

# Transport for Development

## Assessing the Transport Impact of the Greater Manchester Local Development Frameworks

Report for Greater Manchester LDF Modelling Steering Group

In Association With David Simmonds Consultancy and Greater Manchester Transportation Unit

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# Summary

1. This Report provides a summary of the issues being raised by the study into the potential transport impacts of the Local Development Frameworks (LDF). The objective of the study was to investigate the potential impacts on transport networks of the LDF core spatial strategies for each of the districts in Greater Manchester. The outputs from this study will be used to inform the further development of the LDF strategies by showing how the resulting travel demand changes impose stresses on the transport network. These outputs will consider the impacts both locally and in neighbouring areas, and highlight where investment in the transport network is required to achieve the core strategy or a revision to that strategy.
2. The model forecasts show that without the LDFs and transport schemes, that traffic levels are expected to increase, with a reduction in public transport demand. This is as a result of increasing levels of population, employment, income and car ownership over time, together with declining relative affordability of public transport compared with car. However, the inclusion of the LDF developments and the transport schemes results in a forecast increase in car trips of 15% but with public transport demand remaining constant between 2011 and 2026. The combination of the LDF developments and the transport schemes has arrested the decline in public transport patronage that would otherwise be expected. However, traffic levels are continuing to increase and the overall public transport mode share is forecast to continue decreasing.
3. The concentration of residential and employment development in the Regional Centre, as well as the improvements to the transport network, have contributed to forecast increases in public transport demand to the Regional Centre. This results in a forecast increase in public transport commuting journeys of 2% between 2011 and 2026. However, this increase in public transport commuting is confined to Manchester and Salford districts, where development is concentrated on the Regional Centre. Elsewhere in Greater Manchester, the dispersed distribution of development results forecast decreases in public transport patronage and the increased dominance of the private car.
4. Rail trips are forecasts to increase throughout the day between 2011 and 2026, and the expansion of the Metrolink network means that tram trips are forecast to increase significantly over the period. However, with increasing traffic levels the cost of using the bus relative to other modes increases, resulting in forecasts of bus patronage reductions over time. The capacity of rail services in the peak periods is going to need to be addressed in order that the network is able to cater for the forecast additional demand.
5. Fuel efficiency is expected to improve over time and improvements in engine standards for emissions are also expected to continue. The net result is that despite the forecast growth in vehicle traffic, NOx emissions are expected to fall by about 20% between 2011 and 2026. However, PM10 and CO2 emissions are expected to increase, with CO2 output from traffic forecast to grow by 15%.
6. The trend of increasing traffic growth on the motorways which has been seen over recent years is forecast to continue when the the LDF developments and the transport schemes are included, with increased congestion resulting in journey times on the M60 increasing by up to 50% between 2011 and 2026. The section of the M60 anti-clockwise between the M66 and

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the M62 in the morning peak seeing the largest increase, with the M62 and the M67 being the worst hit of the other motorways in Greater Manchester.

7. Traffic levels are also forecast to increase on the remainder of the highway network, the resulting decrease in average speeds in the peak hours across all non-motorway roads being 17%. In particular the concentration of developments in the Regional Centre is expected to place increased stress on the radial routes, with rising congestion hitting bus levels of service as well as private car travel times. The A56 (Bury), A635 (Stalybridge), A57 (Hyde), M602/A57 (Irlam), A580 (Boothstown) and A666 (Bolton) have all seen journey time increases in excess of 30%.

# 1 Introduction

## 1.1 Purpose of this Report

- 1.1.1 The purpose of this Report is to provide the Local Transport Plan (LTP) Steering Group, Planning Officer's Group (POG) and the Highways Agency (HA) a summary of the issues being raised by the study into the potential transport impacts of the Local Development Frameworks (LDF). This study has been undertaken by consultants<sup>1</sup> and was managed via a steering group led by the Joint Transport Team.
- 1.1.2 The note outlines the background to the study, the approach that has been taken to analysis, consideration of the suitability of the model for policy appraisal and then sets out the transport and land use findings for consideration as part of the LDF evidence base.

## 1.2 Background

- 1.2.1 The objective of the study was to investigate the potential impacts of the levels of development set out in the LDF core spatial strategies for each of the districts in Greater Manchester on the transport networks.
- 1.2.2 The outputs from this study will be used to inform the further development of the LDF strategies by showing how the resulting travel demand changes impose stresses on the transport network. These outputs will consider the impacts both locally and in neighbouring areas, and highlight where investment in the transport network is required to achieve the core strategy or a revision to that strategy.
- 1.2.3 The approach involved using the land use and transport forecasting models that have been developed for the Greater Manchester area. The models assume levels of economic growth that are consistent with the Association of Greater Manchester Authorities' (AGMA) Accelerated Growth Scenario (AGS), along with development of the sites and allocations contained within the emerging Local Development Frameworks.

## 1.3 Context and Nature of the Modelling Work

- 1.3.1 The approach to the study has utilised the land use and transport forecasting models that have been developed for the Greater Manchester area. The models used in this study are:
- a land use model (DELTA);
  - a transport demand model (TRAM);
  - a public transport assignment model (TRIPS); and
  - a highway assignment model (SATURN), together with its emissions estimation attachment.
- 1.3.2 The modelling approach is therefore much more complex and sophisticated than a traffic assignment exercise. A traffic assignment exercise would only have assumed full

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<sup>1</sup> MVA Consultancy, David Simmonds Consultancy and Greater Manchester Transportation Unit

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development of all the sites put forward, and placed all the generated traffic onto the road and PT networks, regardless of responses to congestion. Whereas the modelling that has been adopted allows the model to determine how much of each development will be occupied, the resulting population and employment and the demand for travel arising from this. All of these responses take into account the changing costs of travel, and the impact this will have on the location of population and employment, the distribution of journeys, the mode choice for journeys, the time of day travelled and the route chosen.

- 1.3.3 The process used is recognised by DfT as appropriate in Greater Manchester, and has been used previously for the Transport Innovation Fund and Greater Manchester Transport Fund Prioritisation studies. The process was to input the land use data collected from Districts as their LDF preferred core strategy, or their best guess as to what it was likely to be at the time (Spring 2009).
- 1.3.4 The modelling needed to take place within the context of control figures for the fully modelled areas (roughly equivalent to the city region area). The control totals for population and employment growth were derived assuming the level of growth in the 'Accelerated Growth Scenario (AGS)' forecasts of the Greater Manchester Forecasting Model (GMFM, AGMA's economic forecasting model) inside Greater Manchester, and TEMPRO (Trip End Model Projections, Department for Transport software for giving access to national projections of growth in travel demand) growth outside of Greater Manchester. The growth implied by these two sources was summed to provide the overall level of growth for the fully modelled area.
- 1.3.5 All the planned developments that Districts have in their LDFs have been included in the inputs to the land use modelling, and have been assumed to be built, even though they imply growth at levels higher than implied by the control totals. The population and employment growth was distributed amongst the available development space by the land use model according to their relative accessibility. Normally, the land use model would have only permitted development of the more accessible sites.
- 1.3.6 A problem in this exercise has been which scenarios should be compared for LDF evidence base purposes – i.e. which comparisons clearly show the effects of the LDF allocations in transport terms relative to what we have now. For the 2026 situation (LDF end-date), the choice is clear – examine the situation with implementation of all LDF allocations to the extent permitted by the control totals, and assuming that all planned major transport schemes in the Greater Manchester Transport Fund (GTMF) have been implemented. There is, in theory, the possibility that some additional major schemes could be implemented between 2016 (the programmed completion of GTMF schemes) and 2026, but in practice it is likely that financial constraints will leave little scope for this.
- 1.3.7 It is more difficult to define the base situation, and in order to do this it is important to understand the question the study is intended to answer. For example, is the question to be answered:
  - What is the difference between the transport impact effect with LDFs in 2026 and the point at which all current developments have been built, and all committed transport schemes have been built?
  - What is the difference between the LDF transport impact and present flows on the network?

## 1 Introduction

- What is the difference between the LDF transport impact and the situation in 2026 if there were no LDFs?

1.3.8 It was ultimately decided that, although none of the options were entirely satisfactory, the first of these options should be used with 2011 chosen as the modelled year to take into account developments currently under construction and the transport schemes that were committed at the start of the study. The comparison with present flows on the network would be difficult because model forecasts are only available for 2006 and 2011, and forecasts for 2011 take into account developments and transport schemes that will be completed over the next few years. The model forecasts for the third option would have the level of growth consistent with the situation with the LDFs, but the increases in population and employment would have to be catered for within existing floorspace, which is considered to be an unrealistic situation.

1.3.9 In addition, whether traffic growth results from the LDF allocations or from other exogenous factors such as car ownership and income growth, it is the case that the respective highway and public transport authorities will need to address future congestion problems, but it is not clear whether Inspectors will attempt to isolate the LDF effects at Public Inquiries.

### Interpretation of the Results

1.3.10 This is a strategic model, and care should be taken not to focus on individual transport link loadings. It is more useful to look at localities where traffic is expected to increase, over a series of links, and at inter-District flows.

1.3.11 The land use data input to the work reflects, as stated above, the Districts' progress on their LDF core strategies as at Spring 2009. Whilst it is possible that some changes could be made as the Districts move forward to publication of their Core Strategies, especially those which are at an earlier stage in the process, it is unlikely that these will be of sufficient scale to change the conclusions at the level of interpretation of these results.



## 2 The Model and Approach to Modelling

### 2.1 Modelling Approach

- 2.1.1 The approach to the study has been to undertake land use and transport modelling to explore the relative impacts on land use and key transport metrics of the following:
- underlying travel demand trends;
  - the land use allocations within the LDFs; and
  - the potential impact new capital investment in transport via the Transport Fund.
- 2.1.2 In order to isolate each driver in turn, artificial test scenarios were created and run through the models. Each test took employment and population control total inputs based upon the AGS from AGMA's economic forecasting model, the Greater Manchester Forecasting Model (GMFM), and Department for Transport's TEMPRO<sup>2</sup> data. The control for the Fully Modelled Area (equating roughly to the City Region area) comprised the sum of the growth implied by the AGS forecasts for Greater Manchester County and the TEMPRO forecasts for the rest of the City Region area.
- 2.1.3 The employment and population control totals were applied at the Fully Modelled Area level, and were therefore used to ensure that the target growth was achieved over this area. Population and employment growth were distributed amongst the available floorspace by the land use model, this distribution being undertaken by considering the accessibility of each of the sites will available space to take additional population or employment. It was assumed in the testing of the LDFs that all of the LDF developments were constructed, the land use model determining the level of take up of the floorspace in each development.
- 2.1.4 The tests that were undertaken using the model are outlined below:
- **Do Minimum** which assumed the levels of economic and demographic growth contained within the AGS forecasts and basic transport trends (on car ownership etc) but no additional development after 2011 and no changes to the transport network beyond schemes already committed.
  - **THE LDF Development Proposals Scenario** which added the local authority planners best estimates of the likely LDF planning allocations (based on information available in February 2009) at a ward level to the assumptions for the Do Minimum.
  - **Greater Manchester Proposals Scenario** which added a package of transport interventions that were planned for the Transport Fund to the assumptions for the LDF Development Proposals Scenario.
- 2.1.5 During the early stages of this study, the Greater Manchester Transport Fund schemes were agreed and approved by the AGMA leaders. Therefore, the focus of the reporting of this project has been on the impact of the LDFs on a situation where all of the schemes contained within the Greater Manchester Transport Fund have been completed.

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<sup>2</sup> The TEMPRO program gives access to the national Trip End Model projections of growth in travel demand, and the underlying car ownership and planning data projections

## 2 The Model and Approach to Modelling

- 2.1.6 The reporting of the transport impacts of the LDFs concentrates on comparing the forecasts for 2011 with those for 2026, assuming that all of the LDF developments are built, but not necessarily occupied, and that the Greater Manchester Transport Fund schemes are constructed over this period. Some comparison is made with the situation where new developments and the transport schemes have not been constructed, to show the overall impact of the LDFs and the transport schemes on the demand for travel within Greater Manchester.
- 2.1.7 Further to the two tests described above, a sensitivity test is to be undertaken showing the impact of the Highways Agency schemes proposed for the M60 and M62 on transport levels of service on the network with the presence of the LDFs and the transports schemes.

### 2.2 Suitability of the Model for Policy Appraisal

- 2.2.1 The suite of models developed to support Greater Manchester's Transport Innovation Fund (TIF) bid provide a sound basis for assessing the transport impacts of the LDF Core Strategies. The land use and transport models are tools that can be used by policy makers to assist in understanding the likely impacts of different options. **However, their forecasts should not be seen as a definitive statement on either traffic patterns, land use or the distribution of population and jobs.**
- 2.2.2 These models have the capability of considering the following impacts of the LDF:
- the impact of the level of development on travel demand, and the impact that the time and money costs of travel have on the take up of new developments;
  - the impact of the level of demand and supply on the routes drivers use to make journeys in the highway network, the delays the drivers impose on each other and the volumes of traffic travelling on each part of the network;
  - the impact of the level of demand and supply on the public transport modes that public transport users chose, the route they will take and the consequent passenger flows and times on the public transport network; and
  - the impacts of changes in transport conditions, resulting from changing provision of infrastructure and services and from changing levels of congestion, on the distribution of land-use activities in and around Greater Manchester; in particular through changes in the intensity of occupation of the available stock of development, and through changes in where development occurs within the constraints defined by the LDFs.
- 2.2.3 The above functionality means that the models will provide a sound basis for assessing the strategic impacts of the LDF Core Strategies. However, it is important to be aware of certain limitations of the modelling approach in interpreting the model outputs, as detailed in the remainder of this section.

#### The Economic and Demographic Scenario

- 2.2.4 This assumed economic and demographic scenario allows spatial and transport policy to be tested against high levels of economic growth, to appraise whether it helps or impedes growth. The levels of growth in GDP forecast by the AGS are greater than those forecast in most national economic projections. This reflects the aspiration of the economic strategy that

## 2 The Model and Approach to Modelling

GDP within Greater Manchester would grow at a faster rate in order to 'catch-up' with the national level<sup>3</sup>. The ability of Greater Manchester to achieve this growth aspiration will depend, in part, on the mix of new developments and improvements in the transport infrastructure.

### The Planning Policy Inputs

- 2.2.5 The approach adopted was that the model would assume that all planning permissions and land allocations are developed, but not necessarily occupied. This allows the 'worst-case' scenario, in terms of congestion and levels of traffic generated to be appraised. The land-use model has the functionality that would allow an assessment of market demand to be made whereby permissions and allocations would only be developed to a level that would result in an acceptable return for the developer. This functionality would favour development in locations which were the most accessible. Had that functionality been applied then a slightly different pattern of land use, population and employment might have been forecast. This in turn could have affected patterns of transport.
- 2.2.6 Whilst the modelling requires that the planning inputs are allocated at ward level, the study does not make any assessment of individual sites.
- 2.2.7 The information on planning policy inputs provided by the local authorities may have underestimated the levels of windfall development that are likely to come forward, especially in the medium to long term term.

### The Transport Models

- 2.2.8 These have been developed at a countywide level to assess the likely transport impacts of transport strategies over time. No specific work has been undertaken on any scheme and so the work does not represent the definitive modelling for scheme assessments. However, the modelling work that has been undertaken will allow the contribution of the schemes towards the accessibility of developments contained within the LDFs to be taken into account.
- 2.2.9 As the modelling system has a fixed factor for applying travel demand growth from a 3 hour morning peak to the more detailed peak hour traffic model, no allowance is made for any peak spreading effects that may occur in the future. The implication is that any peak hour congestion statistics are likely to be over-stated to a degree.
- 2.2.10 The modelling approach does not include the modelling of crowding effects on public transport. The implication of this is that public transport services are effectively allowed to continue to pick up passengers even when full, and passengers also see no disbenefit to standing or travelling in crowded conditions. There is therefore a possibility of the demand for public transport services being overstated, these additional trips would otherwise need to travel by an alternative mode, be diverted elsewhere or make the journey at a different time.

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<sup>3</sup> The government have published details of 19 independent forecasts of medium-term economic growth. The average of these forecasts shows levels of GDP growth of 2.6% per annum by 2012 (<http://www.hm-treasury.gov.uk/d/200902forecomp.pdf>). These compare to the AGS forecast of 3.24% growth across Greater Manchester in 2011-12.

## 3 What the Forecasts Show

### 3.1 Introduction

- 3.1.1 Planning Policy Statement 12<sup>4</sup> sets out the Government's policy on local development frameworks. It describes the components of the Framework and the process for its preparation. It emphasises the need for both a robust evidence base and a sustainability appraisal of the emerging plan policies. This modelling exercise should feed into any appraisal of LDFs, and is able to feed into existing processes for appraisal such as the Integrated Appraisal Toolkit<sup>5</sup> supported by local authorities in the North West. This exercise provided information on the outcomes of the LDFs in terms of impacts upon transport networks, population, levels of economic activity and development patterns.
- 3.1.2 Within this section the model outcomes that are described assume that both the planning policy inputs of the Local Development Frameworks, and the transport schemes comprising the Greater Manchester Transport Fund, are built.

### 3.2 Impacts on the transport Networks

- 3.2.1 The number of households within Greater Manchester is forecast to increase by around 15% between 2011 and 2026, with employment rising by 14%. The impact of the housing and employment increases is that the overall level of trip making in Greater Manchester is forecast to increase by 8%. The focus of the new growth over this period is on the Regional Centre, and the model results show the impact that this has on arresting the predicted decline in public transport patronage and also on congestion levels on the key routes to the Regional Centre.
- 3.2.2 The model forecasts show that without the LDFs and transport schemes, that traffic levels are expected to increase over time, with a reduction in public transport demand. This is as a result of increasing levels of population, employment, income and car ownership, together with declining relative affordability of public transport compared with car. The model forecasts suggest increases in the number of car trips of 16% and decreases in public transport trips of 6% between 2011 and 2026. The growth in car trips is further accentuated by the use of the AGS high economic growth scenario for the model tests. Higher levels of economic growth are forecast to result in higher employment and income levels; the latter leading to higher levels of car ownership and availability.
- 3.2.3 The inclusion of the LDF developments and the transport schemes in the model forecasts results in forecast increases in car trips of 15%, with public transport demand remaining constant between 2011 and 2026. This shows that the combination of the LDF developments and the transport schemes are expected to arrest the decline in overall public transport patronage that would otherwise be expected. However, traffic levels are forecast to continue increasing, albeit at a lower level, with the overall public transport mode share forecast to decrease over time.

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<sup>4</sup> <http://www.communities.gov.uk/documents/planningandbuilding/pdf/pps12lsp.pdf>

<sup>5</sup> <http://www.sdtoolkit-northwest.org.uk/toolkit/index.php>

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- 3.2.4 The fact that the cost of using public transport increases at a greater level than the increase in car cost resulting from congestion, mainly as a result of increases in public transport fares, means that people do not turn to public transport despite worsening congestion. This effect is exaggerated by the fact that the increasing congestion also has an impact on bus journey times. Public transport is also only a really attractive alternative for trips to the Regional Centre, plus a few other isolated areas, particularly with the dispersal of developments and trip patterns, and increasing car availability.
- 3.2.5 The model forecasts suggest that with the combination of the LDFs and transport schemes a 7% reduction in walk and cycle journeys is expected over the period 2011 to 2026. The concentration of employment and population in the city centre is likely to encourage more walking trips, whereas the transport improvements are likely to result in walk and cycle becoming less attractive relative to public transport.
- 3.2.6 The concentration of residential and employment development in the Regional Centre together with the improvements to the transport network have contributed to increases in public transport demand to the Regional Centre. The Regional Centre is the area of Greater Manchester which is the area best served by public transport, meaning that development in this area is likely to attract a higher public transport usage than elsewhere. Improvements to the transport network, such as the Metrolink network and the Leigh Salford Manchester busway, will further improve the attractiveness of using public transport to access the Regional Centre.
- 3.2.7 The only districts in Greater Manchester where the proportion of office employment that is concentrated in city and town centres is forecast to increase are Manchester and Salford. As a result of this, these are the only districts that are consistently forecast to have increases in public transport journeys between 2011 and 2026. The remainder of the districts, where the proportion of office employment within town centres is forecast to decrease, are expected to see decreases in public transport demand. Therefore, for areas away from the Regional Centre, the dispersal of development across districts is expected to result in the continued dominance of the use of private car. The combined impact of the distribution of developments described here is that overall public transport demand is forecast to remain constant despite increasing number of trips to the Regional Centre.
- 3.2.8 Although the number of public transport journeys is forecast to remain constant between 2011 and 2026, the trends associated with each public transport mode are expected to vary. The model forecasts show that bus patronage is expected to decline over this period, but with increases in rail and tram demand. Increases in rail demand will result from changing income levels and increasing congestion on the road network making rail more attractive than bus in relative terms. The expansion of the Metrolink network means that forecasts of demand are increasing significantly over this period. The increase in rail trip making will result in increased crowding levels on rail services, some of which are already operating at over capacity. It is therefore going to be essential that the capacity of rail services is addressed in order that the network is able to cater for this additional demand.

#### **Changes in Carbon Footprint**

- 3.2.9 The analysis has made use of Department for Transport research that suggests that fuel efficiency will improve over time and improvements in engine standards for emissions will continue. The net result is that despite the forecast growth in vehicle traffic, NOx emissions

are expected to fall by about 20% between 2011 and 2026. However, PM10 and CO2 emissions are expected to increase marginally, with CO2 output from traffic forecast to grow by 15%. The environmental impact is less than would otherwise have been the case without the LDFs and the transport schemes, the reduction in traffic increases having reduced NOx emissions further and lessened the impact on PM10 and CO2. The pattern is similar across most districts, although Oldham sees a 19% increase in CO2 emissions over the fifteen year period, and the least impact is seen in Rochdale and Bolton with 14% increases.

#### Changes in Commuting Modes

- 3.2.10 The trend for commuting journeys over time is expected to follow that for overall travel demand, with a shift away from public transport, walking and cycling to car. The overall levels of economic growth, without the LDFs and transport schemes, are forecast to result in an increase of 17% in car commuting trips, a decrease in public transport commuting trips of 2% and in walk/cycle of 7% between 2011 and 2026. With the LDF developments and the transport schemes public transport commuting journeys are forecast to increase by 2% between 2011 and 2026. However, increases on a district basis are confined to trips with a production or attraction in Manchester and Salford, highlighting the impact of the concentration of residential and office development in the Regional Centre on increasing public transport patronage.
- 3.2.11 Although Manchester and Salford are forecast to see increases in public transport commuting between 2011 and 2026, they are also forecast to have the largest increases in car commuting, with over 20% increases in productions and attractions over the period. The overall levels of economic and population growth, without the LDFs and the transport schemes, are only forecast to result in an increase in car trips of around 18%. However, with the inclusion of the LDFs and the transport schemes this forecast increase in car commuting in Salford is higher. Therefore, although the forecasts are predicting increases in the use of public transport for commuting, significant increases in commuting traffic are still forecast over the period, with commuting journeys by car increasing by 15%.
- 3.2.12 Walking and cycling journeys are forecast to decrease over time without the LDFs and the transport schemes. However, the impact of the LDFs and transport schemes are that walking and cycling trips decrease at a greater rate than would otherwise be expected, the decrease being 9% between 2011 and 2026. This impact is likely to be a result of the transport schemes which will provide improvements to both highway and public transport.
- 3.2.13 The lowest increases in commuting trips between 2011 and 2026 are seen in Bolton, Oldham, Rochdale and Stockport, both in terms of productions and attractions. These districts are also those that have seen the largest decreases in public transport, walking and cycling, as well as the smallest increases in car trips.

#### Congestion Levels

- 3.2.14 Over recent years the majority of traffic growth has occurred on the motorway network and this trend is forecast to continue with journey times on the M60 increasing by up to 50% between 2011 and 2026. Therefore, it is clear that the LDFs are going to have a significant impact on congestion on certain stretches of the motorway, with journey times on the majority of links increasing by 10% or more. The impact is varied around the M60, the section between the M66 and the M62 anti-clockwise seeing the largest increase in journey

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times over the period. The impact is greatest in the morning peak, however there are also significant increases in the evening peak.

- 3.2.15 The impact of the LDFs on the other sections of motorway in Greater Manchester is more varied. The most significant impacts in the morning peak are felt heading towards Manchester on the M67 and the M62 from both directions. The journey times on the M67 seeing an increase of 33% between 2011 and 2026. The impacts in the evening peak are less significant, the M62 towards Huddersfield experiencing the largest increase in journey times of 18% between 2011 and 2026.
- 3.2.16 Network-wide traffic growth on local roads is forecast to be lower than on motorways, with the impact on journey times at the bottom end of the range of increases seen for motorways. The decrease in speeds in the peak hours is 17% across all non-motorway roads, with vehicle kilometres having increased by between 17% and 19%.
- 3.2.17 The concentration of residential and employment development in the Regional Centre has been highlighted in this report. While this has had an impact in terms of arresting the decline in public transport patronage, it has also resulted in increased stress on the radial routes, with rising congestion hitting bus levels of service as well as private car travel times. The majority of the radial routes have seen increases in journey times in excess of 20% between 2011 and 2026, both inbound to the Regional Centre in the morning peak and outbound in the evening peak. The A56 (Bury), A635 (Stalybridge), A57 (Hyde), M602/A57 (Irlam), A580 (Boothstown) and A666 (Bolton) have all seen journey time increases in excess of 30%.

### 3.3 Forecast Changes in Land Use, Population and Employment

- 3.3.1 Although the approach taken to modelling planning policy inputs implies that all the inputs provided by the local planning authorities are assumed to be built, it is still possible to make some observation on whether the scale of proposed development is consistent with the overall levels of growth implied within the Accelerated Growth Scenario.

#### Employment

- 3.3.2 The number of people in employment within Greater Manchester is forecast to rise by around 173,000 (14.0%) over the period 2011 to 2026. The number of people in employment in those parts of the City Region beyond the Greater Manchester boundary is forecast to increase by around 73,000 (17.4%) during the same period.
- 3.3.3 There may be several contributory factors that explain this faster growth away from Greater Manchester:
- Increasing levels of congestion within the Regional Centre and surrounds may become a deterrent and businesses re-locate to other, less congested, areas.
  - The strategy of constraining growth in the southern parts of the County (including Stockport, Trafford and parts of the City of Manchester) may be having the effect of moving jobs further out into parts of Cheshire, Warrington and Derbyshire rather than deflecting growth to northern parts of the County. Although additional office floorspace is provided in these areas, this reflects the availability of employment sites

within Cheshire and parts of High Peak and the provision of transport schemes which improve access to jobs in these areas, which have lower rents.

- Certain of the planned transport schemes improve accessibility to and from areas beyond the boundary of Greater Manchester. Notable schemes include the planned construction of the Glossop Spur, the Mottram by-pass and the SEMMMS highway route between the Airport and A6.

3.3.4 The increase in employment within Greater Manchester is broadly consistent with the increase in the number of residents in employment.

#### **Residential Land**

3.3.5 Over the period 2011-2026 the LDF planning policy inputs imply a 17.0% increase in residential floorspace within Greater Manchester<sup>6</sup>. At the same time the model forecasts that the number of households increases by 15.2%. Therefore, the increase in the supply of residential floorspace is greater than the increase in households over this period.

3.3.6 The model forecasts that the proportion of households residing in city and town centre zones increases from 15.5% to 17.9%.

3.3.7 Occupancy rates increase as demand for floorspace rises. The increase in occupancy rates is greatest, over the period 2011-2026, within the city and town centre zones. However the occupancy rates in these centres in 2011 were typically lower than in the other parts of each local authority area. This higher rate of growth may be part of a catching-up process, possibly also reflecting constraints on the amount of residential development away from the centres.

#### **Office Floorspace**

3.3.8 Over the period 2011 to 2026 the LDF policies inputs imply a 41% increase in office floorspace within Greater Manchester. At the same time, the model forecasts that the number of people in office-based employment increases by 19.2%, implying that the rate of increase in floorspace is greater than the rate of increase in employment.

3.3.9 The model forecasts that the proportions of office employment in each district within the town and city centres decreases in Bolton, Bury, Oldham, Rochdale, Tameside, Trafford and Wigan, over the period 2011 to 2026. For example, in Oldham the proportion is forecast to decline from 37% of the Borough's office-based employment to 25%. In contrast the proportion of both Manchester and Salford's office-based employment increases.

3.3.10 This oversupply may reflect the requirement, within planning policy, to provide for a range of sites for employment activities. Such consideration may need to be better balanced with the need for sustainable development, and the location of development within those locations that can best be served by public transport.

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<sup>6</sup> The Land Use Model models square metres of residential floorspace rather than dwelling units. An increase in floorspace that is greater than that of households may thus reflect rising incomes and households being able to afford more space (ie a three bedroom property rather than a two bedroom one)



- 3.3.11 The fact that the model has assumed that all sites are developed may have contributed towards a dispersed pattern of office employment growth. If the modelling of development had taken into account market demand then some sites may not have been deemed sufficiently profitable to have been developed. It is not possible, with the testing strategy adopted for this study, to determine which locations these sites would have been in. Many of the sites in locations away from the town and city centres may have relatively good accessibility and are seen as being good locations for business.

#### **Industrial Floorspace**

- 3.3.12 Over the period 2011 to 2026 the LDF policy inputs imply a 4.7% increase in industrial floorspace within Greater Manchester. At the same time the model forecasts that the number of people employed in industrial-based employment decreases by 7%. The latter statistic reflects the AGS forecasts of a continuing decline in many of the County's traditional industries.

### **3.4 Inclusive and Liveable Communities**

- 3.4.1 The 2007 Index of Multiple Deprivation is published for Lower Super Output Areas (LSOAs). It ranks all LSOAs across England in terms of their level of deprivation as measured across a range of factors. Its use of output area geography represents a different geography to that used in defining the zones within the land use and transport models. Nevertheless it is possible to overlap the two sets of boundaries and identify those LSOA's that fall within each transport model zone. In analysing the forecast change in land use and population, we have considered the change that is occurring in those zones that overlap with the LSOAs that rank amongst the top 15% most deprived areas within the country.
- 3.4.2 At a county level the model forecasts that the number of people in employment living within these zones increases by 13.9% in the period 2011 to 2026. This compares to an increase of 1.7% in the numbers of people in employment living in the other zones within Greater Manchester.
- 3.4.3 Whilst it can't be assumed that this increase in zones overlapping with the areas of high deprivation will bring direct benefit to those currently living within these deprived communities – there may, for example, be a displacement effect with people moving into these areas from elsewhere because of their relative attractiveness to employment – the forecasts suggest that many of these areas will experience more people in work and presumably more money within the local economy.
- 3.4.4 The models are not able to give an indication as to where deprivation exists, it can merely be used to indicated changes in employment and this be correlated to the already deprived areas. Therefore, the model cannot be used to predict which areas will suffer from deprivation in the future, particularly if an area that is not currently deprived is to become deprived.

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