

**Staffordshire Moorlands
District Council**

Development Capacity Study
Stage 1: Settlement Appraisal
Final Report
October 2008

Halcrow Group Limited

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Contents

1	Introduction	1
1.1	<i>About the Commission</i>	1
1.2	<i>Purpose</i>	1
1.3	<i>Aims</i>	2
1.4	<i>Structure of the Report</i>	3
1.5	<i>Notes on the Nature of the District</i>	3
2	Stage One Methodology	5
2.1	<i>Introduction</i>	5
2.2	<i>Gathering data on Social Infrastructure</i>	6
2.3	<i>Gathering data on Physical Infrastructure</i>	11
2.4	<i>Gathering Data on Accessibility</i>	13
2.5	<i>Assessment of Settlements</i>	22
2.6	<i>Assessment of Core Strategy Options</i>	23
3	Stage One Results	24
3.1	<i>Introduction</i>	24
3.2	<i>Results of Social Infrastructure Assessment</i>	24
3.3	<i>Results of Physical Infrastructure Assessment</i>	28
3.4	<i>Results of Accessibility Assessment</i>	32
3.5	<i>Overall Settlement Results</i>	40
4	Core Strategy Analysis	41
4.1	<i>Introduction</i>	41
4.2	<i>Spatial Strategy</i>	41
4.3	<i>Appraisal of Town Based Development Scenario</i>	42
4.4	<i>Appraisal of Town and Larger Village based development Scenario</i>	44
4.5	<i>Appraisal of Distributed Development Scenario</i>	46
4.6	<i>Appraisal of Focused Development Scenario</i>	47
4.7	<i>Appraisal of Preferred Option Scenario</i>	49
4.8	<i>Conclusions</i>	50
	Appendix One	52
	Appendix Two	53
	Appendix Three	57
	Appendix Four	59

Figures

- 2.1 Example of Stage One Scoring Table
- 2.2 Study area composition (Urban / Rural)
- 2.3 Bus Network in the Staffordshire Moorlands
- 2.4 Local accessibility in the morning peak (0730-0930)
- 2.5 Network Access to the Nearest Town or Village Centre in the Morning Peak
- 2.6 Local bus network with the Intra-Urban network
- 3.1 Results of Social Infrastructure Analysis in Plan Form
- 3.2 Results of Physical Infrastructure Analysis in Plan Form
- 3.3 Standard Frequency Local Accessibility
- 3.4 High Frequency Local Accessibility
- 3.5 Standard Frequency Local Accessibility and the Intra-Urban Bus Network
- 3.6 Network Accessibility
- 3.7 Network Accessibility and the Intra-Urban Bus Network
- 3.8 Access to the Main Road Network

Tables

- 1.1 List of Settlements Included in the Study
- 2.1 Scoring System for Social Infrastructure Categories and Facilities
- 2.2 Scoring System for Physical Infrastructure Categories
- 2.3 Local Accessibility Criteria (Expressed as Standard Frequencies)
- 2.4 Scoring System for Accessibility Categories
- 3.1 Results of Social Infrastructure Analysis in Table Form
- 3.2 Results of Physical Infrastructure Analysis in Table Form
- 3.3 Local Settlement Accessibility Weighted by Population (distance from settlement capped at 2.5km)
- 3.4 Local Settlement Accessibility Weighted by Population (distance from settlement capped at 5km)
- 3.5 Overall Settlement Ratings
- 4.1 Town Based Scenario Indicative Development Levels
- 4.2 Town and Larger Village Based Scenario Indicative Development Levels
- 4.3 Distributed Development Scenario Indicative Development Levels
- 4.4 Focused Development Scenario Indicative Development Levels
- 4.5 Preferred Option Indicative Development Levels
- 4.6 Development Scenario Sustainability Ranking

Appendices

- One Stage One Scoring Tables for Social Infrastructure
- Two Accessibility Maps
- Three Extract from DfT's "Accessibility Planning guidance: Full Guidance"
- Four Bus Strategy from LTP

1 Introduction

1.1 **About the Commission**

1.1.1 Staffordshire Moorlands District Council has commissioned Halcrow Group Limited to undertake a Development Capacity Study (DCS) for the District. The study is intended to provide part of the evidence base for the Core Strategy element of the District's Local Development Framework (LDF).

1.2 **Purpose**

1.2.1 Development Plan Documents (DPDs), of which the Core Strategy is one, must be based upon a sound, justifiable base which takes into account both national and regional planning policies and the specific circumstances of the local authority area. A sound evidence base will ensure that the delivery of development proposed in the Core Strategy is realistic and achievable.

1.2.2 The DCS provides evidence on the suitability of the District's three towns and thirteen large villages¹ to take additional housing up to 2026, in line with the review of the West Midlands RSS. It assesses the preferred option for the Core Strategy, along with the four previously considered options from the Issues and Options stage. In doing this, it will guide the production of the forthcoming Site Allocations DPD. The settlements included in the study are listed in Table 1.1 overleaf.

1.2.3 Stage One of the Study identifies the constraints on the future growth of each settlement imposed by inadequate access and infrastructure. Stage Two provides valuable evidence on where future investment is needed and the likely scale of this investment, with particular reference to potential housing sites identified in the Housing Land Availability Assessment.

¹ For the purposes of this Study, the settlements of Biddulph and Biddulph Moor are considered as one. The Study, therefore, assesses fifteen settlements rather than sixteen.

Table 1.1: List of Settlements Included in the Study

Settlement	Parish	2001 Parish Population
Alton	Alton	1243
Biddulph & Biddulph Moor	Biddulph	19512
Brown Edge	Brown Edge	2406
Caverswall & Cookshill	Caverswall	977
Cheadle	Cheadle	12166
Upper Tean	Checkley	4248
Cheddleton	Cheddleton	5391
Endon	Endon & Stanley	3134
Blythe Bridge	Forsbrook	5008
Ipstones	Ipstones	1510
Kingsley	Kingsley	2210
Leek	Leek	19880
Oakamoor	Oakamoor	645
Waterhouses	Waterhouses	1005
Werrington & Cellarhead	Werrington	6009

1.3

1.3.1

Aims

The aims of the study, as outlined in the brief, are:

- to examine the existing level of infrastructure and accessibility (comprising education, healthcare, community facilities, leisure services, electricity, gas and water supplies, sewerage, the highway network and public transport);
- by analysis of the above, to identify settlements with easy access to a range of infrastructure services and facilities and settlements where these facilities are not provided or are hard to reach;
- to identify the priorities and proposals of key service providers and other relevant organisations where these have implications on the future growth of the identified settlement;
- to identify the capacity of existing infrastructure services and movement corridors to accommodate future growth and to flag up what additional infrastructure is necessary to support each development option;
- to assess the developability and likely viability of larger sites identified through the Housing Land Availability Assessment.; and
- through all of the above, to provide guidance on how to ensure future development in the District takes place in the most sustainable way possible.

1.4 ***Structure of the Report***

1.4.1 The study was undertaken in two stages, with Stage One comprising the review of constraints and Stage Two the assessment of housing sites. The layout of this report reflects this approach.

1.4.2 Chapters Two, Three and Four present the methodology and findings of the first stage, while Chapters Five, Six and Seven deal with the second stage. The methodology for each stage provides a step by step toolkit, in plain English, which can be used by anyone wishing to rerun the exercise in future years. The results of each step of the methodology are then provided, allowing the reader to see exactly how we came up with our findings.

1.4.3 Chapter Eight brings together the findings of both stages and draws conclusions for the future development of the District.

1.5 ***Notes on the Nature of the District***

1.5.1 We have made a number of observations about the District which are relevant to this Study. These remain a key feature of our thinking throughout this report and are set out below.

1.5.2 Staffordshire Moorlands covers an area of 57,624 hectares and has a population of around 94,800 (2007 estimate), giving 43,396 households as of April 2007. Despite the rural nature of much of the District, we note that around 53% of the population is based in the three towns of Leek, Biddulph and Cheadle, with a further 22% in the larger villages of Cheddleton, Endon, Werrington / Cellarhead and Blythe Bridge, located in the west of the district. The remainder is shared between 34 rural parishes. The settlements in the Study thus cover upwards of 75% of the District's population.

1.5.3 A third of the District lies within the Peak District National Park. Of the remainder, around 30% is Green Belt. The district has close links to neighbouring parts of Cheshire, as well as to Stoke-on-Trent, which provides significant employment opportunities and services. This will be an important consideration when looking at social infrastructure, in particular healthcare and further education. A significant chunk of the District's working population (49%) also works outside the District.

1.5.4 Community life is a strong and distinctive feature of the Staffordshire Moorlands. People often identify closely with their own town or village. This leads to a rich pattern of community activities and organisations; more, perhaps, than would be found in an equivalent sized suburban area. This will contribute towards the social

capital enjoyed within the District but may not necessarily be reflected by the built social infrastructure.

- 1.5.5 Staffordshire Moorlands is a popular area for residents, businesses and visitors. The 2004 Sub-National Household Projections (the most up to date available at the time of writing) forecast an additional 5,000 households across the District between 2006 and 2026, which is equivalent to a net demand for an additional 5,150 units (assuming a 3% variance for vacancies). While this may not seem a large number, the rural nature of the District will have a strong bearing on where growth can take place, particularly the key issue of accessibility.
- 1.5.6 Between now and 2021, a slight rise in population is forecast from 94,800 to 96,300. The greatest rise will be in the 60+ age group (around 7,100), while the 20-59 group will experience a fall of around 3,100 as families leave the District to live elsewhere. The 19 or under age group will experience a proportionally greater fall of 2,400. This suggests it is younger families who will be leaving. This will have an important impact on the infrastructure needs of the District, as older people tend to be less mobile and, therefore, need more locally based services.
- 1.5.7 Most of the District is unlikely to be a target for significant large scale inward investment due to its poor transport links and the absence of major centres of further education (although new SMEs are likely to continue to be attracted). It is important that major employers like Britannia Building Society, JCB and Alton Towers are supported and encouraged to continue investing in the District. Future planning of physical infrastructure, in particular, will have an important bearing on their retention.

2 Stage One Methodology

2.1

Introduction

2.1.1

The aim of Stage One is to identify those settlements with the best access to social and physical infrastructure, those which are most accessible to and from each other, and those which are best connected to the nearby city of Stoke on Trent. The Core Strategy options and preferred option are then tested against the findings.

2.1.2

The names of the fifteen settlements which were assessed were supplied by Staffordshire Moorlands District council. The built up areas of each were then plotted onto our GIS base.

2.1.3

Next, we agreed with the Council the categories for which we would gather information under each of the three classes. These were:

Social Infrastructure

- education
- healthcare
- community / social facilities
- leisure facilities
- emergency services

Physical Infrastructure

- electricity supply
- gas supply
- water supply
- sewerage

Accessibility

- public transport
- highway network

2.1.4

Data was gathered from a variety of sources for each of these eleven categories and our analysis of each settlement was based upon the information received.

Halcrow used its existing knowledge and experience of the development process to draw up a list of relevant organisations e.g. Staffordshire County Council or the British Pipeline Agency. In most cases, information was gathered through a telephone conversation with an appropriate person at each organisation. These were supplemented by internet searches. Face to face meetings were not deemed to be needed.

2.1.5 The people we spoke to were asked to provide the following information:

- the existing level of service and the location of the nearest facility
- the present balance between supply and demand
- any plans for future growth, relocation or downscaling
- the expected balance of demand and supply taking into account the above

2.1.6 The scope and quality of information did, of course, vary between sources, so direct comparison between categories is not always possible. This is an issue inherent in this kind of exercise. The effect was most noticeable when discussing the latter two items, as these were based largely on expectations for the future and not on measured data. Even so, the information we gleaned was useful.

2.2 ***Gathering data on Social Infrastructure***

2.2.1 Within each of the five categories, individual facilities were identified. These are listed below:

Education

- Primary schools
- Secondary schools
- Colleges

Healthcare

- GP surgeries
- Dentists
- Hospitals
- Hospitals with A&E
- Optician

Community / Social Facilities

- Village Halls
- Post Offices
- Churches

Leisure Facilities

- Swimming Pools
- Sports Pitches / Playing Fields
- Libraries
- Public Parks
- Fitness Centres

Emergency Services

- Police Stations
- Fire Stations
- Ambulance Stations

2.2.2 In each case, the first question we asked was whether or not there was a particular facility present in the settlement and, if so, how many and of what type. This preliminary phase was carried out over the internet, and proved a simple way to obtain the locations of, for example, schools and leisure centres.

2.2.3 Once we had determined whether or not a particular facility was present, we looked into capacity, demand, future plans and expectations of future demand. This research was carried out by telephone in most cases, the exception being education facilities, for which we were provided with a document by the education department at Staffordshire County Council (document ref: *Staffordshire Moorlands School Organisation Plan 2007 – 2012*).

2.2.4 Having gathered the data, we then assessed the facilities available to each settlement. A scoring table was prepared for each settlement, plotting the facilities against the four matters listed in paragraph 2.1.5 above. An example of one of these tables is given in Figure 2.1 overleaf.

Figure 2.1: Example of Stage One Scoring Table

- 2.2.5 The level of presence and the capacity of each facility were recorded as simple statements of fact. The demand, future plans and expectations of future demand, however, were generated from the opinions of the people spoke to. Because opinions cannot be recorded quantitatively, we used a red / amber / green rating to rate them relative to each other. Where our contacts believed that current demand outstripped supply the facility was rated red, where supply and demand were in balance the rating was amber and where supply more than catered for demand, the rating was green.
- 2.2.6 Future plans were rated in much the same way. Expansion of a service received a green rating, no change an amber rating and a loss of service a red rating. Expectation of future demand was then calculated by combining present demand with future plans, taking on board any views expressed by the organisations. For example, if a town had a shortage of doctors but a new surgery was planned, it would score red on present demand, green for future plans and amber for future demand, as the new surgery would most likely make up for the present shortfall.
- 2.2.7 A weighted score was then applied to the expectation of future demand for each facility. A total score of 100 was given for the green ratings, 50 for the amber and 0 for the red. These scores were next broken down by category and then by facility. In setting the green scores, we considered which facilities were most important to residents. Education and healthcare were considered the most important and accounted for half the points between them.
- 2.2.8 To set the amber scores, we considered to what extent the lack of a facility should be considered a constraint, and how easy it would be to overcome such a constraint. For this reason, the amber score was not always half the green score.
- 2.2.9 All scores were agreed between the client and consultant. While subjective, they do demonstrate the relative importance of each facility. A full list of scores for the social infrastructure class is provided in Table 2.1 overleaf.
- 2.2.10 It is important to bear in mind that the purpose of this exercise is to award a red, amber or green rating to each settlement rather than a numerical score. For this reason, the scores for each category are expressed as ranges rather than discrete values. To calculate these ranges, the highest possible score for each category was worked out by adding together the green scores for its constituent facilities (e.g. for education $12 + 8 + 5 = 25$). This was then split into three roughly equal ranges (e.g. for education the ranges were 0 - 8, 9 - 16 and 17 - 25).

2.2.11 The category ratings were determined as follows. Each settlement was rated red, amber or green for each facility and the requisite score awarded. These were then totalled to give a score for each category. The appropriate rating from Table 2.1 for that score was then awarded. A worked example is given overleaf.

2.2.12 To work out the overall rating for each settlement, the category scores were totalled and the highest and lowest totals identified. The difference between highest and lowest was then split into three roughly equal ranges and the ratings awarded on the basis of these. This ensured a reasonably even split of red, amber and green settlements. Again, a worked example is given overleaf.

Table 2.1: Scoring System for Social Infrastructure Categories and Facilities

Category	Facility	Red	Amber	Green
	Primary School	0	4	12
	Secondary School	0	4	8
	College	0	3	5
	Education	0 - 8	9 - 16	17 - 25
	GP Surgery	0	4	10
	Dentist	0	4	7
	Hospital	0	3	6
	Hospital with A&E	0	3	5
	Optician	0	1	2
	Healthcare	0 - 10	11 - 20	21 - 30
	Village Hall	0	2	4
	Post Office	0	4	8
	Church	0	2	3
	Community & Social Facilities	0 - 5	6 - 10	11 - 15
	Swimming Pool	0	2	3
	Sports Pitch / Playing Field	0	2	6
	Library	0	3	5
	Public	0	2	4
	Fitness Centre	2	1	2
	Leisure Facilities	0 - 6	7 - 13	14 - 20
	Police	0	2	4
	Fire	0	2	3
	Ambulance	0	2	3
	Emergency Services	0 - 3	4 - 6	7 - 10

- 2.2.13 **Example of Category Rating:** Settlement X is rated amber for a primary school, green for a secondary school and red for a college. This gives it a total score of 12 for the education category (4 points + 8 points + 0 points). Table 2.1 shows this score to lie in the amber range. Settlement X's education rating is thus amber.
- 2.2.14 **Example of Overall Rating:** Settlement X scores 72 points overall. The lowest scoring settlement scores 42 and the highest 80. This gives a spread of 39 values (NB both 42 and 80 are included so the spread is one more than the difference). Splitting this spread into thirds gives the following ranges: Red 42-54, Amber 55-67, Green 68-80. Settlement X's overall rating is thus green.
- 2.3 **Gathering data on Physical Infrastructure**
- 2.3.1 Information on physical infrastructure was gathered and analysed in much the same as the social infrastructure. The main difference was that the four categories in this class were not broken down into individual facilities.
- 2.3.2 Information on electricity supply comprised a plan, provided by Central Networks, showing primary (high voltage) cables and infrastructure within the District. This gave information on the capacities of power lines and substations. By analysing which settlements were served by primary cables, as oppose to lower voltage local cables, we were able to work out where the supply was most likely to come under pressure. Settlements served by a 33kV overground or underground cable were classified green, while those served only by lower capacity cables were classified amber. On the advice of Central Networks, no settlements were classified red, on the grounds that an electricity supply would always be made available for any new development.
- 2.3.3 Information on gas supply comprised a plan showing the percentage of homes in the District without a mains gas connection. Translating this into the capacity of individual settlements was relatively straightforward as the plan already used a colour coded approach. For a settlement to considered green, at least 90% of households had to have a mains connection. Those between 70% and 90% were rated amber and any less than 70%, red.
- 2.3.4 Information on water supply and sewerage proved hard to come by. Despite approaching Severn Trent Water a number of times, we were unable to get accurate information on the infrastructure present in each settlement. The difficulties Severn Trent had in supplying this data appeared to relate to the way in which the information was stored. Although information on capacity was available, it was not aggregated by settlement, and the only way the company could supply it was on a street by street basis.

- 2.3.5 It was decided at an early stage in the commission that to attempt to obtain information on a street by street basis would take too long and would be too costly to be worth pursuing. Instead, we explained to Severn Trent the purpose of our exercise. Their response was that the company would always provide enough new pipes and sewers to serve a new development, so the current levels of supply should never be considered a constraint on development. When we explained our process, we were told that all settlements should be rated green.
- 2.3.6 The rating process for physical infrastructure was slightly different to that used for social infrastructure. The reason for this was that water and sewerage were rated green for each settlement (see paragraph 2.3.4 above). This meant that settlements could only be differentiated on the grounds of their gas and electricity supplies.
- 2.3.7 In determining how to split the points between categories, it was decided that water and sewerage should account for one third of the points between them, with gas and electricity having one third each. The resulting scores for each category are shown in Table 2.2 below.
- 2.3.8 Significantly fewer points are available for an amber settlement than a green settlement. This reflects the greater costs associated with laying new high capacity pipes and cables (for green settlements only low capacity infrastructure would need to be provided).
- 2.3.9 As only electricity and gas offer any differentiation between settlements, the overall rating depends upon the relative ratings of these two. Where both are green, the overall rating is green. Where one is red or amber, the rating is amber. Where both are red or amber, the settlement is red. The ranges shown below allow for this.

Table 2.2: Scoring System for Physical Infrastructure Categories

Category	Red Score	Amber Score	Green Score
Electricity	-	10	33
Gas	0	15	33
Water Supply	-	-	17
Sewerage	-	-	17
PHYSICAL INFRASTRUCTURE	0-70	70-85	85-100

2.4 ***Gathering Data on Accessibility***

2.4.1 Our first task was to map the existing transport network, making observations on the degree of accessibility. The basis for this work has already been undertaken by Staffordshire County Council in LTP2, so the County Council was consulted.

2.4.2 Secondly, we looked at future transport plans and service provision. LTP2, which models Local Transport Plan policy and maps proposed changes to the local transport network, was appraised.

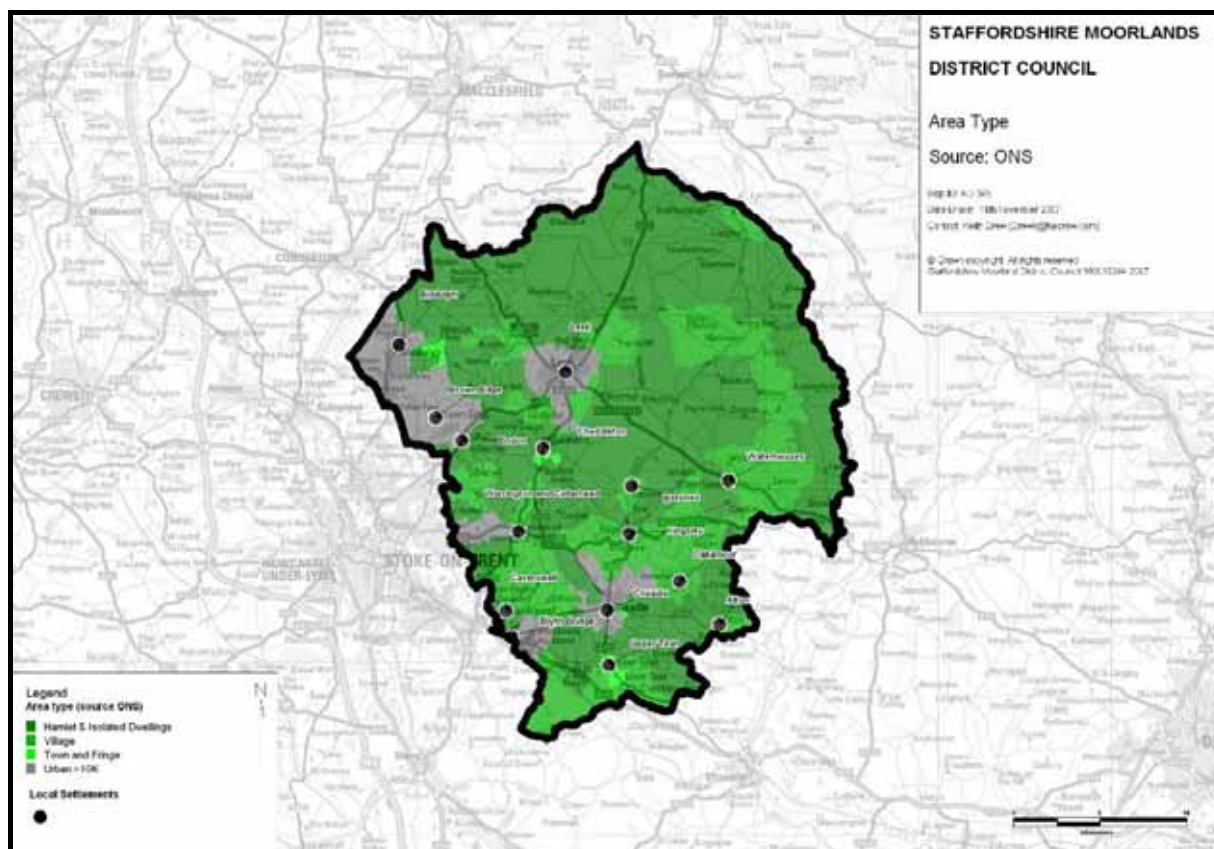
2.4.3 Thirdly, we identified which of the fifteen study settlements were most suitable for development. The Accession data provided by the County Council helped to identify areas that could accommodate growth and those where improvements would be needed before growth could be considered.

2.4.4 Lastly, we calculated the accessibility of these settlements. This enabled us to provide an index showing the sustainability of each settlement from a transport perspective. Our accessibility analysis combined the data on public transport and walking / cycling referred to above with connectivity by road, this being calculated in terms of distance and number of main road corridors.

2.4.5 To the west of the study area is the regional centre of Stoke-on-Trent. For accessibility purposes this is defined as Hanley. We have also identified a number of key towns surrounding the study area. These comprise (clockwise from north) Macclesfield, Buxton, Ashbourne, Uttoxeter, Stone, Kidsgrove and Congleton.

2.4.6 The study area is largely rural in nature, with urban pockets to the west. Figure 2.2 shows, from data sourced from Office of National Statistics, the 'Urban and Rural Classification 2004', together with the locations of the fifteen settlements.

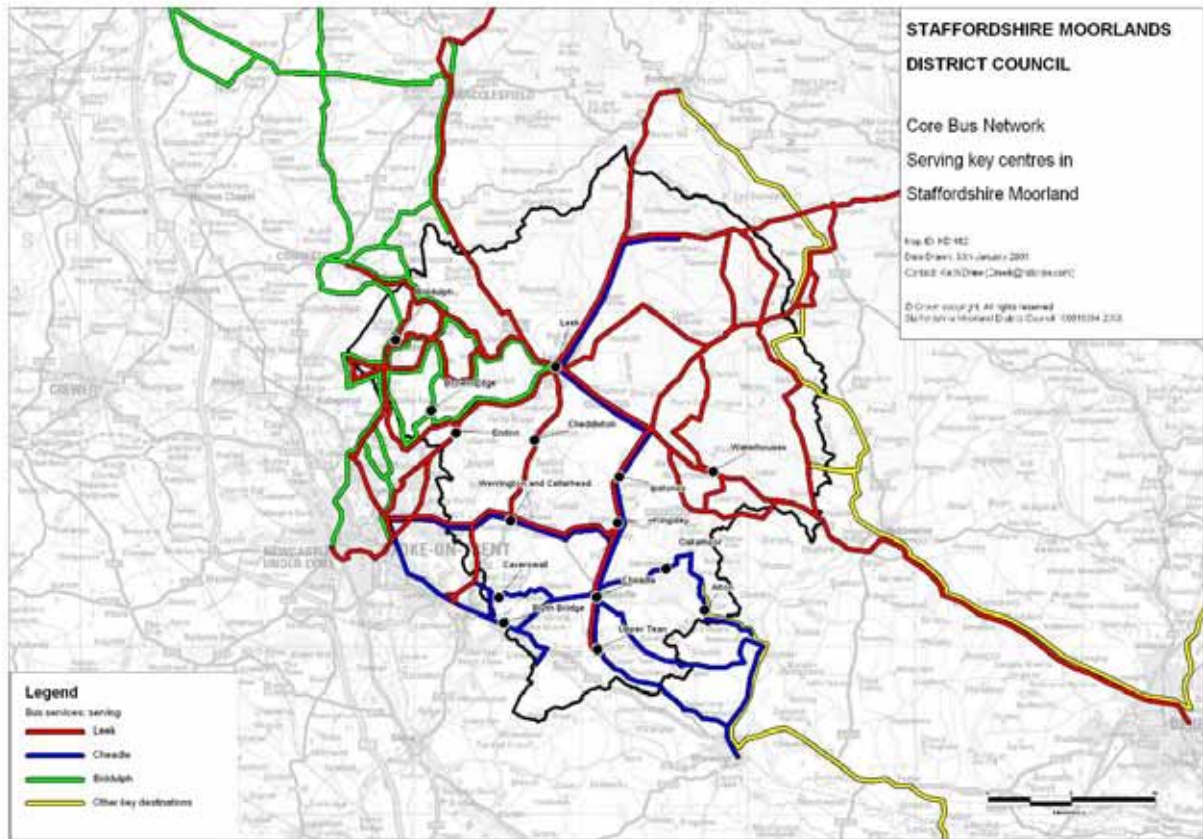
Figure 2.2: Study area composition (Urban / Rural)



2.4.7

Figure 2.3 shows the bus network in the study area, highlighting the services that call at Biddulph, Cheadle, Leek Hanley and the other key towns mentioned in 2.4.7 above. The map shows that all settlements have bus connections to one or more of the larger settlements.

Figure 2.3: Bus Network in the Staffordshire Moorlands



2.4.8

Figure 2.3 also shows interesting patterns in terms of the bus networks radiating from each of the three centres:

- from Biddulph, the bus network penetrates the northern part of the study area, serving Stoke and external destinations such as Macclesfield and Stockport
- from Cheadle, bus services are typically to and from the south, serving Stoke and Uttoxeter
- from Leek, the bus network is more extensive, with links to most parts of the District and to many of the key towns surrounding the study area.

2.4.9

To accompany our analysis, a series of maps have been produced. These may be found in Appendix Two. In addition, Chapter Three also reports on an accessibility tool (developed in MS Excel) that will help officers of Staffordshire Moorlands District Council to make informed decisions based on Public Transport Accessibility. The tool links directly to the mapped outputs.

2.4.10 The accessibility audit has three separate calculations, two of which are public transport (PT) access and one road access. For the purposes of this report, the PT accessibility audits are defined as 'Local' and 'Network' Accessibility.

Accessibility by Public Transport

2.4.11 'Local' accessibility is simply a calculation of bus frequencies by time band (based upon bus services calling at one or more local parish settlements) and by distance from stop.

2.4.12 'Network' access is a calculation of travel time from an origin point (home) to the nearest attractor, such as a GP surgery or school. For this study, three destination types have been used to measure network access, these being:

- to the nearest town or village centre;
- to a larger centre within or without the District (where the parish population is greater than 5,000); and
- to the regional centre of Hanley.

Local accessibility calculation

2.4.13 Analysis is based on the following inputs:

- PT Timetable information (source: ATCO-CIF data Oct 2006)
- Bus stop locations (source: NAPTAN Oct 2006)
- Urban Rural Classifications 2004, as shown in figure 2.2

2.4.14 ATCO-CIF data was downloaded from the 'National Public Transport Data Repository' website (NPTDR), hosted by Thales. This data consists of bus timetable information, including:

- Where bus services stop
- What time these services stop
- Which days of week these services operate

2.4.15 The data was manipulated using MapInfo and SPSS to show, at bus stop level, the number of services calling at each stop for defined time bands². Bus services which do not call within half a mile of at least one listed settlement centre have been removed from the analysis (this was done using GIS and catchment analysis).

2.4.16 The criteria used to calculate the local accessibility are shown below in Table 2.3.

Table 2.3: Local Accessibility Criteria (Expressed as Standard Frequencies)

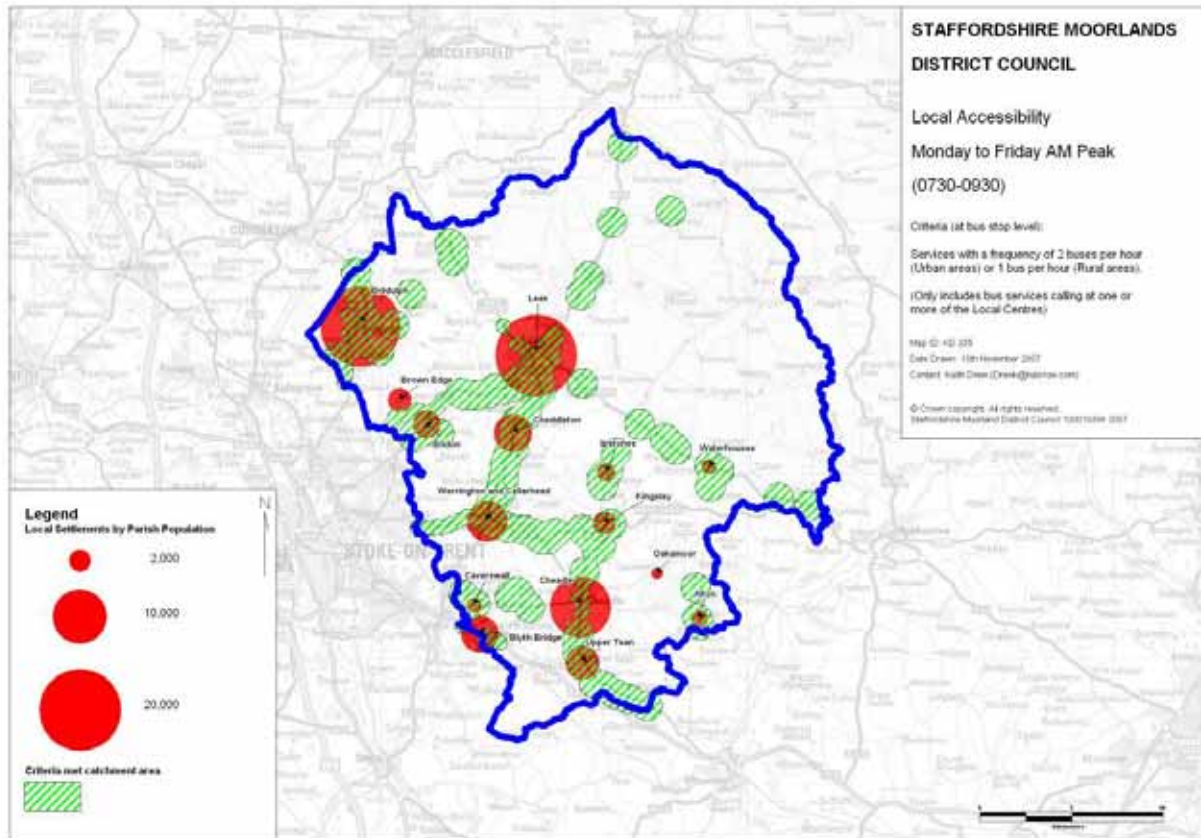
Criterion 1: Morning Peak (7:30am-9:30am) two buses per hour in an urban area or one bus per hour in a rural area
Criterion 2: Off Peak (9:30am-4:00pm) as Morning Peak
Criterion 3: Afternoon Peak (4:00pm-6:30pm) as Morning Peak
Criterion 4: Evening (6:30pm-11:00pm) one bus per hour in both areas

2.4.17 As table 2.3 shows, each criterion defines the required frequency of services needed in that defined time band. If the criterion is matched, a catchment area of 400m (in an urban area) or 800m (in a rural area) is drawn.

2.4.18 The more criteria each settlement matches, the more locally accessible it is and the higher its resulting score. As an example, figure 2.4 shows an example map of local accessibility in the morning peak time band (additional maps show access in the other three time periods). Note the red circles representing the settlement centres are proportional to the settlement size.

² These time bands are defined as 'Monday to Friday AM Peak (0730-0930)', 'Monday to Friday Off-Peak (0930-1600)', 'Monday to Friday PM Peak (1600-1830)' and 'Monday to Friday Evening (1800-2300)'.

Figure 2.4: Local Accessibility in the Morning Peak



Network accessibility calculation

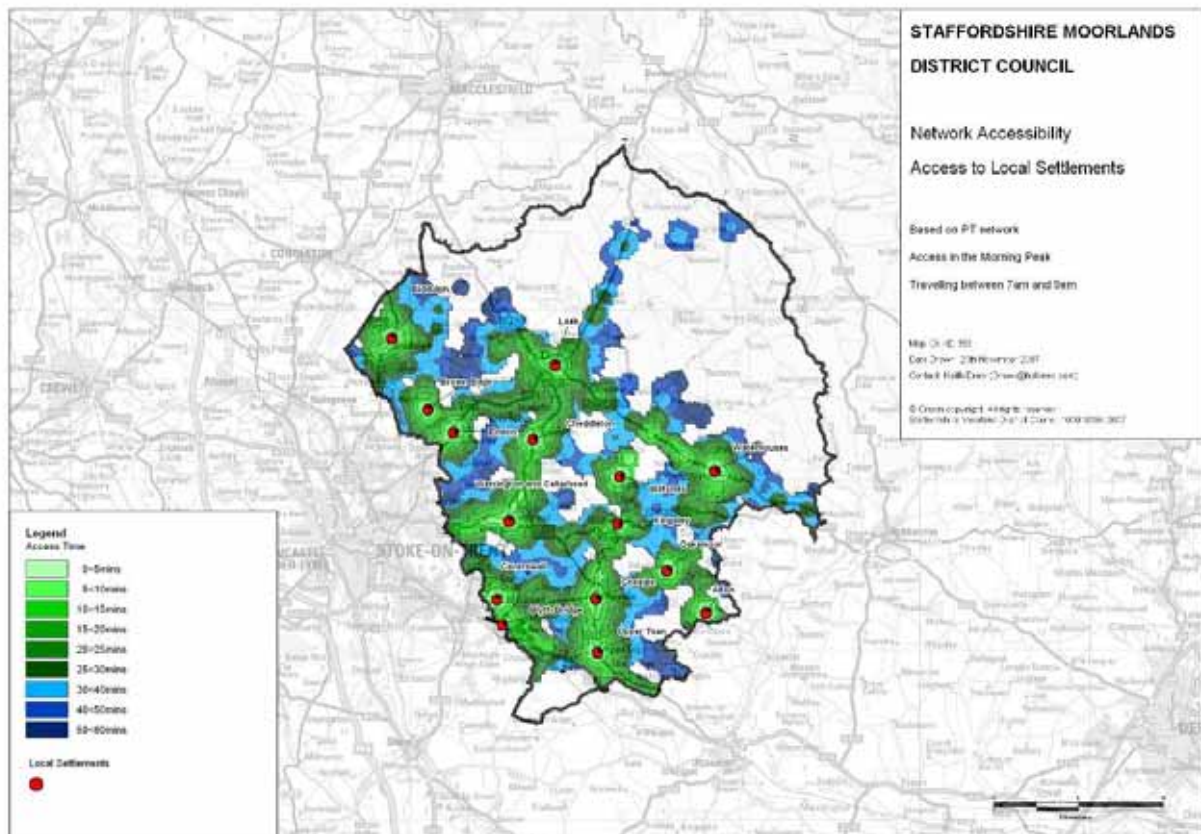
- 2.4.19 Network accessibility has been calculated using Accession software. The inputs to the software are the public transport network from October 2006 (ATCO-CIF repository), a road network supplied by the District Council and an origin grid of 250m. In addition, a series of destinations have been used. Please refer to paragraph 2.4.12 for information.
- 2.4.20 For each destination, four time specific calculations have been made (see time bands defined in paragraph 2.4.16). Access time is calculated from the origins to the destinations for all time bands, except for the afternoon peak, in which access time is measured from the destination to the origins (the reason for this is that in the afternoon peak the bulk of trips are workers travelling home).
- 2.4.21 To support this study, guidance has been sought from the Department of Transport (DfT). This is attached in Appendix Three. For the purposes of this analysis, the following indicators have been used for access by PT and on foot:

- Access to the nearest town or village centre (proxy for access to local services) - when an origin is within 15 minutes (optimum) or 30 minutes (maximum)
- Access to larger centres (proxy for access to market town services) - when an origin is within 15 minutes or 30 minutes
- Access to the regional centre of Hanley (proxy for access to a major destination) - when an origin is within 30 minutes or 60 minutes

2.4.22

An example is given in figure 2.5 showing access to the 14 local centres in the morning peak. Areas coloured green are within thirty minutes' travel time, as set out in 2.4.23 above.

Figure 2.5: Network Access to the Nearest Town or Village Centre in the Morning Peak



Road Connectivity

- 2.4.23 Accessibility by road has been calculated by measuring the distance to the nearest point of access to the 'A' road network from the point of origin. If the origin lies within half a mile the access is considered good (green). Between half a mile and one mile is considered reasonable (amber) and more than one mile poor (red). In this instance, accessibility does not include travel time to any particular destination. The number of 'A' roads serving each settlement has also been considered. A settlement not on the 'A' road network is rated red, a settlement served by one road is rated amber and a settlement served by more than one is green.

Accessibility Scoring

- 2.4.24 In terms of local accessibility, paragraph 2.4.9 makes mention of an accessibility tool, the purpose of which is to analyse (at an accuracy of 100m) the accessibility of given grid co-ordinates. In essence, a user of the tool can input grid co-ordinates into the tool and will gain an understanding of how accessible that area is by public transport. This stage of the methodology discusses how the GIS elements later on form the basis of the tool. The basis of the analysis is a 100m grid, constructed using MapInfo.
- 2.4.25 The values from the accessibility calculations have been added to the grid, so that for each separate 100m grid there is a record for access to the nearest local centre, the nearest larger centre and the regional centre at Hanley for each of the four time bands. For local access this record is a yes/no answer dependant upon whether the grid square lies within or without the catchment area. For scoring purposes, 'yes' means green and 'no' means red.
- 2.4.26 For network access the grid square contains a time value based upon the relevant isochrone (see Figure 2.5 above for an example of an isochrone map). To fit with other elements of the scoring system, these values have been converted into scores of 0, 1 or 2. Where the grid is within the optimum value specified in 2.4.23, a 'green' score of two is awarded (for example, a grid square ten minutes from its nearest local centre). If the grid square lies between the optimum and maximum values, an 'amber' score of one is awarded. If the grid square falls without the maximum time allocation (for example, a grid square 70 minutes from the regional centre) no score is awarded.
- 2.4.27 In summary, then, the local accessibility score is simply the sum of the scores for the four time bands, giving a maximum of four points. For network accessibility, scores for the four time bands are calculated for each of the three destination types, giving twelve values and a maximum of 24 points.

2.4.28

The full list of available scores is shown in Table 2.4 below.

Table 2.4: Scoring System for Accessibility Categories

Category	Criterion	Green	Amber	Red
	Morning peak service available	1	-	-
	Off peak service available	1	-	-
	Afternoon peak service available	1	-	-
	Evening service available	1	-	-
Local Accessibility	Sub total	24	-	
	Access to local centre in morning peak	2	1	0
	Access to local centre off peak	2	1	0
	Access to local centre in afternoon peak	2	1	0
	Access to local centre in evening period	2	1	0
	Access to larger centre in morning peak	2	1	0
	Access to larger centre off peak	2	1	0
	Access to larger centre in afternoon peak	2	1	0
	Access to larger centre in evening period	2	1	0
	Access to regional centre in morning peak	2	1	0
	Access to regional centre off peak	2	1	0
	Access to regional centre in afternoon peak	2	1	0
	Access to regional centre in evening period	2	1	0
Network Accessibility	Sub total	24	12	
	Number of 'A' roads serving settlement	2	1	0
	Distance from 'A' road network	2	1	0
	Distance from regional centre			
Road Connectivity	Sub total			

Future Public Transport improvements in the area

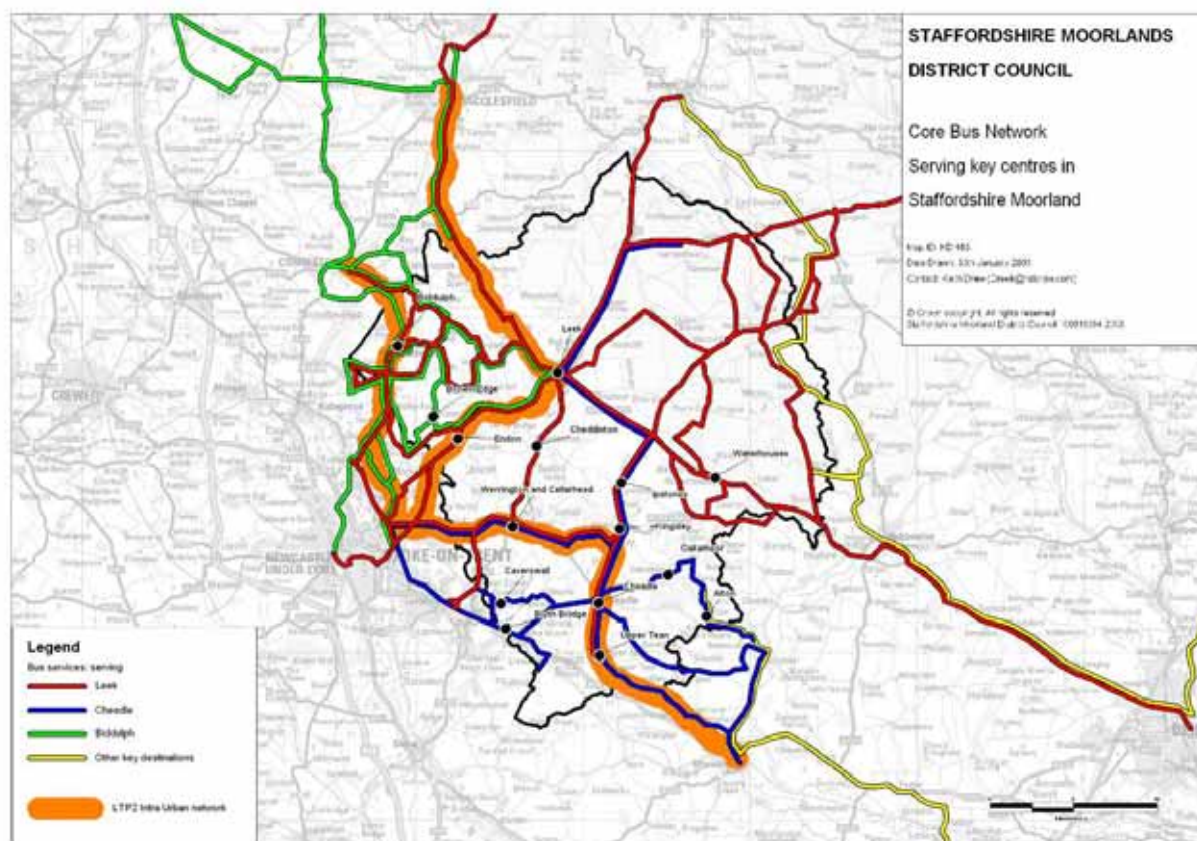
2.4.29

To understand future plans for public transport in the study area, we examined the bus strategy from the Staffordshire Local Transport Plan (Annex E of LTP2). Details of this may be found in Appendix Four.

2.4.30 The bus strategy gives emphasis on an intra-urban network linking key settlements such as Biddulph, Leek and Cheadle to centres such as Hanley, Macclesfield and Uttoxeter.

2.4.31 Figure 2.6 shows the local bus network together with the intra-urban bus network, highlighting the roles of Biddulph, Cheadle and Leek as key destinations on routes between Hanley and Congleton, Macclesfield and Uttoxeter respectively.

Figure 2.6: Local bus network with the Intra-Urban network



2.5 ***Assessment of Settlements***

2.5.1 Having established how each settlement fared in relation to the three classes of social infrastructure, physical infrastructure and accessibility, a summary table was prepared showing the red, amber or green rating achieved by each settlement for each class. Overall ratings were not given. The numeric scores used to generate the ratings were not shown in these tables; they may be found in the appendices.

- 2.5.2 These ratings enabled a hierarchy of settlements to be established within the District for each infrastructure type. The Core Strategy Options were then assessed against these hierarchies.
- 2.6 ***Assessment of Core Strategy Options***
- 2.6.1 Once we had ascertained the capacity of each settlement for development we were then in a position to appraise the Core Strategy Options against these.
- 2.6.2 The Core Strategy Issues and Options Consultation Report of September 2007 proposed four development strategies, which had been whittled down from an original seven. A fifth strategy, the Preferred Option, was also assessed. This fifth strategy had been formulated since the publication of the Issues and Options Consultation Report and was assessed against the findings of our social, physical and accessibility information in the same way as the other four.
- 2.6.3 The assessment was undertaken as follows. For each development strategy, the settlements which would be taking the greatest share of development were identified. For example, in the town-based strategy, Leek, Cheadle and Biddulph were identified as the key settlements. An assessment was then made of the numbers of red, amber and green ratings in these key settlements. The higher the number of green ratings (and the lower the number of reds), the more viable the strategy.
- 2.6.4 Once the strategies had been assessed, they were ranked one to five for each of the three infrastructure classes, giving each strategy three separate rankings. These rankings were then totalled and an overall ranking reached. The strategy with the 'greenest' ranking was that with the greatest capacity for development and vice versa. For example, if one strategy were ranked first in all three classes it would have a total of three; if it were ranked fifth each time the total would be 15. This methodology uses no weighting; social and physical infrastructure and accessibility are all considered to bear equal importance.

3 Stage One Results

3.1 ***Introduction***

3.1.1 This chapter sets out the results of our analysis of social infrastructure, physical infrastructure and accessibility. An overall sustainability rating for each settlement is given, along with a breakdown of each category within each of the three classes. While a numerical scoring system has been used to work out these ratings, only the red, amber or green sustainability rating is presented here.

3.2 ***Results of Social Infrastructure Assessment***

3.2.1 The results of the social infrastructure settlement assessment are shown in Table 3.1 overleaf. The overall rating is given in the right hand column, with the ratings for each category in the columns to the left. Full scoresheets for each settlement may be found in Appendix One.

3.2.2 In broad terms, a green rating means that supply currently exceeds demand and is expected to do so for the foreseeable future. An amber rating means that supply is currently adequate but is expected to be outstripped by future demand. A red rating means that supply currently falls short of demand and the situation is expected to worsen in future.

3.2.3 Of the fifteen settlements surveyed, seven were found to be red, four amber and four green.

3.2.4 The red settlements were:

- Alton
- Caverswall & Cookshill
- Cheddleton
- Endon
- Oakamoor
- Upper Tean
- Waterhouses

3.2.5 The amber settlements were:

- Biddulph/Biddulph Moor
- Brown Edge
- Kingsley

- Werrington & Cellarhead

3.2.6

The green settlements were:

- Blythe Bridge
- Cheadle
- Ipstones
- Leek

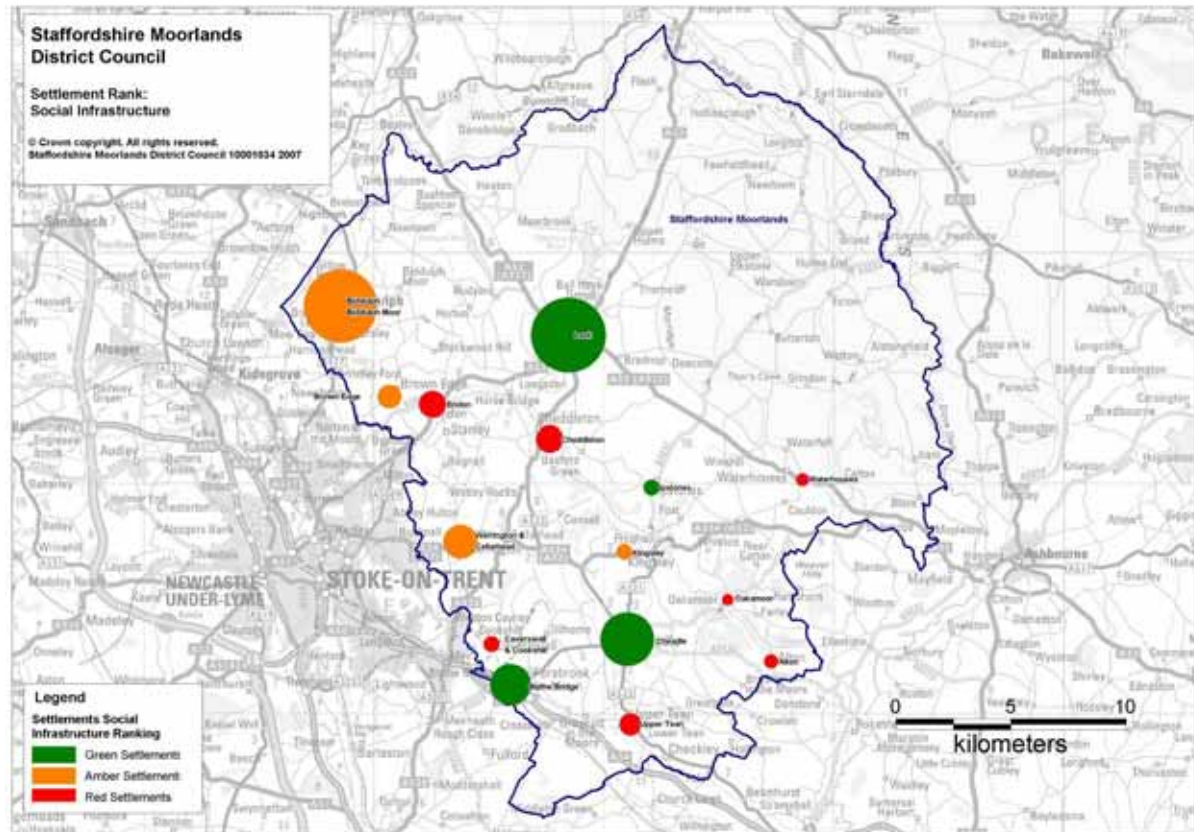
Table 3.1: Results of Social Infrastructure Analysis in Table Form

	Education	Healthcare	Community	Leisure	Emergency	Overall
Alton						
Biddulph / Biddulph Moor						
Blythe Bridge						
Brown Edge						
Caverswall & Cookshill						
Cheadle						
Cheddleton						
Endon						
Ipstones						
Kingsley						
Leek						
Oakamoor						
Upper Tean						
Waterhouses						
Werrington & Cellarhead						

3.2.7

Figure 3.1 overleaf shows these results on a plan of the District.

Figure 3.1: Results of Social Infrastructure Analysis in Plan Form



3.2.8 What this tells us is that there are four settlements in the District where social infrastructure is not expected to act as a constraint on future expansion. In the other settlements, some investment in social infrastructure is likely to be required before expansion is possible. The scale of investment needed is likely to be greater in the red settlements than the amber ones.

3.2.9 Two of the District's three towns (Leek and Cheadle) are rated green, whereas Biddulph is rated amber. One would expect Leek and Cheadle to score well on social infrastructure; both are long established market towns which have been acting as service centres for their hinterlands for hundreds of years. As such, they have the broadest range of facilities available in the District and are well positioned to take further growth.

3.2.10 The reason Biddulph is not rated as highly is also for historic reasons. Although a reasonably sized town today, it only came to prominence during the nineteenth century. As such, it has not acquired the range and depth of infrastructure enjoyed

by the other towns. Its proximity to Stoke, Congleton and Kidsgrove also creates strong competition in attracting new infrastructure.

3.2.11

There is no clear pattern among the villages, except to note that most are rated red. Neither the size nor the location of villages appears to be a determining factor. In some ways, this is to be expected; there is no reason why investment should be skewed towards any particular part of the District and the capacity of facilities is, to a large extent, a balance between demand and supply. Blythe Bridge may appear to owe its green rating to a handy location on the edge of Stoke but the same cannot be said of Ipstones, which is green rated but relatively remote, or Endon, which lies four miles from Hanley but is rated red.

3.2.12

The scoring system is designed to afford more weight to those facilities deemed to be essential, such as schools and surgeries, than to those deemed desirable, such as village halls and libraries. As such, the lack of capacity at a primary school or GP surgery will have a greater impact on the rating.

3.3

Results of Physical Infrastructure Assessment

3.3.1

The results of the physical infrastructure assessment are shown in Table 3.2 overleaf. In broad terms, red settlements are those where significant investment may be needed to connect new development to high capacity electricity and gas supplies, amber settlements are those where significant investment may be needed for one or the other, and green settlements where no significant investment is foreseen.

3.3.2

Of the fifteen settlements surveyed, two were found to be red, eight amber and five green.

3.3.3

The red settlements were:

- Alton
- Ipstones

3.3.4

The amber settlements were:

- Blythe Bridge
- Caverswall & Cookshill
- Cheddleton
- Endon
- Kingsley
- Oakamoor
- Upper Tean
- Waterhouses

3.3.5

The green settlements were:

- Biddulph/Biddulph Moor
- Brown Edge
- Cheadle
- Leek
- Werrington & Cellarhead

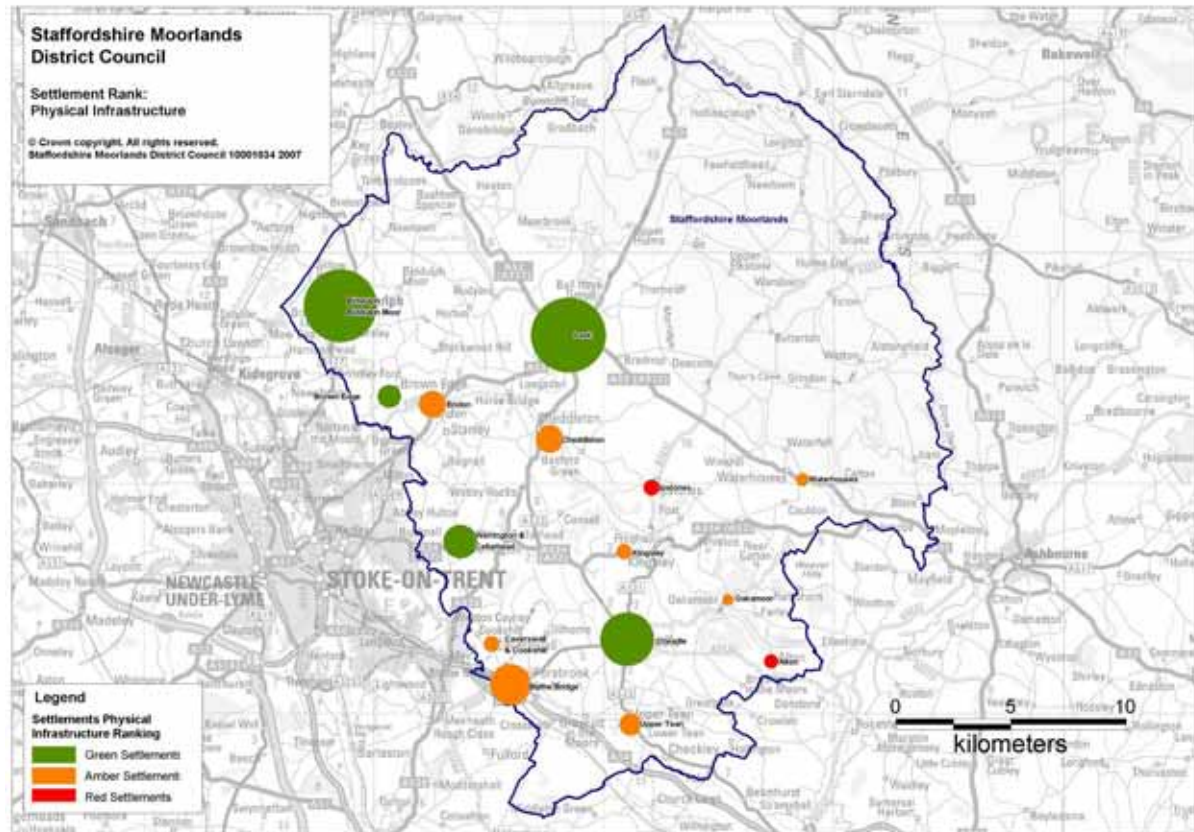
Table 3.2: Results of Physical Infrastructure Analysis in Table Form

	Electricity	Gas Supply	Fresh Water	Sewerage	Overall
Alton					
Biddulph / Biddulph Moor					
Blythe Bridge					
Brown Edge					
Caverswall & Cookshill					
Cheadle					
Cheddleton					
Endon					
Ipstones					
Kingsley					
Leek					
Oakamoor					
Upper Tean					
Waterhouses					
Werrington & Cellarhead					

3.3.6

Figure 3.2 overleaf shows these results on a plan of the District.

Figure 3.2: Results of Physical Infrastructure Analysis in Plan Form



3.3.7 Electricity supply is generally good throughout the more populated western and southern parts of the District, with only two of the study settlements not served by a substation connected to the 33kV network. We understand from Central Networks that providing a connection to development in any of these settlements should not pose a problem.

3.3.8 The gas supply is more variable, with significant areas of the District having, by national standards, a very limited supply. However, the District's three towns and largest village are all classified as green, meaning connections to the mains supply could be provided readily. Only Oakamoor, Waterhouses and, perhaps surprisingly, Kingsley are rated red.

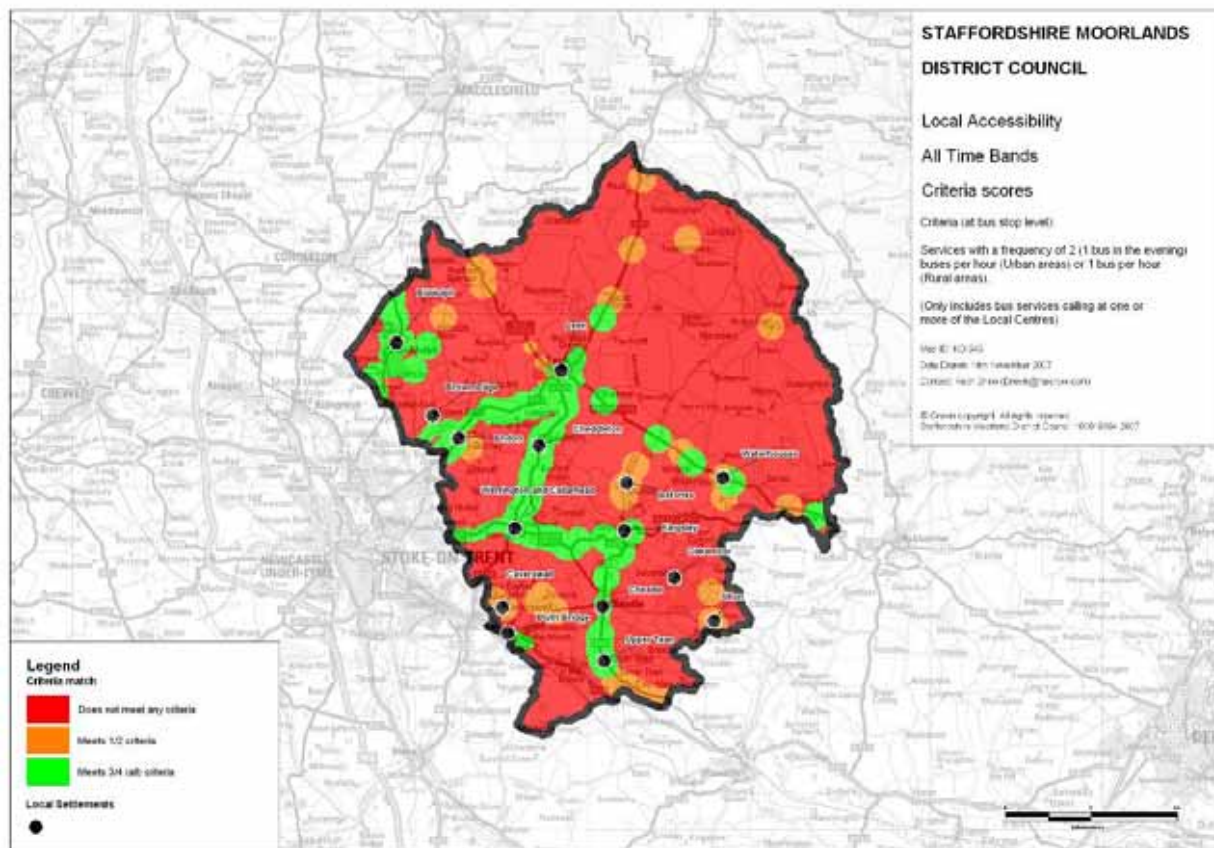
3.3.9 As stated in paragraph 2.3.4 above, Severn Trent have informed us that connections to fresh water and sewerage networks should not be considered a constraint anywhere in the District. We consider this to be a reasonable view. Whereas electricity and gas supplies tend to radiate out from Stoke on Trent,

Staffordshire Moorlands is actually closer to the area's main source of water than Stoke so is likely to benefit from a number of high capacity pipes.

Local Accessibility

3.4.1

Figure 3.3 shows the accessibility for all parts of the District after applying the criteria listed in Table 2.3. above. Where an area matches at least three of the four criteria, that area is coloured green (good accessibility). Where one or two criteria are met, the area is shown as amber (medium accessibility). Where the area fails to meet a single criterion the area appears red (poor accessibility).

Figure 3.3: Standard Frequency Local Accessibility

3.4.2

The map shows that most of the study settlements lie in areas of good accessibility (coloured green). The A53, A520 and A524 corridors, in particular, stand out. These link Hanley to Leek, Kingsley and Werrington. The areas around Biddulph and Cheadle also fare well.

3.4.3

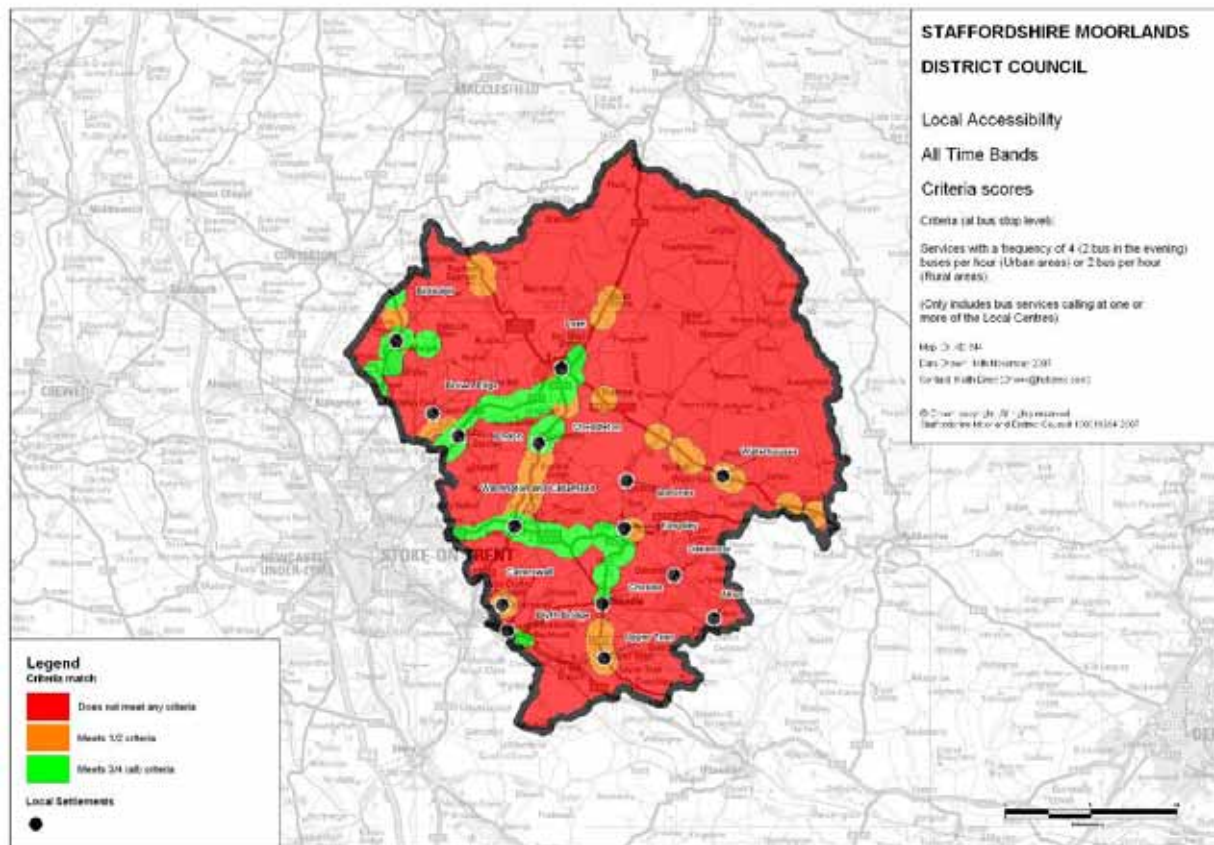
The A523 corridor linking Macclesfield to Ashbourne via Leek and Waterhouses shows sporadic areas of good and medium accessibility, perhaps reflecting the

nature of bus stop distribution. To the north of this corridor, the area is largely inaccessible by bus.

3.4.4

Figure 3.3 reflects a relatively modest bus service of one bus per hour in rural areas and two per hour in urban areas (hereafter referred to as 'standard frequency'). We have also analysed a service running at twice this rate (referred to as 'high frequency')³. Figure 3.4 shows the accessibility under this higher frequency, which shows the corridors to Endon, Leek and Werrington as still having good local accessibility.

Figure 3.4 High Frequency Local Accessibility

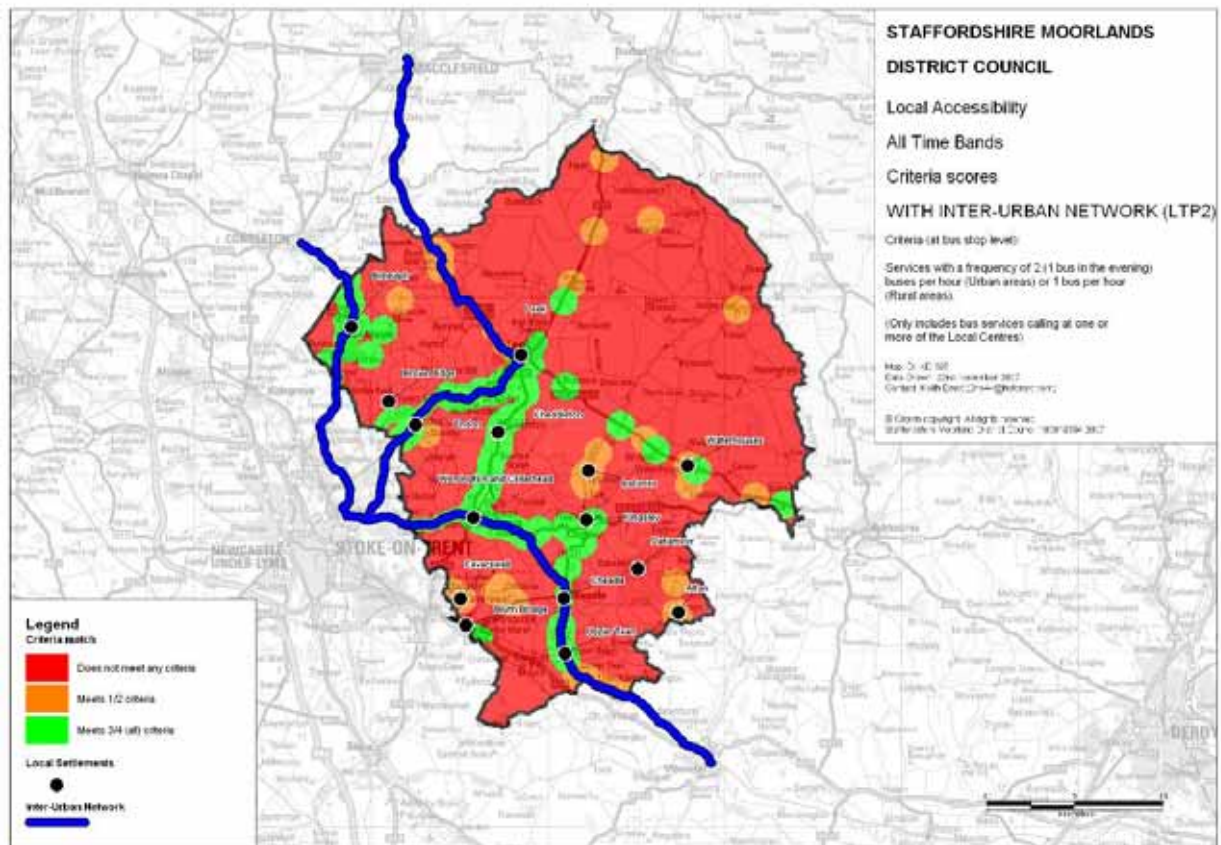


³ 4 buses per hour in urban areas (2 in the evening) and 2 buses per hour in rural areas

3.4.5 However, there are some impacts with some areas shifting from green to amber (around Upper Tean and the corridor linking Werrington and Cheddleton), while the area around Ipstones moves from amber to red.

3.4.6 Adding the intra-urban network, the aim of which is to show areas of future investment/focus, shows a strong bus link from Leek to Macclesfield, which is presently a corridor of a low to medium accessibility. This is shown in Figure 3.5 below.

Figure 3.5: Standard Frequency Local Accessibility and the Intra-Urban Bus Network



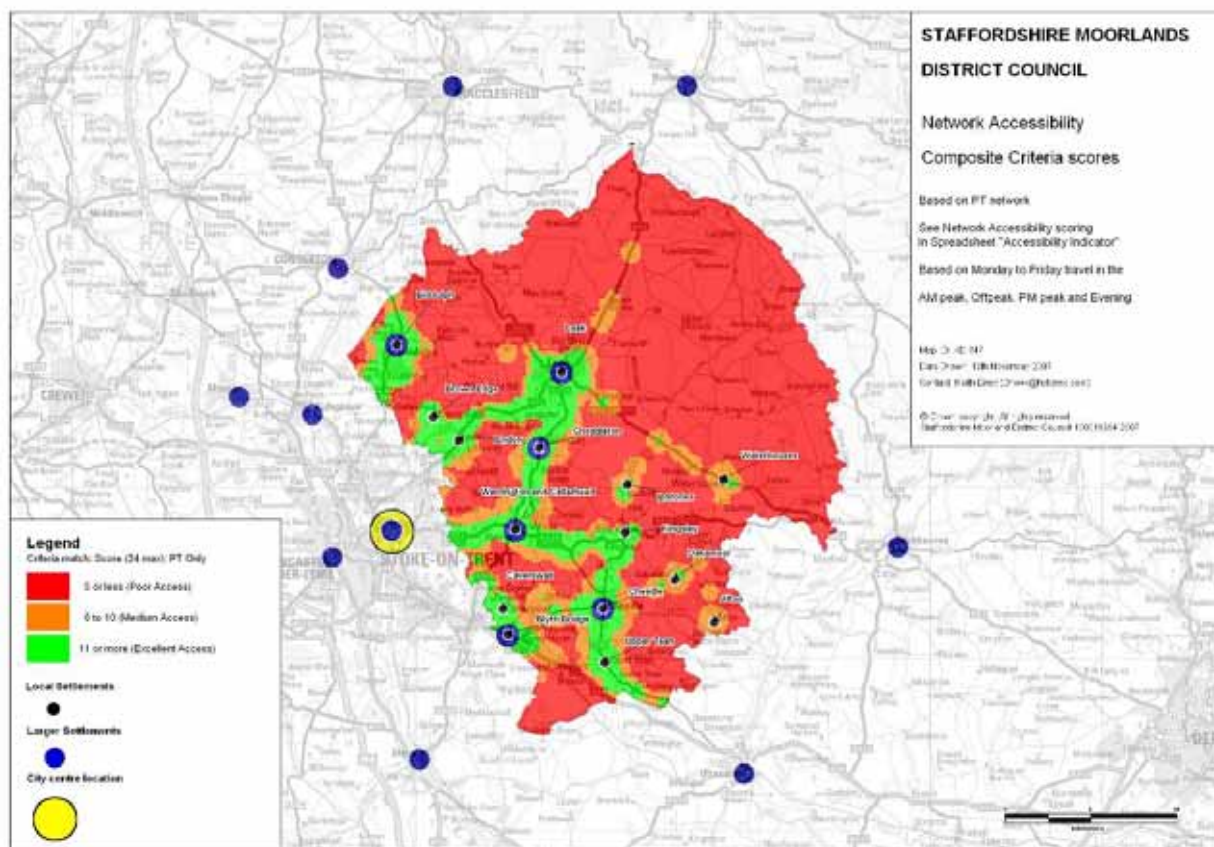
Network Accessibility

3.4.7 Figure 3.6 shows the result of this analysis. An area is deemed green if its score is more than ten, amber if it scores between six and ten and red if fewer than six points are scored. Within the tool these thresholds can be changed to reflect a more lenient or strict set of criteria.

3.4.8

The results shown in this figure replicate those in the local accessibility results i.e. the areas that are most accessible are the larger centres and the corridors previously mentioned. Most of the study settlements fall within the green zone.

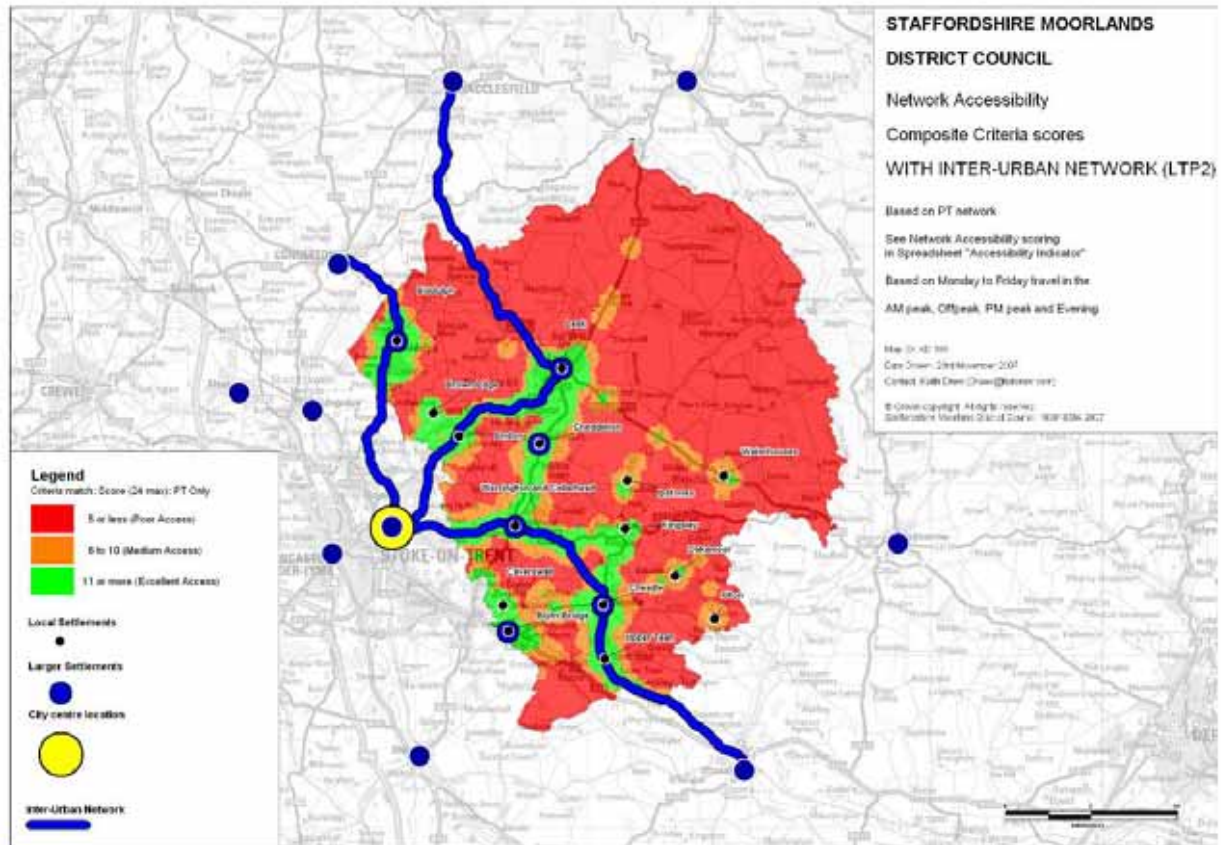
Figure 3.6: Network Accessibility



3.4.9

Again, by adding the intra-urban network to the results (Figure 3.7 below) it can be seen that a potential growth area could be to the north, in the corridor linking Leek and Macclesfield. Currently, this corridor scores poorly but it has been highlighted in the Bus Strategy as part of the intra-urban network.

Figure 3.7: Network Accessibility and the Intra-Urban Bus Network



Road Accessibility

3.4.10

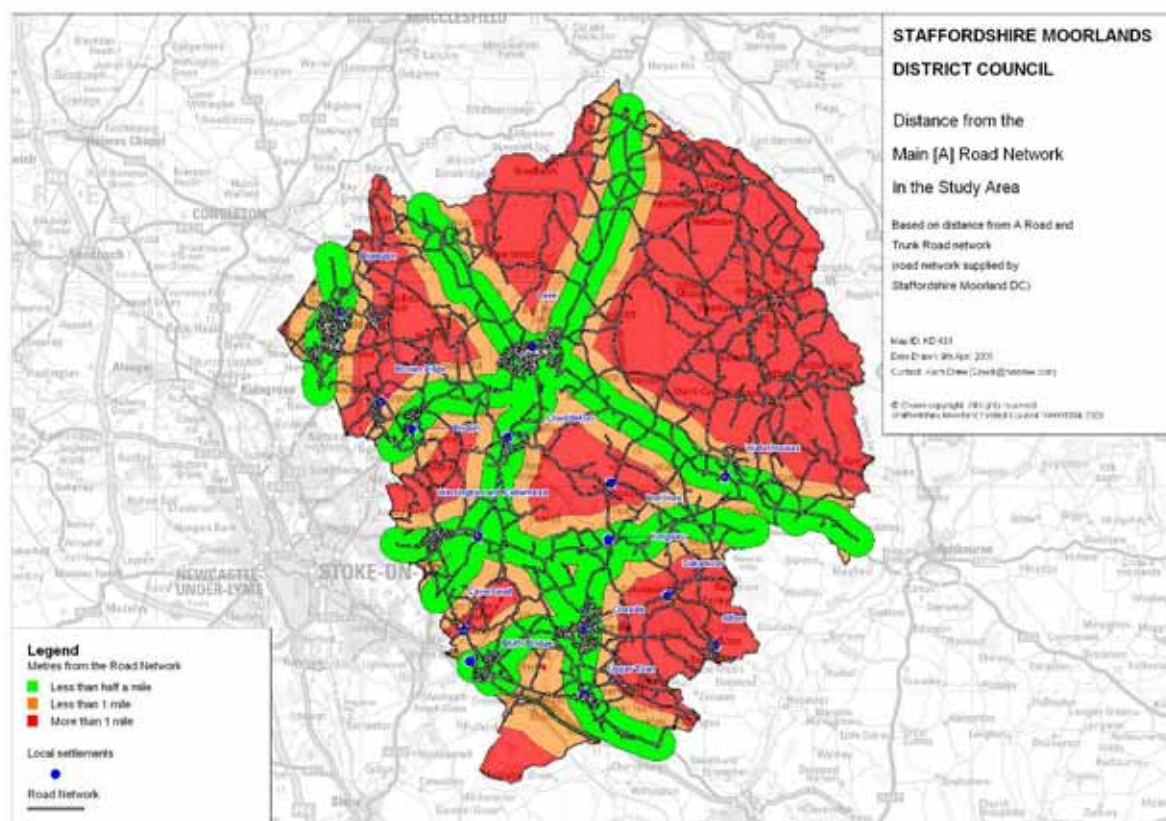
Settlements are scored according to their distance from the District's 'A' road network (as defined by Staffordshire County Council). The distance thresholds are as follows:

- up to half a mile
- between half a mile and one mile
- more than one mile

3.4.11

This exercise is repeated for each main road in relation to each settlement. As may be expected, the larger towns and those villages on the edge of Stoke enjoy the best access to the main road network. The resulting pattern is shown on Figure 3.8 overleaf. For the purposes of the scoring exercises in paragraphs 3.4.17 and 3.4.20, each 'A' road has been awarded equal weight, regardless of destination.

Figure 3.8: Access to the Main Road Network



Summarised Results

3.4.12

Our analysis so far has assumed each settlement to be a single point. Accordingly, the level of service or connectivity identified has been for the settlement as a whole. While this analysis forms an important part of the study, another useful exercise is to split the settlements into their constituent streets and measure what proportion of each settlement is rated green, amber and red. This provides a more refined result which takes into account the size and population of the settlement.

3.4.13

This analysis has been done by identifying the results for each individual postcode sector. This is easily done in GIS. The percentage of each built up area rated green, amber and red can then be mapped. One issue that emerges from this is that, in rural areas, postcodes can be a significant distance from the nearest settlement. Controls therefore need to be made to remove these from the calculation (by ignoring postcodes which are not within a set distance of a settlement centre). Our analysis shows that 88% of the population of the fifteen study settlements lives within 2.5km of the centre of that settlement while 96% lives within 5km

(both measured 'as the crow flies'). As such, the results presented in Tables 3.3 and 3.4 are considered robust accessibility indicators for the study populations.

3.4.14 The results shown in these tables are unweighted. Scores for the three categories of accessibility have been calculated as follows: the percentage of the population rated green is multiplied by 1, that rated amber by 0.5 and that rated red by 0. The resulting numbers are then summed. By way of example, if an area is rated 50% green and 50% amber its score will be 75.

3.4.15 The overall score for each settlement is calculated by halving the network and local scores and adding these to the full road accessibility score. The resulting number is then divided by two to give an overall score out of one hundred. The equation looks like this:

3.4.16 Overall score = ((LA+NA)/2 + RA)/2

3.4.17 The reason for halving the local and network accessibility scores is to avoid the overall score being skewed towards public transport. Halving them means that public transport and road access each contribute 50% to the overall score.

Table 3.3: Local Settlement Accessibility Weighted by Population (distance from settlement capped at 2.5km)

Settlement Name	'Local Accessibility'				'Network Accessibility'				Road Accessibility				Overall Score	Rating
	Red % area	Amber % area	Green % area	Score	Red % area	Amber % area	Green % area	Score	Red % area	Amber % area	Green % area	Score		
Alton	17.6%	82.4%	0.0%	41	19.8%	80.2%	0.0%	40	100.0%	0.0%	0.0%	0	20	
Biddulph	1.9%	0.4%	97.7%	98	1.6%	7.7%	90.7%	95	8.6%	11.0%	80.4%	86	91	
Blythe Bridge	59.0%	0.0%	41.0%	41	0.0%	15.1%	84.9%	92	0.0%	0.4%	99.6%	100	83	
Brown Edge	41.0%	0.0%	59.0%	59	12.2%	2.1%	85.7%	87	45.7%	54.3%	0.0%	27	50	
Caverswall	13.0%	87.0%	0.0%	44	9.0%	14.3%	76.7%	84	38.0%	50.8%	11.3%	37	51	
Cheadle	42.7%	0.4%	56.9%	57	0.9%	2.0%	97.1%	98	0.6%	1.8%	97.7%	99	88	
Cheddleton	5.4%	0.0%	94.6%	95	3.2%	3.6%	93.2%	95	1.2%	3.4%	95.4%	97	96	
Endon	12.3%	5.7%	82.0%	85	7.5%	6.9%	85.6%	89	5.2%	9.1%	85.7%	90	89	
Ipstones	22.5%	77.5%	0.0%	39	24.9%	10.4%	64.7%	70	87.6%	12.4%	0.0%	6	30	
Kingsley	12.7%	0.0%	87.3%	87	11.0%	4.6%	84.4%	87	0.9%	1.1%	98.0%	99	93	
Leek	9.6%	9.0%	81.4%	86	0.3%	0.7%	99.1%	99	0.0%	3.0%	97.0%	98	95	
Oakamoor	98.5%	1.5%	0.0%	1	43.6%	25.9%	30.5%	43	88.2%	9.1%	2.7%	7	15	
Upper Tean	8.8%	12.3%	78.9%	85	4.3%	5.7%	89.9%	93	0.9%	7.9%	91.2%	95	92	
Waterhouses	38.0%	20.6%	41.5%	52	38.4%	38.3%	23.2%	42	0.0%	20.0%	80.0%	90	69	
Werrington & Cellarhead	21.3%	0.0%	78.7%	79	1.7%	3.8%	94.5%	96	0.0%	2.4%	97.6%	99	93	

3.4.18 The red/amber threshold is set at 25. This represents an amber rating for public transport and a red rating for road access, or vice versa.

3.4.19 The amber/green threshold is set at 75. This represents a green rating for public transport and an amber rating for road transport, or vice versa.

3.4.20 In each case, it is assumed that the relevant rating applies to 100% of the area of the settlement.

Table 3.4: Local Settlement Accessibility Weighted by Population (distance from settlement capped at 5km)

Settlement Name	'Local Accessibility'				'Network Accessibility'				Road Accessibility				Overall Score	Rating
	Red % area	Amber % area	Green % area	Score	Red % area	Amber % area	Green % area	Score	Red % area	Amber % area	Green % area	Score		
Alton	29.5%	70.5%	0.0%	35	31.3%	68.7%	0.0%	34	98.8%	1.2%	0.0%	1	18	
Biddulph	5.1%	0.6%	94.3%	95	4.7%	7.6%	87.7%	91	10.5%	11.4%	78.1%	84	89	
Blythe Bridge	61.2%	0.0%	38.8%	39	2.0%	17.7%	80.4%	89	0.9%	4.9%	94.2%	97	81	
Brown Edge	43.4%	0.0%	56.6%	57	17.4%	1.9%	80.7%	82	47.2%	49.4%	3.4%	28	49	
Caverswall	11.8%	88.2%	0.0%	44	8.2%	19.6%	72.2%	82	34.6%	55.1%	10.3%	38	51	
Cheadle	43.0%	1.1%	56.0%	57	1.7%	2.1%	96.2%	97	0.6%	2.3%	97.2%	98	88	
Cheddleton	5.9%	0.0%	94.1%	94	4.4%	3.4%	92.2%	94	1.3%	3.9%	94.8%	97	96	
Endon	14.0%	5.5%	80.5%	83	8.8%	7.2%	84.0%	88	6.5%	9.3%	84.1%	89	87	
Ipstones	31.1%	63.0%	5.9%	37	33.8%	12.2%	54.0%	60	72.5%	14.5%	13.1%	20	34	
Kingsley	15.3%	0.0%	84.7%	85	13.8%	4.3%	82.0%	84	1.4%	1.0%	97.6%	98	91	
Leek	13.2%	8.7%	78.1%	82	3.7%	2.7%	93.6%	95	1.2%	4.9%	93.9%	96	92	
Oakamoor	98.6%	1.4%	0.0%	1	48.4%	23.7%	27.9%	40	84.1%	9.7%	6.2%	11	16	
Upper Tean	15.4%	17.7%	66.9%	76	9.5%	8.3%	82.2%	86	2.3%	13.1%	84.6%	91	86	
Waterhouses	53.4%	19.8%	26.9%	37	56.2%	29.4%	14.3%	29	14.4%	14.2%	71.4%	79	56	
Werrington & Cellarhead	24.0%	0.0%	76.0%	76	3.6%	5.2%	91.2%	94	1.8%	3.6%	94.6%	96	91	

3.4.21 The analysis shows that the bulk of settlements score well, with Cheddleton, Kingsley, Leek and Werrington all scoring over 90%. Alton and Oakamoor perform particularly poorly, due to their relatively remote locations, with Ipstones marginally ahead. The District's three towns and three largest villages, where the majority of development will be located, are all rated green.

3.5

Overall Settlement Results

3.5.1

Table 3.5 below shows the ratings for each settlement against each of the three classes of information.

3.5.2

In the case of accessibility, the results from Table 3.3 have been used. Under this scenario, the extent of each town or village is capped at 2.5km from the centre of the settlement. This captures 88% of the population whose address relates to one of the fifteen study settlements and, importantly, avoids any overlapping of settlements.

3.5.3

Some clear patterns can be seen in the table below. Leek and Cheadle are the only two settlements which are rated green on all accounts, so they have the greatest capacity for development without significant investment in infrastructure. Biddulph, Blythe Bridge and Werrington are next in line, with just one class rated amber. At the other end of the scale, Alton has the lowest capacity for development, closely followed by Oakamoor, then Caverswall and Waterhouses. In general terms, the larger the settlement, the greater its capacity for development.

Table 3.5: Overall Settlement Ratings

	Social Infrastructure	Physical Infrastructure	Accessibility
Alton			
Biddulph / Biddulph Moor			
Blythe Bridge			
Brown Edge			
Caverswall & Cookshill			
Cheadle			
Cheddleton			
Endon			
Ipstones			
Kingsley			
Leek			
Oakamoor			
Upper Tean			
Waterhouses			
Werrington & Cellarhead			

4

Core Strategy Analysis

4.1

Introduction

4.1.1

The Core Strategy lies at the heart of the Local Development Framework. It is a strategic document which sets direction and provides a framework for future LDF documents.

4.2

Spatial Strategy

4.2.1

The Spatial Strategy sets out how the Council foresees different parts of the District developing in relation to a number of key issues. As with all Development Plan Documents, a number of options were presented for consultation at the issues and options stage. Seven development options were initially considered. These were:

1. Continuation of present approach
2. Town based development
3. Town and larger based village development
4. Distributed development
5. Leek based development
6. New settlement
7. Focused development

4.2.2

Each of these seven options proposed a different way to achieve the vision and objectives of the Core Strategy. After initial consideration by officers, three options were discontinued. These were:

4.2.3

Continuation of present approach – this comprised development within existing settlements only. Although this involved the most limited change to the District, it was deemed not to provide sufficient capacity to accommodate all the required growth.

4.2.4

Leek based development – as the name suggests, this focused the development primarily in and around Leek. This option was considered unrealistic due to the significant level of development on greenfield sites on the edge of the settlement.

4.2.5

New Settlement – providing a new settlement was considered the least sustainable of the seven options given the impact it would have on the countryside and on

infrastructure requirements. As such, it would be contrary to regional planning advice for the District.

4.2.6 The remaining four options were taken forward for consideration in the Core Strategy Issues and Options Consultation Report, each having a varying impact on the District's three towns and rural areas. The options are based on indicative development levels of between 5,500 and 7,500 dwellings, as proposed in the RSS Review Spatial Options document and in the Council's response to this.

4.2.7 The following pages give our appraisal of these four options in light of the findings of the social and physical infrastructure and accessibility assessments. The 'required allocation' figures are based upon the low level figure of 5,500 and high level figure of 7,500, less completions 2001-2007 and dwellings currently under construction or with planning permission.

4.3 ***Appraisal of Town Based Development Scenario*** Introduction

4.3.1 This scenario focuses development in and around the District's three towns, in areas of high accessibility. It aims to accommodate the bulk of the required growth in Leek, Cheadle and Biddulph, limiting development in the villages to affordable housing only. Priority will be given to brownfield sites but the option will allow for peripheral expansion on radial routes. The town centres would be expected to grow as the main service providers for the District.

4.3.2 The Council considers this approach to be highly sustainable, maximising the use of existing infrastructure and supporting the regeneration of towns as foci for the District. There is also the opportunity for large scale development which could achieve high levels of affordable housing, which accords with national and regional planning guidance.

4.3.3 There are several perceived disadvantages to this approach, however. Pressure will be put on the three towns' existing infrastructure and services, which calls into question the capacity of the towns to absorb the development. Whilst brownfield development would take priority, significant development of greenfield sites and open countryside would need to take place and this could possibly lead to a need for the greenbelt boundaries to be amended.

Table 4.1: Town Based Scenario Indicative Development Levels

Indicative Development Levels (dwellings)	Area	Apportionment	Lower Growth Required Allocation	Higher Growth Required Allocation
	Leek	35%	679	1379
	Biddulph	35%	1191	1891
	Cheadle	20%	534	934
	Rural	10%	-209	-9
	TOTAL		2196	4196

Social Appraisal

- 4.3.4 The three towns which form the focus for development in this option rate reasonably after our assessment of social infrastructure. Leek and Cheadle are both rated green whilst Biddulph is rated as amber.
- 4.3.5 The split of development focussing on these settlements means that 55% would be in green rated areas, which have good social infrastructure provision and spare future capacity, while 35% would be in Biddulph which has limited spare capacity for future development.
- 4.3.6 The remaining 10% of development would be focused in rural areas. It is difficult to say whether or not, from a social infrastructure perspective, development should take place in these rural areas as even the facilities located in the larger villages vary in quality and capacity from settlement to settlement. For example only two of the larger villages are green settlements, but as the amount of development proposed to be directed towards them and the rest of the rural areas is small then it may not impact too heavily on the mainly already pressurised social infrastructure of these villages.

Physical Appraisal

- 4.3.7 With 90% of development focussed in areas with 'green' rating for physical infrastructure, this scenario is ranked as the best under the 'physical infrastructure' criterion in Table 4.6.

Accessibility Appraisal

- 4.3.8 The majority of the development, 90%, is expected to be in the major towns and as such any location within these would have good as all three have good levels of accessibility. It is difficult to tell how the remaining 10% of development in the rural areas would rate as these areas vary considerably in their status, although of the larger villages assessed only Alton, Oakamoor and Waterhouses are classified as poorly accessible. However as the rural development would not be confined to these larger villages it is likely that more of the settlements would be poorly accessible than

4.4 ***Appraisal of Town and Larger Village based development Scenario***
Introduction

- 4.4.1 This scenario means that, as well as Leek, Biddulph and Cheadle, development would also take place in the larger villages of the District. Development outside these locations would be for affordable housing only. Brownfield sites would be given priority but the development for the peripheral expansion of the towns and larger villages would also be allowed. This approach would mean that the town centres and larger villages would grow as the main service providers for the District.

- 4.4.2 This approach would be advantageous in that it would support the retention of local services and facilities, maximising the use of existing infrastructure and supporting the regeneration of towns as well as key villages. It is also perceived that there would be several disadvantages to the scheme, namely that, although brownfield sites would have priority, greenfield sites and open countryside in all probability would also be required to meet the development needs, as well as possible Green Belt boundary changes.

Table 4.2: Town and Larger Village Based Scenario Indicative Development Levels

Indicative Development Levels (dwellings)	Area	Apportionment	Lower Growth Required Allocation	Higher Growth Required Allocation
	Leek	30%	485	1085
	Biddulph	30%	997	1597
	Cheadle	20%	534	934
	Rural	20%	178	578
	TOTAL		2196	4196

Social Appraisal

4.4.3 The social infrastructure implications for this option are similar to the town based one except to note there is more development proposed in the larger villages. Leek and Biddulph are allocated the most development at 30% each with Cheadle 20% of the total. This means that 50% of the development would be in the green settlements and 30% in amber.

4.4.4 The remaining 20% presumably would be allocated in the larger villages that we have been appraising. This seems to be a high level as the majority of the remaining settlements once Leek, Biddulph and Cheadle are taken out are poorly provided for in terms of social infrastructure, and classified as red.

Physical Appraisal

4.4.5 This scenario proposes 20% of development in rural areas. As highlighted in figure 3.2, these areas generally suffer from poor supply of physical infrastructure. Hence, with the second largest proportion of developments proposed for rural areas with amber or red supply, this scenario ranks fourth in terms of physical infrastructure supply on Table 4.6.

Accessibility Appraisal

4.4.6 This scenario would place 80% of the required development in the three major towns which are all rated as very accessible and would not expect to have any issues. The increased level of development in the rural areas from the first option

of 20% in this case focuses on the larger villages which all rate as very or reasonably accessible and therefore more likely to be able to accommodate development more easily, with the exception of three, which due to their location are quite remote.

4.5

Appraisal of Distributed Development Scenario

4.5.1

This approach is very different to options 1 and 2 as it would mean that development would be dispersed all across the District according to local needs. All parts of the District could potentially experience development but on a limited scale, with limited development in town centres and greater focus on the local and village centres. This would lead to enhanced transport links between settlements

4.5.2

This approach supports the retention of local services and facilities, assisting in meeting rural needs and ensuring a greater likelihood of accommodating development on brownfield sites and within settlement boundaries. The disadvantages of distributed development however are, that it may require the development of Greenfield sites in some locations. Some settlements may have little or no facilities to support additional development and that it would increase the use of the private car. This approach may not facilitate growth and the regeneration of the towns and provide limited opportunity to achieve high levels of affordable housing because of the smaller scale of developments. This approach may not also fully accord with national and regional planning guidance to focus on sustainable locations.

Table 4.3: Distributed Development Scenario Indicative Development Levels

Indicative Development Levels (dwellings)	Area	Apportionment	Lower Growth Required Allocation	Higher Growth Required Allocation
	Leek	30%	485	1085
	Biddulph	25%	803	1304
	Cheadle	15%	341	641
	Rural	30%	565	1165
	TOTAL		2196	4196

Social Appraisal

- 4.5.3 Distributing development throughout the District would reduce some of the development pressures on social infrastructure in the larger towns. 30% proposed in Leek is not dissimilar to the previous two options, allocating a sizeable chunk of the development in this green classified settlement. 15% in Cheadle seems to be a low proportion considering the settlement is considered to have little pressure on its social infrastructure and future capacity, whereas Biddulph, an amber settlement has 25%. This would mean that 45% of development was in areas classified as green, 25% in amber and the remaining 30% in rural areas in settlements with mixed classifications, the majority of which however are red.

Physical Appraisal

- 4.5.4 This scenario proposes 30% of development in rural areas. As highlighted in figure 3.2, these areas generally suffer from poor supply of physical infrastructure. Hence, with the largest proportion of developments proposed for rural areas with amber or red supply, this scenario ranks fifth in terms of physical infrastructure supply on Table 4.6.

Accessibility Appraisal

- 4.5.5 This scenario, distributing development throughout the District is likely to locate development in the most inaccessible of places when compared with the other options. That said 70% in the three largest settlements would be in very accessible areas, it is the 30% in the rural areas that from an accessibility perspective would not be favourable. Whilst the majority of the larger villages are either very or reasonably accessible many of the smaller ones will not be, and it is development that would possibly located here that would be an issue.

4.6 ***Appraisal of Focused Development Scenario***

- 4.6.1 This scenario focuses development on key development and regeneration opportunities providing the growth to meet demand. The bulk of the development would be in areas in need of regeneration or where opportunities exist. Development elsewhere would be limited and would be for affordable housing only. This would mean that the town centres would grow as the main service providers for the District.

- 4.6.2 This approach would mean that brownfield sites are developed before Greenfield, supporting areas in need of regeneration or development. It would also provide an opportunity for large scale developments which may achieve high levels of

affordable housing. The potential disadvantages include potential in-migration having an adverse impact on the North Staffs. The development sites may also not be the most sustainable, increasing the use of the private car and mean that other areas lose out in terms of other investment opportunities and services and facilities.

Table 4.4 Focused Development Scenario Indicative Development Levels

Indicative Development Levels (dwellings)	Area	Apportionment	Lower Growth Required Allocation	Higher Growth Required Allocation
	Leek	35%	679	1379
	Biddulph	25%	803	1304
	Cheadle	25%	727	1228
	Rural	15%	-15	285
	TOTAL		2196	4196

Social Appraisal

4.6.3

The indicative development levels for the District, focussing development on key development and regeneration opportunities, mean that most of the development will be in the larger towns of Leek, Biddulph and Cheadle, 35%, 25% and 25% respectively. This is positive as it means 60% will be in green settlements and 25% in amber. The remaining 15% is expected to be in rural areas which have a mix of varying social infrastructure. However the difference between this scenario and the others is that development will be focused in areas where there is an opportunity or a need as opposed to allocating development to settlements then finding sites to accommodate it

Physical Appraisal

4.6.4

This scenario proposes 85% of development in the three core towns. As highlighted in figure 3.2, these areas benefit from excellent supply of physical infrastructure. Hence, with the second largest proportion of developments proposed for core towns with green supply, this scenario ranks second in terms of physical infrastructure supply on Table 4.6.

Accessibility Appraisal

4.6.5 85% of development, with the focused development scenario would be expected to be in the three very accessible towns of the District. As with the previous three scenarios this, from an accessibility perspective is not expected to be an issue. The remaining 15% of development would have to be carefully located in the rural areas to ensure that the sites were accessible.

4.7 ***Appraisal of Preferred Option Scenario***

4.7.1 The Preferred Option Scenario comprises a further approach to the distribution of development not included within the Issues and Options Consultation Report. It has been compiled to reflect the views received in the responses to the four published options, views of local councillors and the need to restrain the spread of development outside of established settlements.

4.7.2 This scenario focuses development on the three main towns of the District and the larger villages but allows for limited development other smaller settlements to meet local needs. It also targets areas in need of regeneration. Under this scenario, around 20% of development will be in rural areas.

Table 4.5 Preferred Option Indicative Development Levels

Sub-Area	Housing			
	2006-2026 Requirement	Annualised development rate	Amount to be allocated	Affordable housing target
Leek	1800	90	1019 (25.0%)	450
Biddulph	1200	60	918 (22.5%)	400
Cheadle	1500	75	1335 (32.8%)	550
Rural	1500	75	802 (19.7%)	300
DISTRICT TOTAL	6000	300	4074	1700

Social Appraisal

4.7.3 From a social infrastructure perspective having the majority of the development in the 3 largest settlements is preferable, as has been the case with the other scenarios. In this case 57.5% will be in the green rated settlements of Leek and

Cheadle with 22.5% in amber Biddulph. The remaining 20% in rural areas where the scope for future development in terms of social provision is varied.

Physical Appraisal

- 4.7.4 This scenario proposes some 81% of development in the three core towns. As highlighted in figure 3.2, these areas benefit from excellent supply of physical infrastructure. Hence, with the third largest proportion of developments proposed for core towns with green supply, this scenario ranks third in terms of physical infrastructure supply on Table 4.6.

Accessibility Appraisal

- 4.7.5 The accessibility issues relating to the preferred strategy do not differ from the previous four options. With 80% of the development proposed in the three main towns accessibility is not expected to be a problem with this scenario. 20% in the rural areas is more of a concern in terms of access, although presumably when deciding where to locate development within settlements accessibility will be a major consideration when assessing the sustainability of a scheme and will be reflected in the final sitings.

4.8 ***Conclusions***

- 4.8.1 In conclusion, Town Based and Focused Development Scenarios equally rank as the most sustainable options, with distributed development being the least sustainable in terms of social, physical and accessibility infrastructure.

- 4.8.2 The Preferred Option ranks as third most sustainable. By using this ranking system as explained in the Stage One Methodology chapter each assessment criteria is treated as being of equal importance, there is no weighting towards any of the surveyed data.

- 4.8.3 The following table ranks the most sustainable scenarios when measured against the social and physical infrastructure and the accessibility of each site.

Table 4.6: Development Scenario Sustainability Ranking

Scenario	Social Rank	Physical Rank	Accessibility Rank	Total	Overall Ranking
Town based	3	1	1	5	1=
Town and Larger village based	4	4	3	11	4
Distributed Development	5	5	5	15	5
Focused Development	1	2	2	5	1=
Preferred Option	2	3	3	8	3

4.8.4

As mentioned earlier, the ranking exercise is primarily based on a sustainability assessment of the options, which includes infrastructure (social and physical) and accessibility measures. The above assessment does not take into account of any social and economic benefits for each of the options, not least because such an appraisal was outside the scope of this study.

4.8.5

In addition, whilst the Preferred Option ranks marginally below the Options 1 and 4 in terms of infrastructure capacity and accessibility due to emphasis on development in rural areas, the choice of locations for allocations in rural area can improve the Preferred Option's overall ranking.

Appendix One

Appendix Two

Accessibility Maps

Map Reference	Map title (click to open)	Description	Figure in document
KD 335	KD 335 Local Access MF AM P Relaxed	'local' accessibility calculation (standard) AM Peak	
KD 336	KD 336 Local Access MF AM P Rigorous	'local' accessibility calculation (high frequency) AM Peak	
KD 337	KD 337 Local Access MF OffPeak Relaxed	'local' accessibility calculation (standard) Off Peak	
KD 338	KD 338 Local Access MF OffPeak Rigorous	'local' accessibility calculation (high frequency) Off Peak	
KD 339	KD 339 Local Access MF PM Peak Relaxed	'local' accessibility calculation (standard) PM Peak	
KD 340	KD 340 Local Access MF PM Peak Rigorous	'local' accessibility calculation (high frequency) PM Peak	
KD 341	KD 341 Local Access MF Evening Relaxed	'local' accessibility calculation (standard) Evening	
KD 342	KD 342 Local Access MF Evening Rigorous	'local' accessibility calculation (high frequency) Evening	
KD 343	KD 343 Criteria matching Relaxed	Overall 'local' accessibility calculation (standard)	
KD 344	KD 344 Criteria matching Rigorous	Overall 'local' accessibility calculation (high frequency)	
KD 345	KD 345 SM Area Type ONS	Land classification (Urban Rural) as released from Office of National Statistics	
KD 346	KD 346 Ward boundaries	Mapped ward boundaries in Staffordshire Moorlands	
KD 347	KD 347 Composite Network Score	Overall 'network' analysis score	
KD 348	KD 348 Network Stoke AM	'network' accessibility calculation to Stoke (Hanley) AM Peak	

KD 349	KD 349 Network Stoke Offpeak	'network' accessibility calculation to Stoke (Hanley) Off Peak
KD 350	KD 350 Network Stoke PM	'network' accessibility calculation to Stoke (Hanley) PM Peak
KD 351	KD 351 Network Stoke Evening	'network' accessibility calculation to Stoke (Hanley) Evening
KD 352	KD 352 Network Larger AM	'network' accessibility calculation to Settlements +5000 population AM Peak
KD 353	KD 353 Network Larger Offpeak	'network' accessibility calculation to Settlements +5000 population Off Peak
KD 354	KD 354 Network Larger PM	'network' accessibility calculation to Settlements +5000 population PM Peak
KD 355	KD 355 Network Larger Evening	'network' accessibility calculation to Settlements +5000 population Evening
KD 356	KD 356 Network Local AM	'network' accessibility calculation to All local settlements AM Peak
KD 357	KD 357 Network Local Offpeak	'network' accessibility calculation to All local settlements Off Peak
KD 358	KD 358 Network Local PM	'network' accessibility calculation to All local settlements PM Peak
KD 359	KD 359 Network Local Evening	'network' accessibility calculation to All local settlements Evening
KD 360	KD 360 LA Relaxed Alton	Detailed area maps for 'local' accessibility
KD 361	KD 361 LA Relaxed Biddulph	
KD 362	KD 362 LA Relaxed Caverswall and B Bridge	
KD 363	KD 363 LA Relaxed Cheadle	
KD 364	KD 364 LA Relaxed Cheddleton	
KD 365	KD 365 LA Relaxed Endon	
KD 366	KD 366 LA Relaxed CENTRAL AREA	

KD 367	KD 367 LA Relaxed Kingsley	
KD 368	KD 368 LA Relaxed Leek	
KD 369	KD 369 LA Relaxed NORTH EAST area	
KD 370	KD 370 LA Relaxed Upper Tean	
KD 371	KD 371 LA Relaxed Werrington	
KD 372	KD 372 Composite Network Score Alton	
KD 373	KD 373 Composite Network Score Biddulph	
KD 374	KD 374 Composite Network Score Caverswall and B Bridge	
KD 375	KD 375 Composite Network Score Cheadle	
KD 376	KD 376 Composite Network Score Cheddleton	
KD 377	KD 377 Composite Network Score Endon	Detailed area maps for 'network' accessibility
KD 378	KD 378 Composite Network Score CENTRAL AREA	
KD 379	KD 379 Composite Network Score Kingsley	
KD 380	KD 380 Composite Network Score Leek	
KD 381	KD 381 Composite Network Score NORTH EAST area	
KD 382	KD 382 Composite Network Score Upper Tean	
KD 383	KD 383 Composite Network Score Werrington	
KD 384	KD 385 LA Relaxed WITH BUS STRATEGY	Overall 'local' accessibility calculation (standard) PLUS the Intra-Urban Bus Network

KD 385	KD 386 Network WITH BUS STRATEGY	Overall 'network' analysis score PLUS the Intra-Urban Bus Network
KD 431	KD 431 Access to the Road Network	Access to the local road network in Staffordshire Moorlands
KD 432	KD 432 Local Relaxed with Bus Routes to Key Centres	
KD 433	KD 433 Local rigorous with Bus Routes to Key Centres	
KD 462	KD 462 Local Bus Network	
KD 463	KD 463 Local Bus Network plus LTP2	

Appendix Three

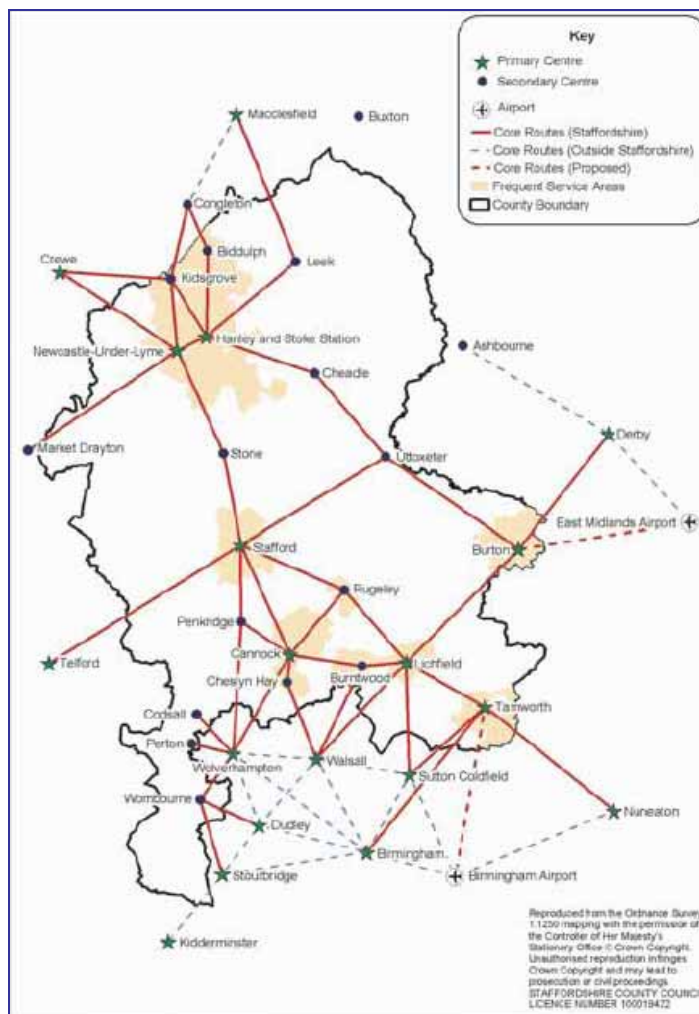
- 4.8.6 Extract from 'Accessibility Planning Guidance: Full Guidance' (DfT)
- 4.8.7 <http://www.dft.gov.uk/pgr/regional/ltl/accessibility/guidance/gap/accessibilityplanningguidanc3633?page=11#a1079>
- 4.8.8 Core accessibility indicators
- 4.8.9 The following accessibility outcomes will be core indicators for all Local Transport Plan (LTP) areas, for the next LTP period. These indicators will be measured centrally by DfT based on a common methodology and consistent, centrally available, data sets.
- 4.8.10 The results of these calculations will be made available to local authorities as soon as possible, and updated annually thereafter.
- 4.8.11 All the indicators relate to total travel time by 'public transport'. Public transport includes:
- registered bus services;
 - flexibly routed services which are available to the general public, and which have a defined area of operation (though comprehensive data on these may not be available for the 2004 indicators); and
 - walk and, where appropriate (secondary school, further education, work, major centres), cycle modes.
- 4.8.12 The indicators are:
- % of a) pupils of compulsory school age 26; b) pupils of compulsory school age in receipt of free school meals within 15 and 30 minutes of a primary school and 20 and 40 minutes of a secondary school by public transport
 - % of 16-19 year olds within 30 and 60 minutes of a further education establishment by public transport

- % of a) people of working age (16-74); b) people in receipt of Jobseekers' allowance within 20 and 40 minutes of work by public transport
- % of a) households b) households without access to a car within 30 and 60 minutes of a hospital 27 by public transport
- % of a) households b) households without access to a car within 15 and 30 minutes of a GP by public transport
- % of a) households; b) households without access to a car within 15 and 30 minutes of a major centre by public transport

Appendix Four

Bus Strategy (annex E – page E22)

In the smaller urban areas, which include Stone, Uttoxeter, Leek, and Cheadle, urban bus services have a slightly different role. The smaller areas are less likely to suffer congestion, and have a large proportion of their population within easy walking distance of the town centre. Buses are, therefore, competing against relatively easy access by car and walking trips. As a result, demand tends not to be high enough to sustain a high frequency service. Emphasis will be placed on ensuring sufficient urban services are provided to allow for access to key services to reduce transport-related social exclusion.



Inter-Urban Network (see figure above)

It is expected that this network should have the following characteristics:

- links secondary to primary settlements, including those across the County boundary;
- routes as direct as possible to minimise journey times;
- interchange at railway stations en-route where possible – links to mainline railway stations served by inter-city or regional services are particularly important;
- operates 7 days/week with an evening service; and
- partnership working with operators to improve infrastructure and vehicle quality

These services will be particularly important in providing links where an equivalent direct rail service does not exist or where the rail service is not sufficiently frequent to meet all accessibility needs.

E20 - Inter-Urban Network and Frequent Service (Urban) Areas

Strategy details Biddulph, Leek and Cheadle as secondary centres (pg 23)

Plus Bus – strategy encouraging add-ons to Leek from Buxton and Stoke Stations as no rail station in Leek.

Bus Strategy (Annex E – pg E42)

In response to some of these issues a “Design Guide for Residential Areas” has been issued, which goes some way to setting out standards for new developments. Section

185 to 191 of this guidance deals with “Access to Bus Services” and make the following statements:

- large developments are likely to lead to the introduction of specific new bus services. In smaller housing schemes operators should look at adapting existing routes;
- bus stops should be within 350 metres walking distance of every dwelling, and in hilly areas this should be reduced to 200 metres;
- developers should identify the types of buses that operators would be likely to use, and ensure that road design takes this into account;
- all roads should be suitable for bus provision and the layout should permit circular routes where possible.
- bus services should be provided in the early stages of development in order to establish patterns of movement;

- bus stops on opposite sides of the road should be staggered, approximately 45 metres apart;
- pedestrian routes should link all bus stops;
- in addition to bus shelters it may be necessary to locate telephone kiosks, post boxes and information boards. Where this is carried out the footway must be well lit and widened to a minimum of 3 metres;
- safe set-down and pick-up arrangements outside schools must be provided; and
- on roads, which are frequently used by buses (half-hourly or more frequent), a minimum carriageway width of 6.5 metres is required.