Technical Note

Project Title:	Assessing the Transport Impacts of the Local Development Framework
MVA Project Number:	C37840
Subject:	Oldham Transport Impacts of LDF
Note Number:	8 Version: 3
Author(s):	Lorraine Broadhurst
Reviewer(s):	James Blythe
Date:	17 December 2009

1 Introduction

1.1 The purpose of this Note is to summarise the transport impacts in Oldham of the Local Development Frameworks (LDF). This note is one of a series of outputs from a study into the potential transport impacts of the Local Development Frameworks (LDF) in Greater Manchester.

1.2 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 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 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.

1.4 The potential transport impacts of the LDFs across Greater Manchester are reported in the Final Report, along with a description of the methodology employed in analysing the transport impacts. This note focuses on the transport impacts in Oldham and should be read in conjunction with the Final Report.

2 Modelling Approach

2.1 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 of new capital investment in transport via the Transport Fund.

2.2 In order to test the impacts of these drivers, artificial test scenarios were created and run through the models. In each of these scenarios, the level of population and employment growth over time was constrained to control totals for the Fully Modelled Area (equating roughly to the City Region area). However, the location of the population and employment growth was determined by the land use model.

2.3 The employment and population control total inputs were based upon the Accelerated Growth Scenario from AGMA's economic forecasting model, the Greater Manchester Forecasting Model (GMFM), and Department for Transport's TEMPRO data. The control for the Fully Modelled 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.

2.4 The tests that are reported within this note 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.
- **Greater Manchester Proposals Scenario** which added the LDF development proposals and a package of transport interventions that were planned for the Transport Fund to the assumptions for the Do Minimum Scenario.

2.5 The transport schemes contained within each of the scenarios are described in detail in Technical Note 1 "Transport Strategy Assumptions".

2.6 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. It should be noted that the overall level of population and employment growth is constrained to a fixed level over the fully modelled area as described above. The areas where this growth is located is determined by the land use model considering the available development space and the accessibility of those developments.

2.7 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. In this case, the growth in population and employment has been catered for in already existing residential and employment buildings.

3 Land Use Inputs and Outputs

3.1 This section briefly outlines the inputs to the models in terms of the additional housing, office and industrial floorspace provided by the LDF developments, and goes on to summarise the change in population and employment in Oldham for the Greater Manchester Proposals Scenario between 2011 and 2026.

3.2 A summary of the LDF planning assumptions for Oldham are provided in Table 1, and the resulting change in population and employment is shown in Table 2. Whilst housing floorspace is anticipated to increase by 5% under the LDF proposals, and the number of households within

the district is forecast to increase by 4%, the population is actually forecast to decrease by 3% between 2011 and 2026. The LDF proposals see an increase in the provision of office floorspace of 81% within the district, with an increase in industrial floorspace of 5%. Office space will increase by 81% and industrial floorspace by 5%, however the level of employment is only forecasts to increase by 6%.

Table 1 Oldham LDF Land Use Inputs

	2011	2026	Difference
Housing	9,354,404	9,836,852	5%
Office	261,488	474,359	81%
Industrial	2,669,450	2,799,540	5%

Table 2 Oldham Population and Employment Forecasts - Greater Manchester Proposals Scenario

	2011	2026	Difference
Population	215,307	208,483	-3%
Households	92,228	95,924	4%
Jobs	87,504	92,696	6%

3.3 Figure 1 shows the distribution of population changes across the district between 2011 and 2026. Across much of Oldham there are forecast to be some major decreases in population particularly in the west of the district. The only zones that see forecast increases in population are those to the east of the town centre. There are some notable increases in population over the southern district boundary, in Tameside, and also just over the boundary in the Regional Centre.

3.4 The distribution of employment change, shown in Figure 2, shows some substantive increases in employment to the west of the district in particular in close proximity to the M60 and the two key motorway junctions in the district. There have also been some smaller increases in employment to the east of the town centre, but with the main zones in the town centre itself seeing decreases in employment.

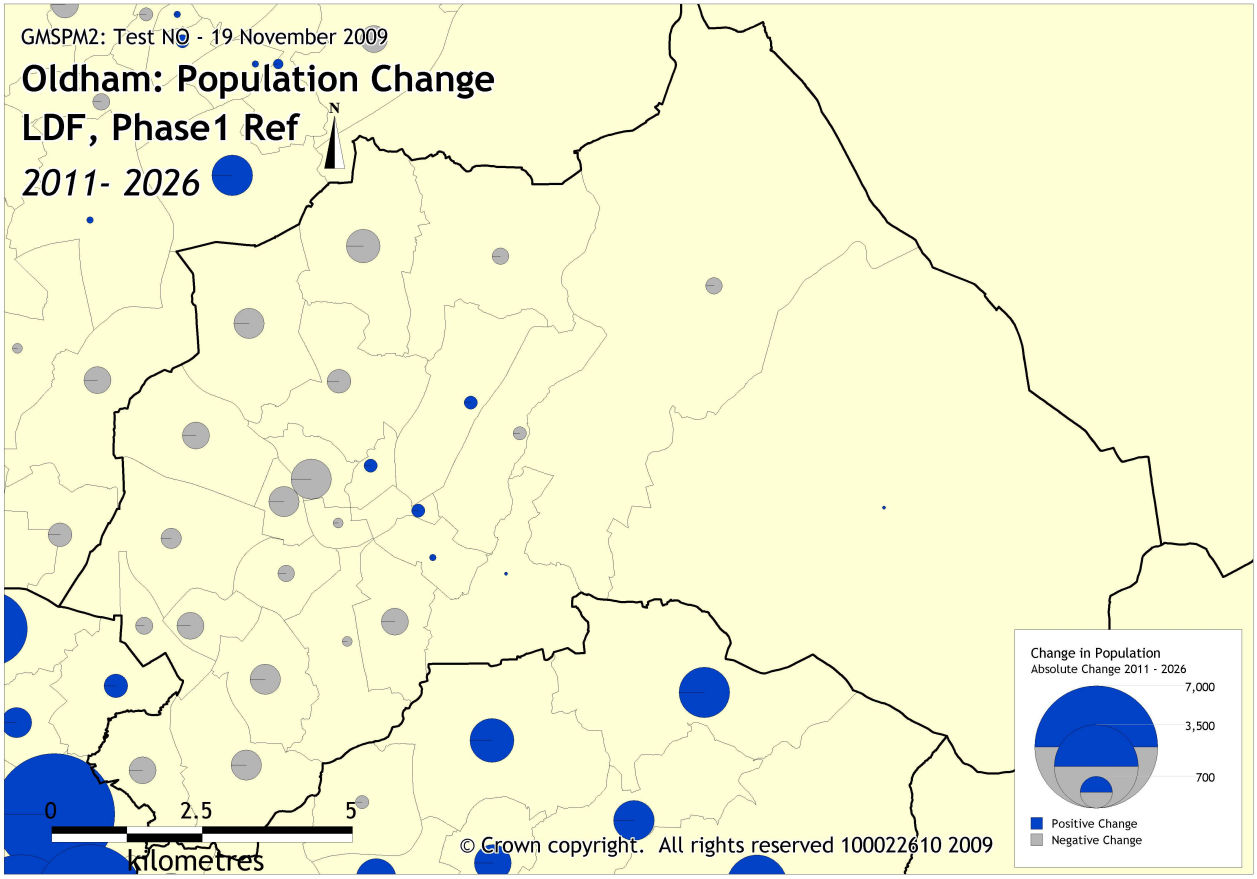


Figure 1 Oldham Population Change – Greater Manchester Proposals Scenario

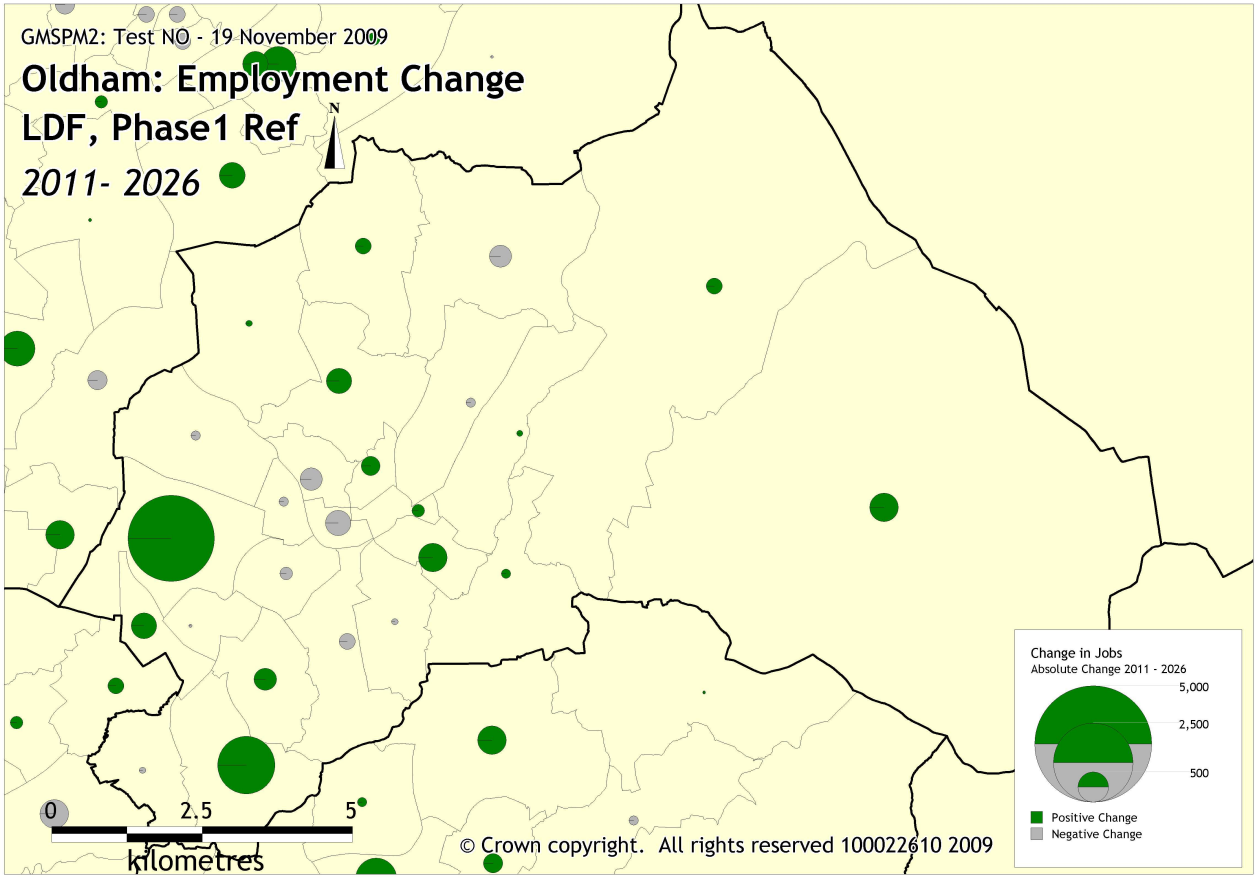


Figure 2 Oldham Employment Change - Greater Manchester Proposals Scenario

4 Transport Outputs

4.1 This section reports on the impact of the LDFs and the Transport Scenario on the transport networks over time.

Changes in Trip Making

4.2 Table 3 shows the forecast impact on the demand for travel in the Do Minimum scenario, which reflects changes in population and employment levels, changes in car ownership, and changes in the cost of travel over time, but without considering the location of new developments. Overall the number of trips increases for both productions and attractions by 5%. There are significant increases in the number of car trips in this scenario, with public transport, walking and cycling decreasing significantly.

4.3 The model forecasts for the greater Manchester Proposals Scenario are shown in Table 4, which show lower levels of increases in trip making across Oldham between 2011 and 2026 than seen in the Do Minimum Scenario. Overall, the number of trip productions over this period does note change, the main influence on this being the decrease in the level of population. Car trip productions are increasing over the period, with significant decreases for public transport, walking and cycling. There is a slight increase in the number of trip attractions, which is consistent with the increase in employment in the district. There are significant increases in car

trip attractions but once again there are significant decreases in public transport, walking and cycling trips.

Table 3 Change in Oldham Home Based Trip Productions and Attractions – Do Minimum

	2011	2,026	Difference
Productions			
Car	161,090	184,550	15%
Public Transport	21,993	19,992	-9%
Walk/Cycle	77,217	69,525	-10%
Total	**260,300**	**274,067**	**5%**
Attractions			
Car	157,753	180,268	14%
Public Transport	16,432	14,523	-12%
Walk/Cycle	76,756	68,341	-11%
Total	**250,941**	**263,132**	**5%**

Table 4 Change in Oldham Home Based Trip Productions and Attractions – Greater Manchester Proposals Scenario

	2011	2026 P1R	Difference
Productions			
Car	161,090	175,088	9%
Public Transport	21,993	19,131	-13%
Walk/Cycle	77,217	65,591	-15%
Total	**260,300**	**259,811**	**0%**
Attractions			
Car	157,753	178,973	13%
Public Transport	16,432	14,587	-11%
Walk/Cycle	76,756	65,583	-15%
Total	**250,941**	**259,143**	**3%**

4.4 The change in the number of trips to, from and within Oldham between 2011 and 2026 are shown in Table 5. For car based trips increases are seen across all four time periods with the biggest increase being seen during the rest of the day. Public transport trips are forecast to decline, with the exception of the off peak, with the decreases being most significant in the inter-peak period. The congestion on the highway network, together with the concentration of employment development within the Regional Centre, will result in the lower impact on public transport patronage seen in the peak periods.

Table 5 Change in Trips to/from/within Oldham – Greater Manchester Proposals Scenario

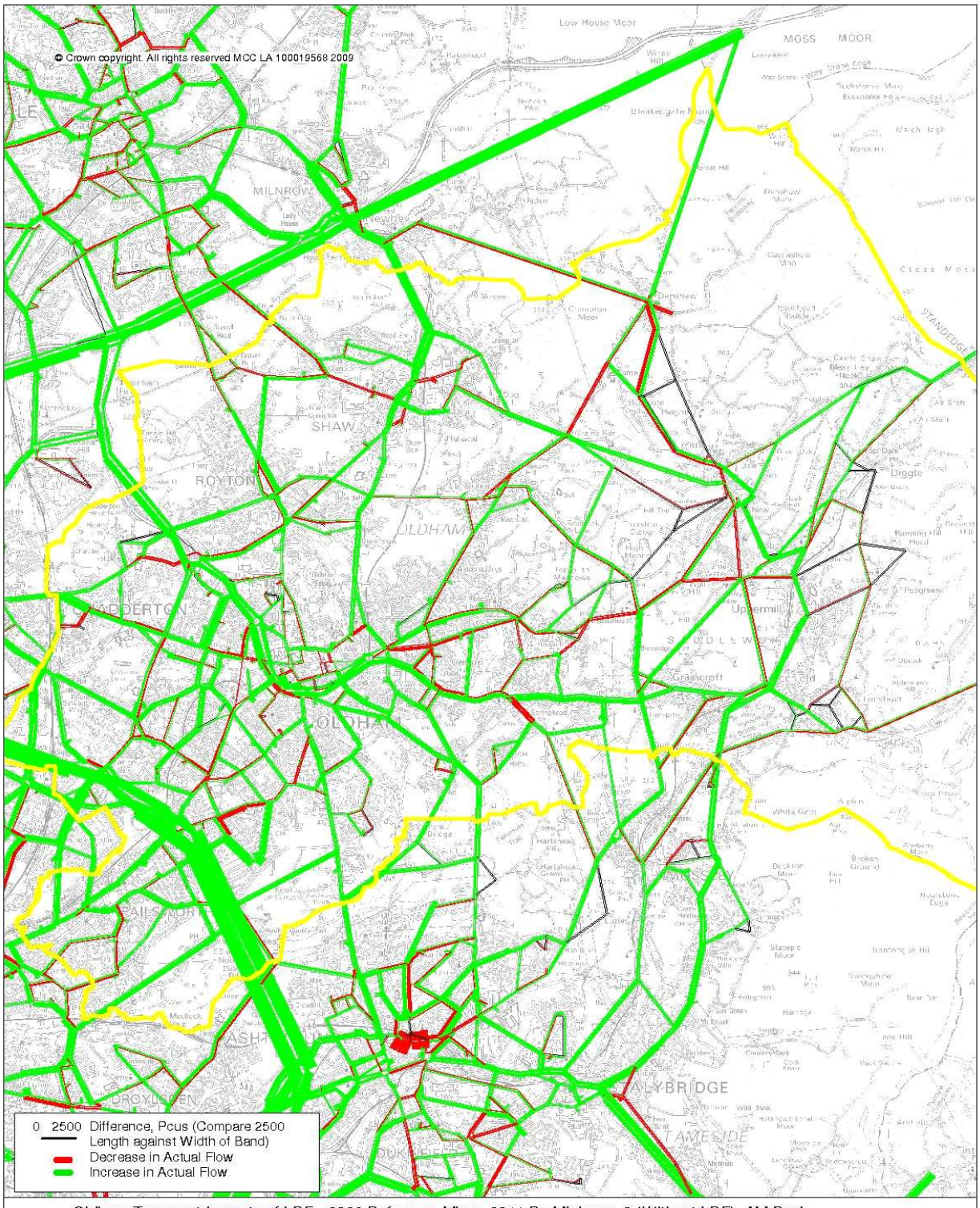
	2011	2026	Difference
Car			
Morning Peak	126,670	141,647	+12%
Inter-peak	203,800	225,479	+11%
Evening Peak	159,833	177,540	+11%
Rest of Day	83,838	95,619	+14%
TOTAL	**574,141**	**640,284**	**+12%**
Public Transport			
Morning Peak	16,674	15,366	-8%
Inter-peak	23,519	21,208	-10%
Evening Peak	16,984	15,994	-6%
Rest of Day	5,584	5,614	+1%
TOTAL	**62,761**	**58,183**	**-7%**

Impact on the Highway Network

4.5 The forecast morning peak traffic flows for 2026 are shown in Figure 3, with the changes in flows from 2011 shown in Figure 4. The morning peak flows are forecast to be heaviest along the M60 and main radial routes to/from Oldham and roads around Oldham town centre. In Figure 4 many of the road links to the east of the district are forecast to show decreases in flows as are some of the roads to the west of the town centre, which are a reflection of the forecast changes in population and employment. The most significant increases are noted as being on the M60, which will be a result of the location of new employment developments in this area.

4.6 Figure 5 shows the links in Oldham where the volume to capacity ratio exceeds 85% in 2011, and Figure 6 presents the same information in 2026. by 2011 there are some capacity issues to the west of the town centre particularly closer to the motorway and these seem to get worse by 2026 and some new capacity problems to the east of Oldham town centre, where the instances of population and employment increases are located. Much of the employment growth is forecast to occur in the west of the district, which results in a number of junctions around the M60 becoming at or near to capacity over the period 2011 to 2026.

Figure 3 2026 Morning Peak Traffic Flows in Oldham - Greater Manchester Proposals Scenario



Oldham Transport Impacts of LDF - 2026 Reference Minus 2011 Do Minimum 2 (Without LDF), AM Peak
Difference in Actual Flows (PCUs/Hr)

GMTU SALISBURY HOUSE GRANBY ROW MANCHESTER M1 7AH	Mike Killian	Date : 13/10/2009
	Not to Scale	Note Number 6, V1

Figure 4 Change in Morning Peak Traffic Flows in Oldham between 2011 and 2026 - Greater Manchester Proposals Scenario

mvaconsultancy

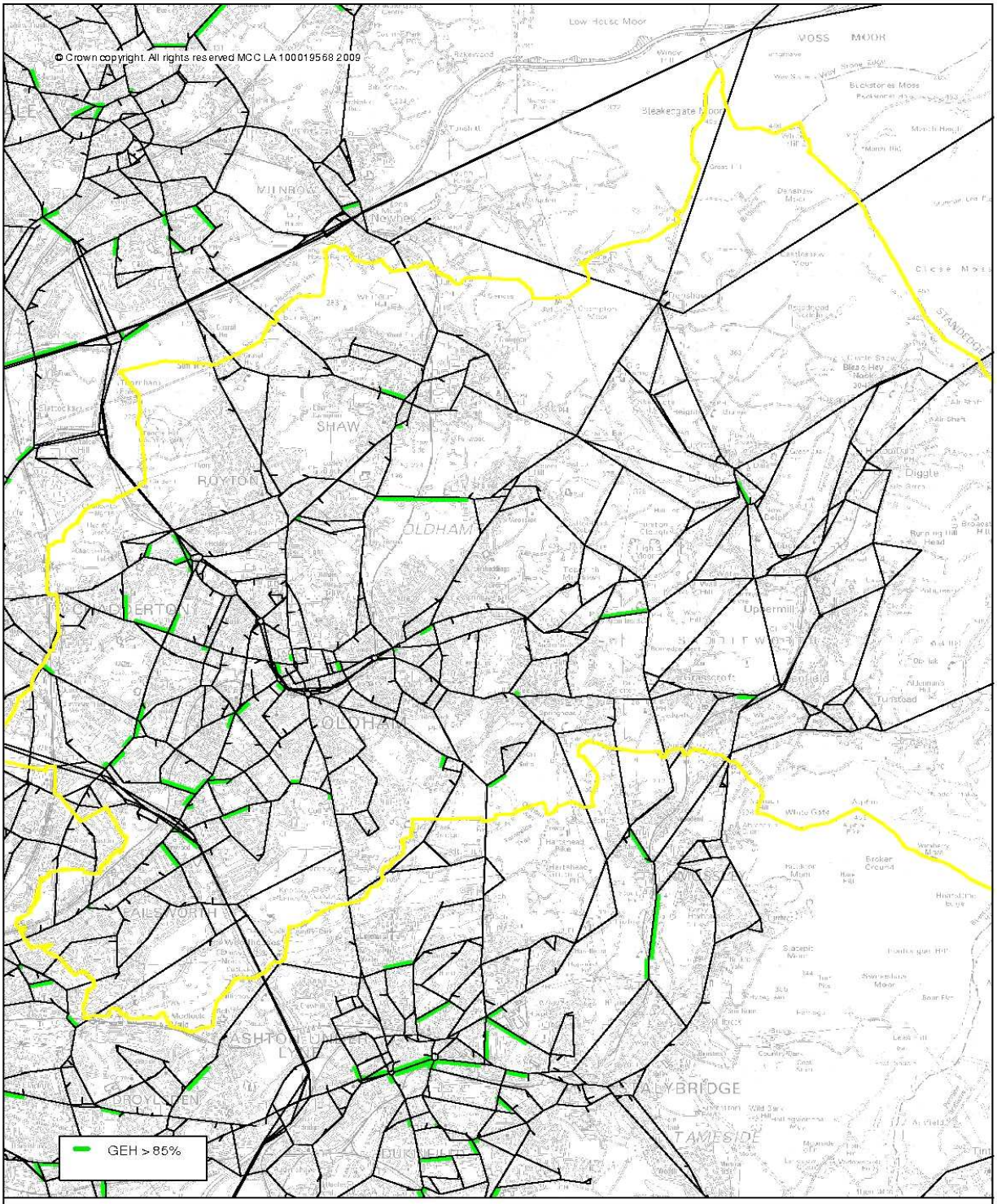


Figure 5 Road Links in Oldham with Volume/Capacity Greater than 85% in 2011 - Greater Manchester Proposals Scenario

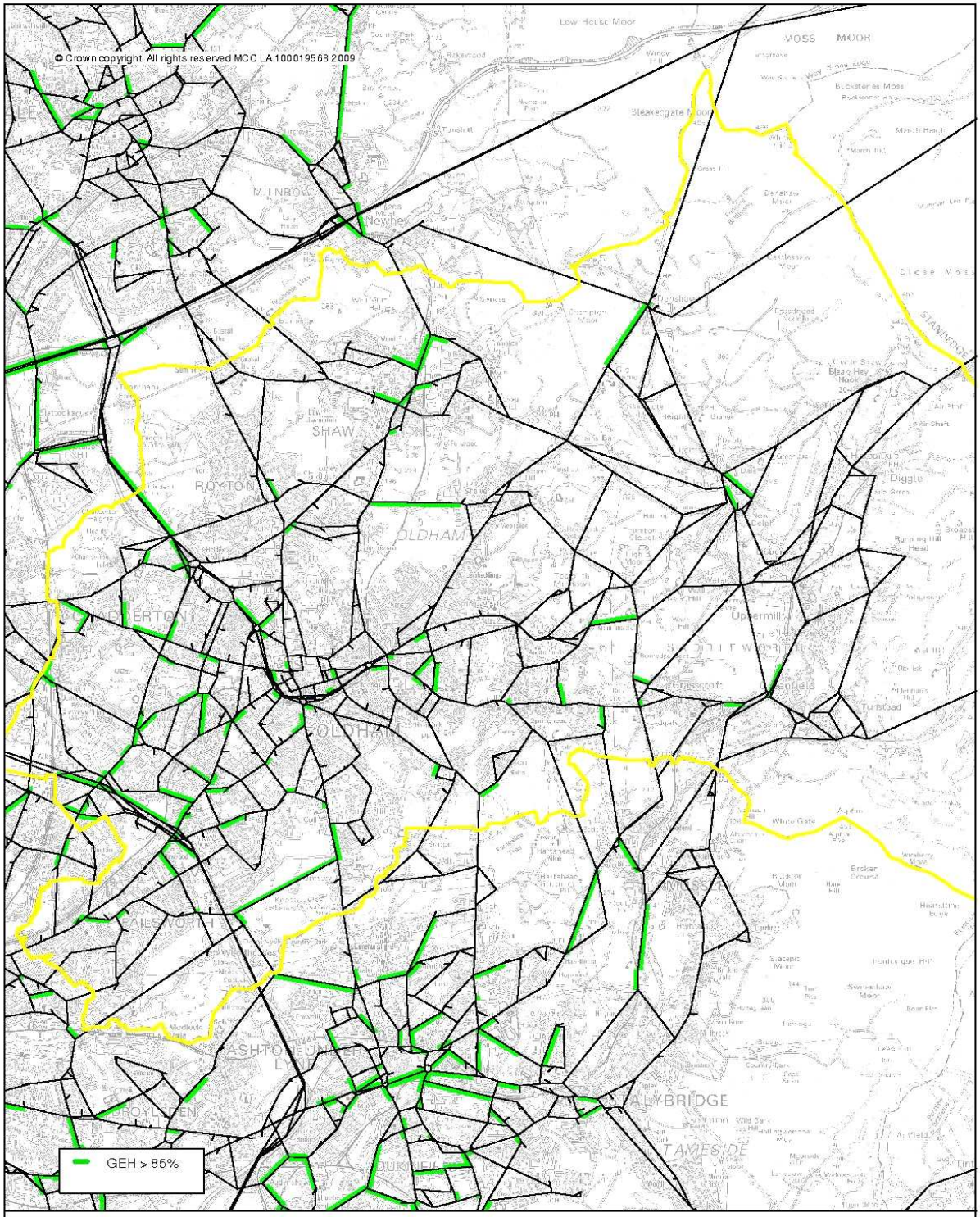


Figure 6 Road Links in Oldham with Volume/Capacity Greater than 85% in 2026 - Greater Manchester Proposals Scenario

Impact on Journey Times

4.7 The forecast changes in Motorway journey times within Oldham are shown in Table 6. The biggest increase in journey times is seen on the M60 clockwise between junctions 20 and 22 in the morning peak., with there also being a significant increase on this section in the evening peak. The journey time increases clockwise on the M60 represent increases of more than a minute, and in the case of the morning peak an increase of nearly two minutes. These increases are consistent with the increases in traffic expected as a result of the concentration of employment development near to the M60.

4.8 Table 7 shows the changes in journey times on the key radial routes into the Regional Centre, which are increasing over time with flows inbound in the morning and outbound in the evening showing the biggest increases. This increase in the morning peak represent an increase of over 7 minutes, and will result from increased levels of commuting to the Regional Centre where the employment development across Greater Manchester is concentrated.

4.9 The model forecasts are also suggesting significant impacts on some of the key routes in Oldham. In the morning peak the biggest increase is forecast to occur on the A672 between Oldham and the M62, and many of the links between Oldham and the M60 are showing higher increases in comparison to other parts of the network. In the evening peak the increases to journey time are not as big with the largest increase being forecast for the A663 between the A62 and the A627(M).

Table 6 Change in Motorways Journey Times in Oldham – Greater Manchester Proposals Scenario

	Morning Peak			Evening Peak		
	2011	2026	Diff	2011	2026	Diff
M60 Clockwise						
J20 to J22	4:29	6:22	42%	4:02	5:13	29%
M60 Anticlockwise						
J22 to J20	3:52	4:33	18%	4:14	4:40	11%

Table 7 Change in Oldham to Regional Centre Journey Times - Greater Manchester Proposals Scenario (Minutes : Seconds)

	Morning Peak			Evening Peak		
	2011	2026	Diff	2011	2026	Diff
Oldham to Regional Centre						
Oldham to Regional Centre via A62	25:44	32:52	28%	25:09	27:37	10%
Regional Centre to Oldham						
Regional Centre to Oldham via A62	24:45	26:28	7%	25:06	30:48	23%

Table 8 Change in Journey Times on Major Routes in Oldham – Greater Manchester Proposals Scenario

	Morning Peak			Evening Peak		
	2011	2026	Diff	2011	2026	Diff
Oldham to Ashton via A627	10:40	12:50	20%	10:26	10:46	3%
Ashton to Oldham via A627	11:06	11:36	4%	11:05	13:23	21%
Oldham to Rochdale via A671	15:53	19:06	20%	15:36	18:49	21%
Rochdale to Oldham via A671	16:57	19:57	18%	15:24	16:41	8%
A62 Oldham to WY Bdy	12:28	13:59	12%	12:34	13:20	6%
A2 WY Bdy to Oldham	12:59	15:15	18%	12:26	12:33	1%
A669/A670 Oldham to WY Bdy	16:15	17:38	8%	18:10	19:59	10%
A670/A669 WY Bdy to Oldham	15:45	18:41	19%	15:03	15:18	2%
A672 Oldham to M62 J22	10:13	15:40	53%	21:44	24:09	11%
A672 M62 J22 to Oldham	12:30	15:44	26%	12:39	14:59	18%
A669/A576 Oldham to M60 J19	16:48	20:58	25%	16:15	18:28	14%
A576/A669 M60 J19 to Oldham	17:39	18:49	7%	15:37	17:44	14%
A663 A62 to A627M	11:11	12:19	10%	13:18	16:16	22%
A663 A627M to A62	13:03	15:38	20%	12:25	13:51	12%
M60 CW J20 to J22	4:29	6:22	42%	4:02	5:13	29%
M60 ACW J22 to J20	3:52	4:33	18%	4:14	4:40	11%

Impact on Public Transport

4.10 The forecast changes in public transport boardings and alightings in Oldham are shown in Table 9. There is a consistent decline in bus boardings and alightings across all three time periods, with a corresponding increase in tram boardings and alightings across the day. The switch from bus to tram being seen will be a result of a combination of the increases in values of time, congestion on the road network and the extension of the Metrolink network through Oldham town centre. The impact of the Metrolink expansion can be seen in particular for morning peak alightings and evening peak boardings, as well as both boardings and alightings in the inter-peak.

Table 9 Change in Oldham Public Transport Boardings and Alightings– Greater Manchester Proposals Scenario

	Boardings			Alightings		
	2011	2026	Diff	2011	2026	Diff
Morning Peak						
Bus	3,412	3,069	-10%	2,948	2,573	-13%
Rail	125	126	1%	6	6	-8%
Tram	1,590	1,628	2%	397	648	63%
TOTAL	**5,127**	**4,823**	**-6%**	**3,351**	**3,227**	**-4%**
Inter-peak						
Bus	2,641	2,228	-16%	2,477	2,092	-16%
Rail	20	21	2%	8	8	0%
Tram	841	1,025	22%	518	705	36%
TOTAL	**3,502**	**3,274**	**-7%**	**3,003**	**2,804**	**-7%**
Evening Peak						
Bus	2,894	2,530	-13%	3,320	3,074	-7%
Rail	21	19	-8%	28	29	4%
Tram	709	951	34%	1,153	1,328	15%
TOTAL	**3,624**	**3,500**	**-3%**	**4,501**	**4,431**	**-2%**

Impact on Environmental Indicators

4.11 The forecast change in the environmental indicators in Oldham is shown in Table 10. The model forecasts have included the Department for Transports guidance that fuel efficiency will improve over time and that engine standards for emissions will continue to improve. This means that despite the increases in traffic levels, NO_x emissions to reduce by 17% over the period 2011 and 2026. However, PM_{10} and CO_2 emissions are forecast to continue increasing, the CO_2 increase being 14%.

Table 10 Environmental Indicators in Oldham – Greater Manchester Proposals Scenario

	2011	2026	Difference
NOx	654	541	-17.3%
PM10	75	82	+10.2%
CO_2	62,314	74,399	+19.4%

5 Summary

5.1 The population in Oldham is forecast to decrease by 3% over the period 2011 to 2026, despite an increase in the supply of housing floorspace of 5% and an increase in the number of households of 4%. The vast majority of zones in the district experience a fall in the level of population, the exception to this being zones to the east of the town centre. Employment in the district increases by 6% with the biggest increases being forecast to the west of the district closest to the motorway network, but again with increases to the east of the town centre and the very east of the district.

5.2 The forecast changes in overall trip making in the Greater Manchester Proposals Scenario for Oldham are low over the period, which is consistent with changes in population and employment. The forecast number of trip productions is actually unchanged in 2026 from the 2011 level, which is largely a result of the decline in population. The number of car trips increases for both productions and attractions, being more significant for attractions, and there are significant decreases forecast in the number of public transport, walking and cycling trips. Changes in car trips are at a fairly consistent rate across the day, but public transport trips decrease by a lesser extent in the peak periods as a result of the congestion on the highway network and the impact of additional commuting trips into the Regional Centre.

5.3 The impact of the increasing number of car trips on the highway network is most noticeable on the M60 and the roads in the vicinity of the M60. This is consistent with the location of new employment close to the M60, and reflects the importance of the accessibility of the developments by car in attracting employment. In addition to the M60 area, the increases in population and employment to the east of the town centre is contributing to more junctions operating at or close to capacity. Journey times on a number of key routes are forecast to increase, most notably the following:

- M60 clockwise between junctions 20 and 22;
- the key radial routes into the Regional Centre; and
- roads between Oldham and the motorway network

5.4 Public transport patronage is in decline across the district, particularly for bus, which will be a result of the increasing relative cost of bus compared to car, and the increased congestion on the highway network also impacting on bus journey times. There is a shift to tram from bus for public transport journeys in the district. This is particularly noticeable for alightings in the morning peak and boardings in the evening peak, suggesting use of the extension of the Metrolink line into the town centre for commuting.

5.5 The model inputs have assumed that fuel efficiency of vehicles is improving through time, and that engine standards for emissions continue to increase. Therefore, NO_x emissions are forecast to reduce by 17% between 2011 and 2026 even though traffic levels are increasing. PM_{10} and CO_2 emissions are forecast to increase.