arose from road transport.

In developing a genuinely low-carbon economy, a considerable proportion of the carbon savings can be delivered by reformed approaches to spatial planning that reduce the need to travel and improve opportunities to use public transport and active travel modes. The LTP3 strategy recognises the challenge, and lends support for these aims in accordance with the Government's Low Carbon Transition Plan. Although the strategy on its own cannot deliver carbon savings in this respect, it supports the wider objective.

CO<sub>2</sub> emissions for the UK's roads increased by 11% between 1990 and 2007 and therefore it is very important to find lower carbon alternatives to conventional forms of travel. In many ways the proposals discussed above under air quality are expected to help achieve this, notably through the focus on promoting the attractiveness of public transport over the private car, especially low-carbon alternatives such as Metrolink. The replacement of the bus fleet with cleaner, low carbon engines is seen as a potentially very influential method of reducing CO<sub>2</sub> emissions. Phases 1 and 2 of the Metrolink were successful in reducing CO<sub>2</sub> emissions and the strategy proposals for extensions are expected to also benefit emissions.

The electrification of the Manchester to Liverpool railway via Newton-le-Willows is also beneficial as it would remove the use of diesel engine trains along that route. The strategy's emphasis on walking and cycling is also likely to be beneficial to making carbon savings. If the aspirational target of ensuring 25% of commuter trips (by car) below five miles are undertaken by bicycle is achieved, then this could result in savings of 1.8% in CO<sub>2</sub> by 2026.

Measures to smooth the flow of road traffic are also expected to make a positive contribution and the creation of the new Traffic Control Centre should assist this. The carbon benefits of the managed motorways plan are less certain at present. The SEMMMS road scheme is predicted to result in a small increase in CO<sub>2</sub> emissions whilst the other main road schemes proposed are expected to have neutral to minor positive effects.

The proposals under, 'securing healthy and safe travel options' to reduce vehicle speeds in some areas may also benefit fuel efficiency and hence carbon savings. It is recommended that these proposals are taken forward further during LTP3 preparation

The proposals to encourage electric vehicles are also seen as positive in the longer term. Studies have indicated that carbon savings of 30% or more could be achieved through the role-out of enhanced vehicle fuel technologies such as this.

Overall, modelling has indicated that, as with air quality, the specific key investment schemes are unlikely to significantly affect carbon emissions overall across the county. However, the successful and rigorous pursuit of other policy measures in the strategy focussed around behavioural change are expected to result in cumulative benefits. It is difficult to quantify the exact, likely success of these measures. The strategy identifies that, *"It will be possible, given adequate resources, for Greater Manchester to reduce carbon emission from transport by the required amount through a combination of energy efficiency, alternative fuels and modal shift"*. The suite of policy measures proposed is likely to make a positive contribution to achieving this goal. However, without further details of the extent of these measures (as affected by the availability of funding), it is not possible to confirm that this will be the case. The availability of funding is hence a key factor in the ability of Greater Manchester to meet these targets.

A number of potential areas of strategy development which are identified in the IA Report are consistent with those identified above under Air Quality and have not been repeated here. Further suggested areas of key consideration are summarised below:

- It will be important to promote sustainable design principles in the construction of the new interchange and station buildings, such as energy efficiency, on-site renewable energy generation and use and the use of low-carbon materials. This should follow emerging Government plans for zero-carbon public buildings. Electricity used in the network should be sourced from renewable sources wherever possible.
- Opportunities should be taken to optimise the carbon performance of Metrolink by investigating green energy tariffs, installing micro-renewable technology and using energy efficient lighting at stops and on the new generation of trams.
- Further support for school travel plans should be progressed as LTP3 preparation occurs.
- Greater Manchester could look to develop Cyclepoint facilities based on the model so successful in the Netherlands.
- Where key investment schemes are currently at the options development stage, those that help to reduce overall CO<sub>2</sub> emissions should be promoted.
- The strategy could make the link between speed limit enforcement and reducing CO<sub>2</sub> more clearly. Support for speed cameras and/or increased police patrols would help to deliver carbon savings as well as being of benefit for public safety and enforcing the legal speed limit.
- The strategy could indicate how the expansion and enhancement of Information Communication and Technology (ICT) networks could be accommodated and supported by the transport sector.

## 6.5 Biodiversity, Flora and Fauna

Transport has the potential to affect biodiversity in a number of ways e.g. through land take, habitat disturbance, increased emissions, light pollution and noise pollution.

Overall, it is unlikely that many of the policy measures identified in the strategy would have a significant effect upon biodiversity and ecological features. It is primarily the physical infrastructure changes which may result in effects although many are unlikely to be significant.

The LTP3 in respect of traffic management and the transport network (including the Metrolink extensions, rail, roads, buses, walking and cycling routes) would involve measures that may have implications for Greater Manchester's biodiversity resources, where they coincide with the proposed major schemes and associated policy. Transport routes and paths can sever the routes used by wildlife resulting in the fragmentation of habitats, causing implications for the viability of local populations. Where routes proposed for new roads, paths and Metrolink extensions coincide with areas of ecological importance there could be risks of damage or loss to habitats. Traffic noise, lighting and vehicle emissions can also give rise to problems for the local natural environment. Noise and light present risks of disruption where the construction of transport schemes or the upgrading of existing networks introduces them to areas that had previously been unlit or relatively tranquil. Vehicle emissions can present risks of contamination to the water environment, principally in the form of run-off from roads, which may have implications for both aquatic and terrestrial ecology.

None of the strategy's bus proposals are considered to significantly affect biodiversity and similarly the Metrolink proposals have been assessed as having neutral effects although some short-term construction impacts may be likely. The Chorlton to East Didsbury line follows a disused railway line which has since become a wildlife corridor. The proposals have been designed to minimise the removal of trees and follow a strict code of construction good practise with regard to wildlife. The Oldham to Rochdale line twice crosses the Rochdale Canal SAC although no significant impacts upon the SAC were identified following mitigation. The Chorlton to Manchester Airport link crosses two Sites of Biological Importance. The impacts on these sites are unclear at this strategic level but potential exists for adverse effects to occur.

It is not expected that the station upgrades package would affect ecology although older stations may house bats which would need to be protected. Similarly, the park and ride sites may result in localised loss of vegetation and have the potential to affect valuable ecology if present on site. However, each site should be subject to detailed survey and appropriate mitigation measures should be put in place to avoid significant impacts.

The walking and cycling proposals offer an opportunity for enhancement measures which should be brought out further in the strategy. Where new walking and cycling only routes are proposed, opportunities should be sought to improve green infrastructure connectivity and develop wildlife corridors.

The SEMMMS and Wigan Inner Relief Route schemes have been assessed as having minor adverse impacts upon biodiversity and, given its proximity to a number of designated ecological sites and its rural location, the Longdendale study also has potential to have adverse impacts. However, the Wigan and Longdendale studies are both at the options development stage and, particularly with Longdendale it is too early to identify whether adverse effects may occur or not.

Overall, the impacts of the strategy on biodiversity, flora and fauna are not anticipated to be significant nor would they result in significant cumulative effects. Instead opportunities should be sought to enhance the green infrastructure network to achieve benefits in terms of wildlife connectivity.

A number of suggestions for areas to explore in further LTP3 development have been made to improve the strategy which are identified in the IA Report. Key areas for consideration are summarised below:

- Planting proposals to encourage biodiversity at the proposed interchanges at Altrincham, Bolton, Rochdale and Stockport should be encouraged.
- It is recommended that the LTP3 strategy is expanded to include details of the good environmental management measures used during construction of transportation schemes across Greater Manchester. This could also encourage the protection and enhancement of biodiversity through transport proposals.
- The LTP3 should also incorporate mitigation banking<sup>2</sup> to offset habitat loss through major schemes which should be interpreted further within the Local Area Implementation Plans for each of the authorities.
- If it is determined that the Chorlton to Manchester Airport Metrolink extension is implemented on the most beneficial (for other reasons) alignment, appropriate mitigation and compensation should be applied to avoid and/or offset any adverse effects in Sites of Biological Importance.
- It should be ensured that the park and ride schemes do not lead to large areas of vegetation being removed or increase noise and light pollution.
- Walking and cycling proposals should complement the proposals in the Greater Manchester Green Infrastructure Strategy and should help to improve connectivity of green spaces and designated wildlife sites.
- Specific reference should be made to greenways and quiet lanes to facilitate the movement of wildlife across Greater Manchester.
- As the Longdendale scheme is in its infancy it is recommended that options are developed in a way that minimises effects on biodiversity resources, notably the designated sites located in the area.
- Maintenance measures should give due consideration to minimising effects on ecology through reducing light and noise disturbance, minimising vegetation clearance and minimising the size of working areas especially in sensitive locations.
- Consideration should be given to opportunities to create wildflower areas when developing new transport infrastructure.
- It is recommended that any new lighting schemes are sensitive to the setting in which they are located and will not lead to detrimental effects to biodiversity resources.

## 6.6 Landscape and Townscape

The presence of roads and other physical infrastructure can give rise to effects that may change the physical character of the landscape. Noise and light arising from transport related developments can also give rise to changes in landscape character, with noise affecting the tranquillity of areas and light pollution affecting the visibility of the night sky. Attitudes of people observing the change and the resultant development typically also vary widely.

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<sup>2</sup> Mitigation banking is the restoration, creation, enhancement, or preservation of a wetland, stream, or habitat conservation area which offsets expected adverse impacts to similar nearby ecosystems.

New station and bus interchange developments, such as those proposed in Bolton in Altrincham, could improve the townscape through high quality design, and potentially stimulate further changes in the public realm and to neighbouring sites. Other bus service improvements would have only very minor impacts upon the townscape, except for the new Leigh-Salford-Manchester busway, which will result in a minor worsening of landscape/townscape resources at a local scale.

The majority of Metrolink extension works would have a minor adverse impact, as a result of changes to views from residential properties, and impacts on the character and setting of green belt, conservation areas, parks and open space. However, the effects are likely to be localised and to be caused primarily by new car parks and Metrolink infrastructure. Extensions through Oldham and Rochdale town centres would have benefits for the townscape as they would be accompanied by high quality public realm improvements.

The provision of new walking and cycling routes linking local centres and facilities has the potential to incorporate new green infrastructure and help to improve the public realm for the benefit of the wider townscape. Development of such routes, and maintenance of the existing highway network, should be carried out with the objective of improving views and enhancing the existing townscape.

The construction of new relief roads in Wigan and Ashton would have some minor impacts on some views, but these would not be significant in the overall urban context of these schemes. Relieving congestion in the centres would be of benefit to the townscape. Assessments carried out for the SEMMMS project have identified some areas of valuable landscape to be crossed by the new road, although the scheme should be designed to minimise adverse impacts as far as possible. Proposals for the Longdendale study must be aware of the potential for views from and to the Peak District National Park to be affected.

The strategy identifies that new street lighting will be introduced in phases across Greater Manchester as part of highway improvement works. The use of the latest technology would help to reduce light pollution from street lighting.

A number of areas for consideration during more detailed work have been made and these are identified in the IA Report. These are summarised below:

- The LTP3 should promote good landscaping practice for all transport infrastructure schemes. Mitigating landscaping proposals should be developed for specific schemes to compensate for any potential adverse impacts on views and landscape character, and to enhance these where possible.
- Planting that complements local biodiversity objectives and targets should be pursued where possible.
- Rural proofing is not specifically referred to in the strategy and is considered a potential area for future work. The strategy should recognise the special needs of rural environments, tranquillity and way of life specifically.
- New interchange proposals should seek to incorporate new planting where possible to provide local townscape and biodiversity benefits.
- It is recommended that local, regional and national cycle routes that are severed by new transport infrastructure are appropriately provided for, whether that be through dedicated crossings or diversions.
- If the removal of trees is required for new Metrolink lines, an appropriate re-planting scheme should be implemented where possible.

- It should be ensured that proposed station upgrades consider the implications on landscape/townscape resources with respect to increased noise and light pollution.
- Tranquil areas alongside the East Lancashire Railway should be protected through the use of sensitive lighting and noise control as a preferred scheme design emerges.
- It should be ensured that the park and ride schemes do not lead to a large increase in road traffic at the proposed locations as this could lead to adverse effects for views from sensitive receptors.
- Consideration should be given to greenways and quiet lanes to improve the public realm and appearance of townscapes across Greater Manchester. Species of local provenance should be encouraged when developing greenways and cycle routes.
- LTP3's linkages with RoWIPs and an explanation of how the LTP3 integrates with existing strategic and ongoing improvements to the overall walking and cycling network.
- Maintenance of roadside vegetation and trees should be appropriate to the locality and be of benefit to the townscape/landscape. Maintenance regimes can also affect the biodiversity value of the vegetation.
- It should be ensured that street lighting is low energy, well designed and sympathetic to local character. This is particularly important in tranquil areas.

## 6.7 Cultural Heritage

Transport can have an impact on the historic environment in one of two ways: changes in traffic affecting the setting of historic features and increasing severance from associated communities or other features, and the construction of new infrastructure which can have both direct and indirect consequences.

Collectively, the package of measures in the LTP3 strategy aims to reduce use of road vehicles and encourage a modal shift to public transport and active travel modes. Changes in traffic volumes in sensitive areas, such as in Manchester city centre and other district centres with their high concentrations of listed buildings and conservation areas, may have some slight beneficial impacts for the setting of features. However, it is unlikely that these would be significant in isolation. The impact on severance and the setting of historic features from traffic is therefore considered to be negligible.

The package of measures to improve bus services would entail very little new infrastructure development, and no impacts are predicted upon cultural heritage assets. New Metrolink extensions to East Didsbury and Rochdale provide an opportunity to restore rail services on former lines and restore the historic use of the rail corridors. The majority of on-street lines would have no impact when set against the existing traffic flows, but care needs to be taken to avoid indirect changes to noise and vibration in the Chorltonville conservation area. There would be no direct impacts in the sense of disturbance or destruction of heritage features.

Rail provides a lower-impact alternative to road transport on the historic environment, although the rail network across Greater Manchester is itself of historic significance. Historic station buildings are notable for their architecture and contribution to historic townscape in many centres across the conurbation. Both they and other heritage lineside features and structures should be protected during capital and maintenance works.

The strategy makes reference to the potential for operating passenger services on the East Lancashire heritage railway to improve public transport links to Manchester City Centre which would be likely to have some impact upon the existing heritage operation. This proposal is amongst various options being considered through the East Lancashire / West Rochdale area study. The study is still at the option identification and development stage and impacts cannot be predicted with any certainty until the findings of this work emerge.

The strategy's proposed improvements to walking and cycling routes could help to reduce severance between heritage assets and local communities. This would benefit the historical significance of the resources themselves, enhance their relevance for local people and therefore add to their perceived value. Such measures would be complemented by highway improvements that emphasise the value of the local historic environment and support heritage-led regeneration.

Major road schemes supported by the strategy would have mixed impacts. The relief of congestion in Bramhall, Ashton and Wigan town centres would be offset by the adverse impacts of new roads on the setting of other heritage features. The SEMMMS scheme would adversely affect a regionally-significant site, although there would be no direct impacts.

The conurbation's canal network has important heritage value. Bringing derelict or disused canal infrastructure back into productive use could involve enhancements or the protection of features. However, more intensive use of the network does increase the risk of damage or loss of historic elements, and this must be avoided.

There are a number of areas for consideration as further work is carried out on LTP3. These are summarised below:

- Appropriate mitigation should be included within design and construction planning for all new transport developments to ensure that adverse impacts upon any sensitive sites are avoided. This should include a heritage assessment where it is considered that the potential for impacts is high, such as where park and ride sites are constructed on previously developed land.
- Retention of heritage features should be incorporated into new bus interchange developments where possible. Consultation should occur with local heritage groups, such as that which occurred at Altrincham Interchange and the retention of the existing booking hall. This scheme will deliver modern facilities whilst simultaneously respecting the heritage of the station.
- New Metrolink line development should consider the potential for impacts upon heritage features. Notably the second city crossing must avoid impacting upon listed buildings, such as could happen from the inappropriate siting of stops or overhead line equipment.
- Redevelopment of heritage station buildings should be undertaken following a full buildings assessment and the granting of listed building consent where required, e.g. at Manchester Victoria. Opportunities should be taken to preserve and enhance the heritage value of railway infrastructure during redevelopment. Good design should enable modernisation of stations and other railway infrastructure to take place whilst protecting features of historical significance.
- Historic features should be considered when devising new walking and cycling routes, both to avoid any potential damage from new infrastructure, and also to ensure that access to such locations is improved by sustainable means.

- SEMMMS and the Wigan Inner Relief Road are still at the options stage. During this options development, cultural heritage should be a key consideration.
- The design of new roads, including landscaping and boundary treatments, should be aware of the need to minimise adverse noise, visual impacts and severance impacts upon heritage features.
- Further exploration of support for improvements to roads that help to emphasise or contribute to the value of the historic environment, especially in Manchester city centre and as part of support for wider regeneration initiatives.

## 6.8 Water

Development of transport infrastructure can cause surface water features to be modified, including the diversion and culverting of watercourses. Pollution risks to surface and groundwaters may be increased both during construction and operation. The LTP3 strategy could also affect flood risk, either by introducing new infrastructure in flood-vulnerable areas, or by changing the risk that already exists.

The strategy's combined proposals to improve the quality of public transport and promote active travel modes are designed to promote a modal shift away from the private car. Any subsequent decreases in traffic volumes may reduce the deposition of pollutants on the public highway, reduce the concentrations of pollutants in highway runoff and therefore benefit receiving groundwater and surface water. However, given that traffic volumes on the highway network are unlikely to see major changes, except where new roads are built, these impacts are considered to be negligible.

All construction works carry an inherent heightened risk of pollution to surface and groundwater. These would need to be controlled during construction works. The Rochdale Canal SAC is especially vulnerable to disturbance, and particular attention should be paid during construction of the Metrolink extension to Rochdale to avoid impacts upon this delicate ecosystem. Elsewhere, appropriate pollution methods would be implemented during the design of projects to avoid impacts on water features.

None of the major bus scheme proposals are considered to have a significant impact upon the water environment. There is the potential for changes to flood risk on the site of the Rochdale interchange, but these would be mitigated as part of the development process.

Extensive new hard surfaced areas, such as would occur from the development of new park and ride facilities, could locally increase flood risk. Such schemes provide an opportunity to use permeable paving to reduce changes to infiltration and runoff rates. Runoff changes elsewhere, such as from the construction of new off-street Metrolink lines would not be significant beyond the immediate locality.

The creation of new walking / cycling routes may provide opportunities to remodel adjoining land for the benefit of water features, including Sustainable Drainage System (SuDS) features and soft landscaping. However, any benefits would be highly localised and scheme specific.

The LTP3 strategy recognises the need to reduce flood risk on the highway network, and the opportunity afforded during highway maintenance works to remove constraints on water flows and restore natural flow patterns. The construction of SEMMMS would reduce floodplain storage and increase the risk of pollution from highway runoff entering local watercourses. New roads in Wigan and Ashton would have a negligible impact.

Greater Manchester has an extensive network of navigable waterways dating from the 18<sup>th</sup> and 19<sup>th</sup> Centuries. More intensive use of the conurbation's waterways may offer opportunities to clean up and modernise neglected stretches of canals, for the benefit of water quality and ecology. Conversely, a higher volume of traffic on the canals carries a heightened risk of pollution or other harm to the network.

Avoiding unnecessary salt spreading through improved forecasting and routing of gritters would help to avoid excessive deposition and therefore avoid unnecessary pollution.

There are a number of areas for consideration as further work is carried out on LTP3, and these are summarised below:

- Appropriate pollution control measures should be implemented during construction of key investment schemes. These must be designed in accordance with recommendations in the accompanying HRA to avoid impacts upon the Rochdale Canal SAC.
- FRAs should also be carried out for new road schemes as required by the EA.
- Opportunities should be taken to introduce SuDS wherever feasible as part of new Metrolink extensions, rail upgrade works, park and ride facilities and new road projects.
- Maintenance and capital works should consider the potential for remobilising in situ contamination from historic land uses and take steps to ensure that no additional pollution is caused.
- Care should be taken to ensure that the design for the SEMMMS and Wigan Inner Relief Road schemes minimise impacts on flooding and the water environment.
- Maintenance programmes should take account of the handling and treatment of contaminated run-off from road surfaces. Drainage systems should be sufficient to cope with the volume of run-off, and include features such as traps or balancing ponds to ensure contaminated water does not cause ground or water pollution. Maintenance regimes should also include routine inspection and cleaning of these features to make sure that they remain effective.
- New water-based transport developments should be fully assessed for their impacts on water quality, flood risk and the integrity of surface water features.
- Water efficiency technology such as rainwater harvesting could be installed at new and refurbished stations and interchanges.

## 6.9 Human Health

Transport networks and facilities can positively contribute to health and well-being by improving access to services, health facilities, employment and exercise opportunities, providing social interaction and potentially by reducing congestion and its associated adverse effects. However, transport can also have negative health effects as a result of pollution, accidents, severance and stress or by encouraging a more sedentary lifestyle. The transport sector has a role to play in improving the health status of the Greater Manchester population.

In isolation, a number of the strategy components may not deliver significant health improvements, but when implemented, together they could help to support wider initiatives that are being undertaken across Greater Manchester to tackle some of the

significant health inequalities that exist. Key benefits of the strategy include the potential to deliver accessibility improvements and the long-term health gains that could be achieved through the clear commitment to increase levels of walking and cycling. In the long-term the measures proposed to improve the rail, bus and Metrolink networks could make walking and cycling more desirable transport options for the Greater Manchester population by helping to encourage a modal shift. Reducing congestion on roads and re-allocating road space to pedestrians and cyclists will only be achieved if there are viable public transport alternatives that provide connections to key town centres as well as Manchester city centre where individuals can access key services.

A number of the bus schemes offer opportunities to reduce accident risk by providing safer crossing points, improving the quality of the public realm and introducing separated cycle/footways which could help to encourage people to use these active travel modes more frequently. A number of the schemes to improve the quality of the bus interchanges, for example in Altrincham, Rochdale, Stockport and the proposed Metrolink extensions will help to support ongoing regeneration programmes which could stimulate greater levels of investment and improve access to employment opportunities.

The proposals to improve and regenerate station facilities are unlikely to offer significant health benefits although the provision of enhanced CCTV could improve perceptions of and actual levels of safety at the stations. The development of park and ride sites is also considered unlikely to offer significant health benefits although there might be a risk that people who currently walk/cycle to stations may change to driving as a result of the new park and ride facilities and there could be increased congestion in the vicinity of the sites. However, such effects are uncertain.

Improvements to fares and ticketing systems and the provision of sustainable travel information complement other aspects of the strategy although in isolation, these measures are unlikely to offer significant health benefits. There are opportunities through this aspect of the strategy to publicise improvements to the public transport network and to highlight the potential connections between public transport modes and walking and cycling routes.

There is a strong commitment in the strategy to developing the cycle network and to improving rights of way. Participation in regular, moderate physical activity can offer significant health benefits by reducing the onset of chronic disease. Improvements to the public realm as a result of greater levels of cycling and walking could also lead to long term mental health and well-being benefits, for example, stress linked to congestion could be reduced<sup>3</sup> and an increase in people undertaking physical activity and living within a less congested environment could also help reduce anxiety.

The highways aspects of the strategy are unlikely to offer significant health benefits in isolation although there may be the potential for some wider regeneration benefits in the long-term if accessibility is improved.

There is a clear commitment within the LTP3 strategy to improving the safety of the road network and this is assessed positively from a health perspective. This is particularly important as children living in more deprived communities are more likely to

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<sup>3</sup> Research undertaken by the Institute of Stress Management identified that elevated blood pressure and heart rates were recorded in people who had been stuck in traffic (BBC News). Commuters suffer extreme stress – cited in UK Government Comprehensive Spending Review (2006) Health Impacts and Costs of Unsustainable Transport.

be involved in a road accident. As well as offering accident reduction benefits this part of the strategy could help to make walking in communities more attractive by creating an environment where pedestrian priority is most important.

Areas for consideration in LTP3 preparation are summarised below:

- Further exploration of transport measures should be undertaken to meet specific social needs. The strategy recognises that existing facilities are provided by a number of agencies and that further review of services is required. It is recommended that further evidence is obtained about the success of the services provided to date and ensuring that the services provided meet the needs of the Greater Manchester population.
- Ensure wider cycle and pedestrian routes connect with the proposed new interchanges to provide opportunities for individuals to combine cycling and walking with use of public transport modes offered at each interchange e.g. bus, Metrolink or rail.
- Further consideration could be given to the development of cycle hire schemes at the stations, to potentially give those who arrive at each station, the option to cycle to their final destination.
- The selection of park and ride sites should be subject to significant scrutiny to ensure that congestion and accident risks will not increase for communities where they are proposed.
- Engage with communities and groups, especially those that experience health inequalities, to understand how they would like improved travel planning information to be provided. This should ensure that the service actually meets needs and that the needs of diverse groups are also considered.
- The provision of improved travel planning information should highlight opportunities to use active travel modes, such as walking and cycling and not just details relating to bus, rail and tram systems.
- Wider travel planning tools offered by other organisations should be publicised e.g. Sustrans and Cycle England to raise awareness of them.
- Links between transport and land-use planners should be further developed such that new developments are designed to encourage the use of active modes of travel, for example, incorporating pedestrian friendly greenways and putting parking towards the periphery of developments (if needed at all).
- Implementing improved walking connections could be better integrated with and linked with the RoWIPS produced by each authority.
- Some SMART targets should be developed for walking and cycling across Greater Manchester and they should be frequently reviewed to ensure targeted investment is being spent in the correct way and real improvements are being delivered.
- Further studies are recommended into the potential for 20mph zones to be successfully implemented across key locations in Greater Manchester. It is recognised that schemes implemented in other cities may not be directly transferrable to Greater Manchester but further investigations should be undertaken to ensure that a safe network is established.
- There is potential for the final LTP3 strategy to place more of a focus upon engaging with communities to identify the priorities that should be delivered across Greater Manchester. For example, through the LAIP process there should be scope for communities to be involved and make recommendations

about the actions they would like to see implemented e.g. where might they want traffic calming to be implemented.

- A reinvigoration of cycle proficiency schemes in schools is recommended to support other initiatives proposed in the strategy.

The overall success of the measures in the strategy for health status, will be driven, to a certain extent by the way they are implemented through the LAIPs and the extent to which the public is engaged in the process of implementing some of the strategy components proposed and how they are publicised.

## 6.10 Population, Economy and Diversity

The LTP3 strategy highlights economic productivity, employment and reduced deprivation as key policy drivers for transport prioritisation in Greater Manchester. In doing so, the strategy commits the Greater Manchester authorities to a prioritisation process – based upon that used to generate the Greater Manchester Transport Fund – to identify the final LTP3 interventions that most contribute to economic growth, GVA and increased productivity, whilst also contributing to positive social and environmental benefits overall.

A range of measures are put forward aimed at developing accessibility including the expansion of the Metrolink and new interchanges in relation to availability with measures to develop accessibility at, for example, bus stops, and measure to improve safety and acceptability. The potential of these measures for positive impact on the population as a whole is clear and they support the objective of the strategy to ensure that the transport network supports the Greater Manchester economy so that it can improve the life chances of residents and the success of business.

The improvements to the bus system, including, for example, improved standards, reliability and coverage, especially on orbital routes, are expected to provide significant benefits to those who use the bus network most, for example, those on lower incomes, older people and women. The improvement of transport interchanges also contributes to this, notably those located in more deprived communities.

The accessibility improvements brought about by the Metrolink upgrades and increased coverage are also beneficial especially for those new lines which will connect areas exhibiting higher levels of income deprivation. However, the direct impact will only be optimised if affordability can be improved, noting that the Metrolink development programme will still see the retention of parallel bus services as alternatives.

Access to public transport for all sections of the community is directly linked to affordability. It is important to note in relation to this that low income households are also more reliant on public transport as they make almost double the number of bus trips of middle income households. This means these households will suffer a disproportionate negative impact as a result of price increases which will include sections of the community concentrated in low income households such as disabled people, BAME people and one parent families. Any rise in bus fares also has a negative impact on children and young people.

The response to this in the draft LTP3 strategy is the work underway between GMPTE and DfT to develop new systems for the management of public subsidies in the Greater Manchester bus network. This work is promoted as critical both in maximising the value for money and social benefit of public subsidies and in presenting the scope for reformed ticketing systems supported by the development of a future multi-modal

smartcard product. The full impact of this proposal will therefore require the resolution of issues within current (commercial and concessionary) fares regimes that do not necessarily map most effectively on to social needs and affordability at present.

The strategy is expected to positively improve the pedestrian environment in lightly trafficked residential areas, by designing them with a pedestrian focus. The strategy states that priority will be given 'where the community itself has identified a clear need' in relation to improving safety.

Developing walking and cycling links across Greater Manchester has the potential to improve the quality of the built and natural environment, improve connectivity between residential areas and local services and help to promote greater levels of community interaction by reducing levels of severance as a result of congestion.

From an equality perspective, this Impact Assessment has identified the need for an explicit presentation in the final LTP of the impact for key sections of the community in particular disabled people, black, Asian, minority ethnic (BAME) people, women, older people all of which are over represented in low income households; and equally in relation to the safety of gay lesbian and bisexual people and people who have or are going through gender transition.

From an economic perspective, the LTP3 strategy takes the long-term future development of the city region's economy, as determined by the Greater Manchester Strategy, as its policy start point. The Manchester Independent Economic Review highlighted the importance of the transport network in supporting the development of the economy and a number of the measures in the LTP3 are consistent with the recommendations of the review, which identified effective connectivity as essential in ensuring access to the skills and markets that are critical to maintaining and developing Greater Manchester's competitive status. A number of the schemes proposed will help to reduce congestion, improve the quality of the transport network and complement ongoing regeneration initiatives in a number of the district centres which should help encourage greater levels of inward investment and improve transport connections to employment opportunities. A number of the schemes will also improve access to Manchester airport and this is recognised as being a key investment area in the future and, therefore, a high quality transport network to and from the airport is assessed as a key strength.

There is a reinvigorated focus in the LTP3 strategy upon promoting active modes of travel and this has the potential to offer significant economic benefits, as demonstrated through studies into the success of the Cycle Demonstration Towns. Furthermore improving the health of the Greater Manchester population through the use of active modes of travel will also offer long-term health benefits by helping to reduce absenteeism and worklessness.

The assessed impact on population is positive in many areas. However, in developing the final Plan, this Impact Assessment advises the need to build on the recommendations made above to ensure inclusion for all sections of the population and maximise the delivery of positive outcomes.

In the light of this, in order to deliver a positive outcome from the key proposals developed through LTP3, for all sections of the community (and to deliver against the requirements in the Equality Act), in developing the final LTP3, GMITA and AGMA are advised to:

- Monitor and ensure positive changes are delivered against existing negative impacts identified through the LTP2 review specifically in relation to access, safety, traffic accidents and the development of vibrant communities.
- Target communications and the development of alternative travel options to specific sections of the community to support uptake.
- Monitor delivery across all sections of the community to ensure uptake by all equality groups and across geographic areas, and further develop targeted work based on the information gathered to support a clear understanding of the actual impact of LTP3. This needs to include the ongoing engagement of community networks and organisations advocating for key sections of the population in scheme development and delivery of transport options.
- Develop targets to monitor progress against the commitment to improve accessibility in relation to physical accessibility and accessible information on navigation of the transport system.
- Develop a clear response to safety on public transport with public and third sector partners ensuring race, disability, transphobic and homophobic hate crime are specifically addressed.
- Ensure equality and diversity are built into contracts and contractors are monitored on performance against these requirements.

## 7 MONITORING

The final stage of the IA process is to monitor the strategy to test how it performs against the effects predicted during the IA. Monitoring therefore helps to ensure that any undesirable sustainability effects are identified and allows remedial actions to be directed accordingly.

A monitoring framework has been developed and is presented in the IA Report. The monitoring framework has been developed, where possible, to integrate with the monitoring that will be undertaken of the LTP3, to streamline the monitoring and minimise the use of resources.

## 8 CONSULTATION AND NEXT STEPS

This document is available for public comment alongside the consultation on the LTP3 Strategy. The consultation period will be between October 4<sup>th</sup> 2010 and December 24<sup>th</sup> 2010.

To assist with the consultation process we have posed the following key questions to help guide your responses:

- Do you agree with the results of the assessment of alternative strategies?
- Do you agree with the results of the assessment of the preferred strategy?
- Do you agree with the proposed recommendations for mitigation and enhancement?
- Are there further measures for mitigation and enhancement which you feel should be included?
- The monitoring framework is currently in draft. Can you recommend any useful monitoring indicators or targets to be applied?
- Do you have any other general observations or recommendations?

Please address any consultation feedback on the IA Report to:

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Feedback received in relation to the IA will be reviewed and considered. A Post Adoption Statement will be published alongside the Final strategy which will summarise the key consultation responses received and explain how the IA has influenced and been integrated into the development of the strategy. The final strategy is due for publication in March 2011.