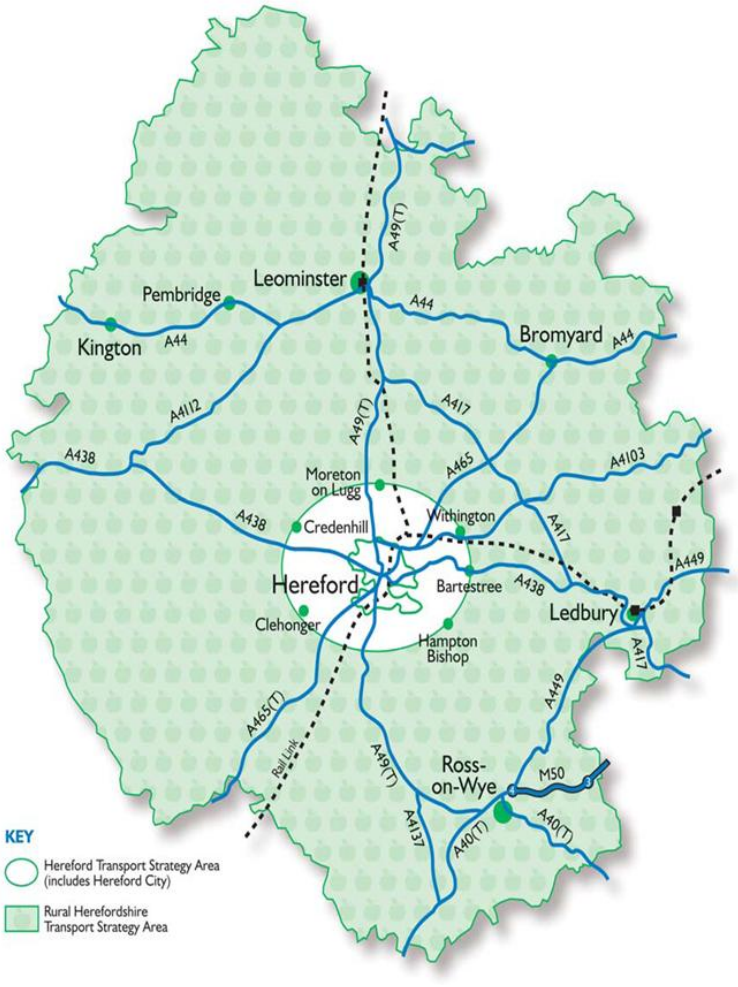
Local Plan Core Strategy Modelling

Non-Technical Summary

Document reference: Final

Revision: 001

Issued: June 2013



Document Control Sheet

Project Name:	Local Plan Core Strategy Modelling
Project Number:	CO00551674
Document / Report Title:	Non-Technical Summary
Document / Report Number:	Final

Issue Status/Amendment	Prepared	Reviewed	Approved
Issue 0	Name: Andrew Walford Signature: Date: June 2013	Name: Shaun Moore Signature: Date: June 2013	Name: Andrew Walford Signature: Date: June 2013
(Enter Details of Amendment)	Name: (print) Signature: Date:	Name: (print) Signature: Date:	Name: (print) Signature: Date:
(Enter Details of Amendment)	Name: (print) Signature: Date:	Name: (print) Signature: Date:	Name: (print) Signature: Date:
(Enter Details of Amendment)	Name: (print) Signature: Date:	Name: (print) Signature: Date:	Name: (print) Signature: Date:

This page is deliberately left blank to ensure that the executive summary is always printed on a separate, individual sheet, even when using full duplex.

Contents

1. Introduction 1

2. Policy 3

3. Initial Results 4

4. Conclusion 7

4.2. Summary 7

4.3. Recommendations 8

5. Glossary 9

5.1. Definitions of Highway Names 9

List of Tables

Table 1: Combined direction Journey Times (minutes) 4

Table 2: Combined direction Journey Time Savings (minutes) 4

Table 3: Two-way Traffic flow crossing the River Wye 4

Table 4: Junction delay - % of significant junctions operating over capacity (=>85% RFC) 5

Table 5: Co^2 Emissions (Kg) 5

Table 6: Co^2/Co/NOX at Bridge Crossing (Kg) 5

Table 7: Percentage mode share AM/PM 6

1. Introduction

1.1. This note provides a summary of the outcomes of Local Plan Core Strategy transport modelling project which sets the way forward for the Local Plan Core Strategy and its supporting transport strategy for Hereford.

1.2. The Local Plan Core Strategy sets out the council's land use proposals to drive economic growth in the county through development to deliver new homes and jobs up to 2032. Much of this development is focused on Hereford and includes projects such as the Hereford Enterprise Zone at Rotherwas as well as significant housing developments.

1.3. The process being followed in the development of the transport strategy for Hereford to support the Local Plan Core Strategy is based upon Department for Transport guidance and has been agreed with the Highways Agency. Following this guidance offers a number of benefits:

- Projects which follow the guidance are likely to be supported and endorsed by central Government and the Highways Agency.
- Ensures an auditable approach suitable for public inquiries
- Provides supporting evidence to help secure funding support and
- Delivers value for money ensuring we deliver the right schemes, in the right place at the right time.

1.4. The aim of the Local Plan Core Strategy modelling project is to test that a 'with road' option in 2032 i.e. with Western Relief road (WRR) will deliver journey times on the new A49 WRR that are a significant improvement over journeys times on the existing A49 without the WRR in 2032. The modelling will also help identify a preferred transport strategy for Hereford's transport network to support the Local Plan Core Strategy which in turn will provide the basis for the Belmont Transport Package and Hereford Enterprise Zone Transport Assessment projects.

1.5. The transport model used in the tests, which the Highways Agency has agreed is 'fit for purpose' following its recent refresh, is capable of modelling a wide range of transport schemes and projects to reliably forecast transport conditions in the future, including:

- 'Smarter Choice' projects including workplace and school travel plans and travel awareness campaigns
- Walking and cycling schemes
- New bus routes and services and park and ride schemes
- Changes to parking tariffs and fuel costs and
- Junction capacity improvements and new roads

1.6. The model is able to predict the travel choices made in the light of the Council's chosen transport strategy. In general terms therefore, whilst travel cost is the biggest driver in travel mode choice, the journey time is more important than the distance travelled.

1.7. To test the 'no road' and 'with road' options Amey, in consultation with council officers, designed two transport scenarios. These scenarios, which were agreed with the Highways Agency, contained a wide range of schemes and projects designed to realistically represent the two different transport networks in 2032. The principal difference between them was that the 'with road' option contained a Western Relief road, as well as park and ride sites and bus priority measures to give park and ride users an advantage over car users.

1.8. Both the 'no road' and 'with road' options were tested with the growth assumptions contained in the Local Plan Core Strategy. Both of the scenarios are tested for the morning and evening peak periods. The results are shown later in this report.

2. Policy

2.1.1. The current policy context provides strong support for Herefordshire's transport investment programme.

2.1.2. The Government White Paper – Creating Growth, Cutting Carbon: Making Sustainable Local Transport Growth Happen, published January 2011, sets out a number of transport objectives:

- Economic growth – reducing congestion and enabling access
- Carbon Dioxide – reducing emission of greenhouse gases
- Health – encouraging physical activity, reducing accidents, improving air quality and reducing noise; and
- Access to public transport.

2.1.3. The Marches 'Strategy for Growth 2013-2022' document identifies two cross cutting themes with reference to transport:

- Achieving connectivity across the Marches, across the UK and across world markets and
- A low carbon approach to delivering economic growth across the Marches Local Enterprise Partnership

2.1.4. At the local level Herefordshire's Local Transport Plan contains two key transport objectives:

- Reducing congestion in Hereford City and increasing accessibility by less polluting and healthier forms of transport than the private car; and
- Maintaining access for rural residents and people without access to a car.

2.1.5. In summary, the transport objectives, against which the Council's transport packages and programmes must be appraised, comprise their ability to:

- Reduce congestion and delay and provide access to development;
- Reduce emissions of carbon dioxide through behaviour change and provide facilities for sustainable transport including public transport; and
- Improve health outcomes by reducing accidents and noise and by encouraging physical activity.

3. Initial Results

3.1.1. The initial results presented below, help show the extent to which the Local Plan transport strategy would deliver against the Council' policy objectives.

- Economic Growth – Tables 1, 2, 3, 4 & 7
- Carbon Dioxide –Tables 5 & 6
- Health – Table 7
- Access to Public Transport - Table 7

Table 1: Combined direction Journey Times (minutes)

Road	2012 Base		2032 'No Road'		2032 'With Road'	
	AM	PM	AM	PM	AM	PM
A49	26	33	42	48	44	44
WRR	-	-	-	-	24	25

Table 2: Combined direction Journey Time Savings (minutes)

Peak Hour	2032 'No Road'	2032 'With Road'	Saving using WRR (%)
AM	42	24	18 (%)
PM	48	25	23 (48%)

Table 3: Two-way Traffic flow crossing the River Wye

Peak Hour	2012 Base		2032 'No Road'		2032 'With Road'	
	Vehicles	% Change from base	Vehicles	% Change from base	Vehicles	% Change from base
AM	4063	-	3896	-4.1	4874	20
PM	4211	-	4185	-0.6	5355	27.2

Table 4: Junction delay - % of significant junctions operating over capacity (=>85% RFC)			
Peak Hour	**2012 Base**	**2032 'No Road'**	**2032 'With Road'**
AM	39	61	54
PM	36	52	43

Table 5: Co^2 Emissions (Kg)						
Peak Hour	**2012 Base**		**2032 No Road**		**2032 With Road**	
	Co^2 (kg)	**% Change from base**	**Co^2 (kg)**	**% Change from base**	**Co^2 (kg)**	**% Change from base**
AM	6511	-	8334	28	9136	40
PM	6178	-	8304	34	9763	58

Table 6: Co^2/Co/NOX at Bridge Crossing (Kg)					
	Emissions	**AM**		**PM**	
		Greyfriars	**WRR Midpoint**	**Greyfriars**	**WRR Midpoint**
2012 Base	Co^2	161	-	148	-
	Co	18	-	16	-
	NOX	4	-	4	-
2032 No Road	Co^2	159	-	156	-
	Co	18	-	17	-
	NOX	4	-	4	-
2032 With Road	Co^2	129	100	110	130
	Co	14	4	12	6
	NOX	3	2	3	2

Table 7: Percentage mode share AM/PM						
Mode Type	**2012 Base**		**2032 No Road**		**2032 With Road**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**
Car	23807 (68%)	25045 (75%)	27728 (61%)	31306 (69%)	27924 (62%)	31665 (70%)
Goods	4303 (12%)	2573 (8%)	6590 (15%)	5285 (12%)	6590 (15%)	5285 (12%)
Public Transport	2249 (6%)	1993 (6%)	4996 (11%)	3720 (8%)	4519 (10%)	3377 (7%)
Park & Ride	-	-	-	-	539 (1%)	217 (<1%)
Walk & Cycle	4836 (14%)	3982 (12%)	5978 (13%)	4773 (11%)	5720 (13%)	4540 (10%)
Total (Percentage)	35195 (100%)	33593 (100%)	45292 (100%)	45084 (100%)	45292 (100%)	45084 (100%)

4. Conclusion

4.1.1. The results set out above show that:-

- Combined direction journey time. The 'with road' option would significantly reduce journey times in 2032 on the A49 between the northern and southern limits of the city in comparison with those recorded for the 'no road' option – a reduction of 43% and 48% for the AM and PM peak periods respectively. The reductions in combined journey time recorded by the 'with road' option are also an improvement on existing journey times (2012).
- Traffic flows crossing the River Wye. In comparison to base year flows, traffic flows are forecast to fall in response to the 'no road' scenario but increase in response to the 'with road' scenario. This is primarily because of the additional road capacity, particularly a new bridge crossing, provided in the 'with road' scenario.
- Junction delay. Vehicle delay at a number of junctions across the city, including some on the Western Relief road, show that more junctions would experience an increase in delay in the 'no road' scenario than in the 'with road' scenario. A proportion of junction delay in the 'with road' scenario is due to bus priority measures and also to a lack of capacity / excess demand at junctions on the Western relief road.
- CO2 emissions. CO2 emissions are forecast to increase in both the 'no road' and 'with road' scenarios. This increase is due partly to additional development traffic and partly to additional mileage in the WRR option. It is worth noting, however, that CO2 levels in the city centre (measured on Greyfriars Bridge) do show CO2 levels in the 'with road' option falling compared to the base year because more traffic has transferred to the Western Relief road. Measured levels of Carbon Monoxide (CO) and NOX are virtually static between base and 'No road' options. The 'with road' option again shows reductions in CO and NOX in the city centre compared to the base year
- Modal Splits. Percentage reductions in car and percentage increases in public transport are most noticeable in the AM peak compared with the PM peak. Walk/ Cycle percentages are disappointingly flat, showing little change across the scenarios. Whilst actual car numbers rise in the 'No road' option compared to the base year, there is less of an increase in the 'With Road' option as the new road provides alternative travel options.

4.2. Summary

4.2.1. The results from this initial group of tests demonstrate clearly that the 'with road' option is the only option which can help deliver the Core Strategy and meet HA requirements for nil detriment in journey times on the A49.

4.2.2. Nevertheless it also identifies that whilst this option will deliver these economic objectives, and to some extent objectives regarding public transport, it makes little improvement in terms of increased health through active travel. Whilst overall CO2 emissions in the 'With Road' option increase due to traffic on the Western Relief road, actual levels in the city will reduce.

4.3. Recommendations

4.3.1. Next Steps

- Address any validation issues in model including model tidying for sign off by HA.
- Run all remaining model outputs to give inter peak and 2032 Do Minimum scenario and provide the full detailed report with outputs for review by HC/HA
- Review results against sought policy outcomes, both local and national, and refine strategy, and identify potential areas for change and re run the models to seek increased convergence between model outputs and policy objectives.
- Review phasing and trigger points for transport strategy mitigation and in particular review WRR link flows, link benefits and recommended outline construction specification.
- Carry out detailed junction assessments at poorly performing junctions to improve strategy performance.

5. Glossary

5.1. Definitions of Highway Names

5.1.1. **Western Relief Road(WRR)** – Strategic route from A49 /B4399 Rotherwas Access Rd (RAR) junction in south, running around the western side of the city with junctions at various radial routes, culminating in a junction with A4103/A465. This road comprises a number of individual links as follows:-

- **Southern Link Rd (SLR)** - Strategic route forming part of the WRR extending from A49/RAR junction to junction with A465/B4349.
- **Wye Link Rd** – Strategic route forming part of the WRR extending from A465/B4349 junction, over the River Wye to a junction with A438.
- **Three Elms Link** - Strategic route forming part of the WRR extending fromA438 to A4103 (west of Tillington Rd).
- **Holmer West Link** - Strategic route forming part of the WRR extending from A4103 (west of Tillington Rd) to A49 on the northern edge of city.
- **Holmer East Link** - Strategic route forming part of the WRR extending from A49 to A4103/A465