The 2010 English Indices of Deprivation
What does it mean for Lincolnshire?

Overview
This report looks at results from the Index of Deprivation 2010 (ID 2010) released on the 24th March 2011 and compares them with the IDs published in 2004 and 2007. It examines data for the overall index and its domains to determine how deprivation has changed within the county. It also looks at how these changes compare to those which have occurred nationally to determine to what extent deprivation may have reduced or increased.

Introduction
The 2010 Indices of Deprivation was commissioned by the Department of Communities and Local Government (DCLG) from the Social Disadvantage Research Centre at Oxford University, and updates the previous indices released in 2007, 2004 and 2000. It replaces the Indices of Deprivation 2007 as the official measure of deprivation in England, updating the ID indicators with data relating to 2008 wherever possible, though a single indicator drawing on Census 2001 data does remain.

The ID uses a statistical geography called Lower Super Output Areas (LSOAs). LSOAs are homogenous small areas of relatively even population size and these geographies have been maintained as part of the 2010 ID release, enabling ease of comparison with 2004 and 2007 ID results.

More information on LSOAs can be found at http://www.research-lincs.org.uk/Geography-Guide.aspx. Please note that comparisons with 2000 ID data is not possible due to differences in indicators used and the geographies the data is supplied at.

What is the Indices of Deprivation?
Deprivation covers a broad range of issues and refers to unmet needs caused by a lack of resources of all kinds, not just financial. The Indices of Deprivation attempt to measure deprivation using a number of indicators across several domains (detailed on page 2) and, as a result, is a valuable source of data for evaluating the various measures of deprivation existing in small areas across the country. It is through the results of this study that many areas are identified as a priority for funding to improve the quality of life of their various populations.
How do the Indices work?

The Indices of Deprivation 2010 is the collective name for a group of 10 indices which all measure different aspects of deprivation. They are as follows:

- The Index of Multiple Deprivation (IMD)
- Income Domain
- Employment Domain
- Health and Disability Domain
- Education, Skills and Training Domain
- Barriers to Housing and Other Services Domain
- Crime Domain
- Living Environment Domain
- Indices of Deprivation Affecting Older People (IDAOPI)
- Indices of Deprivation Affecting Children Index (IDACI)

The most commonly used of these is the Index of Multiple Deprivation (IMD), which is a combination of all the seven domains and provides an indicator of general deprivation levels across England.

Between them the seven domains of income, employment, health, education, crime, housing, and living environment contain 38 indicators in total. Each of these domains has their own score and rank which enables areas to be ranked based on their Index of Multiple Deprivation score. In turn this means that the most and least deprived areas in England can be identified and comparisons between areas can be made as to whether one is more or less deprived than the other. A number of the domains also have sub domains and information on these is presented later on in the report.

In order to provide an opportunity for comparison between individual domains the scores for each domain are ranked according to their position against all other LSOAs in England, with a rank of 1 being the most deprived area.

The indices also provide information on the proportion of LSOAs within a local authority which fall within the top 10% of nationally deprived areas (concentration of deprivation) and the proportion of England’s most deprived LSOAs which fall within each district (extent of deprivation). The Income and Employment domains can also be used to identify the absolute numbers of people affected by these types of deprivation.

For a full list of the indicators and their domains and sub domains please refer to the following page on the Lincolnshire Research Observatory (LRO) website http://www.research-lincs.org.uk/Deprivation.aspx

For further information on the methodologies used to score and rank areas in England please refer to the technical report on the Department for Communities and Local Government website at http://www.communities.gov.uk/publications/corporate/statistics/indices2010technicalreport
Limitations of the Indices of Deprivation

There are a number of caveats that need to be taken into account when using and interpreting ID data:

- The ID is not a direct measure of deprivation in the way that the ‘unemployment rate’ is a real measure of the proportion of people out-of-work. This means it can tell you if one area is more deprived than another but not by how much. Therefore, an area with a score of 100 is not twice as deprived as an area with a score of 50.

- The ID is a measure of deprivation, not affluence. Therefore the area ranked as the least deprived is not necessarily the most affluent.

- Not every person living in a deprived area will themselves be deprived. Equally, there will be some deprived people living in the least deprived areas.

- Whilst the IMD 2010 can be compared with 2004 and 2007 IMD datasets to identify how areas are changing over time relative to other areas across England, it is not a direct measure of whether areas are “improving” or “closing the gap” against the average.

    The differences between 2004, 2007 and 2010 ID show how an area has fared compared to areas across England with similar levels of deprivation. An area could well have improved in real-terms (e.g. unemployment has fallen, incomes and skills higher, a fall in crime rates etc.), and may have improved faster than the average. However, if other areas with similar levels of deprivation have done slightly better, the area will score as more deprived in 2010 than say 2007.

    Whilst the ID is useful in understanding an area relative to others it needs to be used alongside other direct measures to understand how it has changed over time.

- The majority of data used in the ID 2010 is from 2008 (with one indicator using 2001 Census data). This means that the data used is pre-recession and therefore the ID 2010 will not show the effects of the recession on areas.

Comparing Results from the 2004, 2007 and 2010 Indices of Multiple Deprivation

Putting the above caveats of ID usage to one side, one of the main aims of the IMD has been to make results comparable as much as possible across the different releases. As a result the domains and methodology are the same in the ID 2010 as in the ID 2004 and ID 2007 and as far as possible most indicators are equivalent to their counterparts. Therefore, results from the ID 2004, 2007 and 2010 are directly comparable and most change is likely to reflect real relative change between the time periods.
An Overview of Deprivation

In addition to the information available on the LRO website we have provided some useful maps below to illustrate results from the 2010 Index of Multiple Deprivation for England.

Map 1: 2010 Index of Multiple Deprivation in England

Map 1 above shows that nationally deprivation is a particular issue for coastal areas. If we put to one side the south west corner of the country, a clear north / south divide is also apparent. Major areas of deprivation across the country include London, the north east around Newcastle and Sunderland, and the coal mining areas around Sheffield and Wakefield.
Map 2 above shows deprivation in Lincolnshire and in those neighbouring areas around the county with a net commuter flow of 500 plus people. It shows that levels of deprivation are also an issue on the coast going into Norfolk and further inland. The urban areas of Peterborough in the South, and Hull, Grimsby and Scunthorpe in the North are highlighted with higher levels of deprivation (with Grimsby in particular having an area that is the second most deprived in the country). To the North West, the unitary authority of Doncaster and Bassetlaw district both have large areas which are deprived.
2010 Index of Multiple Deprivation in Lincolnshire

Referring to map 3 below we can see that in line with previous ID the east of the county appears to be suffering greater levels of deprivation than the west. In the east of the county, levels of deprivation are at their greatest on the coast and in Boston with areas further inland being less deprived. In the west of the county, the more deprived areas are by and large confined to the urban areas of Lincoln, Grantham and Gainsborough.

Map 3: 2010 Index of Multiple Deprivation in Lincolnshire

Just over 4% of Lincolnshire’s population (approximately 30,500 people) live in areas that are in the top 10% most deprived areas nationally. These areas are shown on map 3 in dark blue.

The most deprived Lower Super Output Area (LSOA) in the county is in Lincoln in Moorland Ward. This area has consistently been ranked as the most deprived in the county and has this year risen to 132nd out of the 32,482 LSOAs in England.

The least deprived area of the county is in Cranwell and Byard’s Leap Ward, north of Sleaford. It is currently ranked 32,450 having fallen over 400 places since 2007.

For an area that is classed as being predominantly rural it is perhaps surprising that there are only two LSOAs (in and around Skegness) in the top 10% most deprived in Lincolnshire that are classed as rural. It is though in line with national trends with 98% of the most deprived LSOAs being urban areas.

Looking below the overall IMD measure at the individual domains and sub domains shows us where the county is most and least deprived relative to other areas on certain issues. For more information regarding the domain, sub domains and their underlying indicators please refer to [http://www.research-lincs.org.uk/Deprivation.aspx](http://www.research-lincs.org.uk/Deprivation.aspx)
The employment and health domain maps show similar pictures with the south west of the county being generally the least deprived, relative to other areas of the country based on these measures.

The crime domain map on the other hand illustrates the relatively low levels of crime in the county compared to the rest of England, with most areas classed as being amongst those least deprived. There are though hot spots of crime deprivation in all the main urban areas in the county.
This domain captures the extent of deprivation in terms of education, skills and training in a local area. The indicators are structured into two sub domains: one relating to education deprivation for children / young people in the area, and one relating to lack of skills and qualifications among a sub-set of the working age adult population.

The skills sub domain map highlights a particular issue in terms of lack of skills amongst the working age population on the coast, down through Boston and into South Holland District.
This domain focuses on deprivation with respect to the characteristics of the living environment. It comprises two sub-domains: the 'indoors' living environment which measures the quality of housing and the 'outdoors' living environment which contains two measures about air quality and road traffic accidents.

The overall living environment deprivation domain highlights issues for the main urban areas in the county along with Market Rasen.

The sub domain maps below suggest that there is a result of quality of housing in the Market Rasen area.
The purpose of this domain is to measure barriers to housing and key local services. The indicators are structured into two sub-domains: 'geographical barriers' and 'wider barriers' which includes issues relating to access to housing, such as affordability.

The overall domain map is dominated by the geographical barriers sub domain which is unsurprising given the rural and sparse nature of the county.

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The income deprivation domain captures the proportion of the population experiencing income deprivation in an area. In addition, an Income Deprivation Affecting Children Index and an Income Deprivation Affecting Older People Index were created. These two indices represent the proportion of children aged 0-15 living in income deprived households and the proportion of older people aged 60 and over living in income deprived households respectively.

All three maps for this domain show a similar picture in that income deprivation is more of an issue for all ages in coastal and urban areas.
Map 4 below shows the changes in rank for each LSOA in Lincolnshire since the 2007 data release. The LSOAs in dark blue have experienced the largest rises in rank since 2007 and as a result are now more deprived in 2010 relative to other areas nationally.

Map 4: Change in Index in Multiple Deprivation 2007 - 2010

The LSOAs in yellow on map 4 have experienced the largest falls in rank since 2007 and as a result are now less deprived in 2010 relative to other areas nationally.

Overall it shows that those LSOAs which have experienced the largest falls in rank, and as a result are now less deprived relative to other areas, are predominantly in the western half of the county.

The LSOA which has risen the most in terms of its rank, and is now more deprived relative to other areas, is in East Lindsey, in St. Michael’s Ward, which is south of Louth. This area has risen over 5,000 places in England and is currently ranked 20,368th nationally.

At the opposite end of the scale a LSOA in North Kesteven, in Bassingham Ward which contains South Hykeham, Thurlby and Witham St Hughs, has fallen by over 4,500 places in the deprivation ranks in England and 81 places in Lincolnshire.

Lincolnshire now has an additional five LSOAs ranked in England’s top 10% most deprived areas. Two of these areas are in East Lindsey (LSOAs in Central Ward in Mablethorpe, and in Scarborough Ward in Skegness), a further two are in Lincoln (in Glebe and Birchwood Wards), and one is in South Kesteven (in Earlesfield Ward in Grantham).
Figure 1 below refers to the 19 LSOAs in the county which are in the top 10% most deprived nationally based, on their overall IMD ranking, and looks at how many of the Indices domains they are also in the top 10% most deprived nationally. It demonstrates that the most deprived areas face multiple issues with the majority of these LSOAs (95%) amongst the most deprived in at least three of the seven domains, and just over half (53%) are amongst the most deprived in at least four of the domains.

**Figure 1:** Number of domains in which Lincolnshire LSOAs in the top 10% deprived nationally are in the most deprived decile

<table>
<thead>
<tr>
<th>Number of domains</th>
<th>Number of LSOAs</th>
<th>Percentage of LSOAs</th>
<th>Cumulative Percentage of LSOAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>15.8%</td>
<td>15.8%</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>36.8%</td>
<td>52.6%</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>42.1%</td>
<td>94.7%</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>5.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

In order to better understand the changes that LSOAs have undergone, the following maps on page 14 present changes in rank for LSOAs for selected domains that make up the overall IMD calculation. Maps for the domains of living environment, income, and education have not been reproduced here as they in fact show very little change for the vast majority of LSOAs between 2007 and 2010.

The IMD 2010 crime domain measures the rate of recorded crime for four major crime types, representing the risk of personal and material victimisation at a small area level. The map of the crime domain shows that there has been large movement in ranks for areas on the coast, in South Holland district and that these areas are now more deprived based on the measures in the crime domain. Conversely there are a small number of areas around Boston and Spalding that have seen large improvement in their ranking in the crime domain and are now less deprived based on these measures.

In terms of the health domain (which measures rates of poor health, early mortality and disability in an area and covers the entire age range) a large number of areas in the North East of the county around Louth, Market Rasen and Horncastle have become more deprived along with a patch of areas in the South East and in and around the urban areas of Lincoln, Grantham and Gainsborough. Health deprivation has been an issue on the coast for a number of years and the lack of change shown in the map means that this is an issue that remains.

Those areas on the health domain map where we are seeing change suggests that amongst other things, these are also potentially areas where the changing
and ageing demographic and resulting health issues, are more acute than in other areas of the county.

Moving on to the barriers domain map (which measure barriers to housing such as affordability, and geographical barriers such as access to key local services) there are a small number of areas across the county, though particularly around Louth, that have had large rises in their ranking and as a result are relatively more deprived based on this measure compared to other areas. This could point to the removal of a key local service in these areas.

Finally the employment domain map (which measures involuntary exclusion of the working age population from the world of work), which shows again a small number of areas have become relatively more deprived particularly in the South East corner of the county around Boston, Spalding and Holbeach. These areas have historically had low levels of unemployment though over time unemployment levels have been observed to be on the increase.

Whilst movement in ranks has been experienced by Lincolnshire LSOAs between 2007 and 2010, if we split all 32,428 LSOAs nationally into 10 equal parts, or deciles, we see that there has been fairly limited movement between deciles. Overall only 128 of Lincolnshire LSOAs (31%) moved decile between 2007 and 2010, compared with 34% nationally.

**Figure 2:** Proportion of LSOAs in the same decile of the Index of Multiple Deprivation in 2007 and 2010

Referring to figure 2 above, most of this movement can be seen in the middle deciles. Conversely, it is the most and least deprived LSOAs (i.e. those in IMD deciles 1 and 10 respectively) that have experienced the least amount of change between 2007 and 2010. In fact all of Lincolnshire’s LSOAs which were in the top 20% most deprived nationally in 2007 remain within the top 20% in 2010.
Local Authority District Level Summaries

The Department for Communities and Local Government (DCLG) calculate an average score for each district based on their LSOA results, and then rank the districts against each other based on their average score.

This measure describes the district as a whole, taking into account the full range of LSOA scores across a district. The advantage of this measure is that it describes the LSOA by retaining the fact that more deprived LSOAs may have more ‘extreme’ scores, which is not revealed to the same extent if the ranks are used.

**Figure 3: District IMD Rankings 2007 and 2010**

![Bar chart showing IMD rankings for various districts in Lincolnshire, with Lincoln remaining the most deprived district and North Kesteven the least deprived.](image)

Figure 3 above shows how the districts in Lincolnshire fare based on this measure of rank of average score with all apart from North Kesteven more deprived in 2010 relative to all other areas. Lincoln remains the most deprived district in Lincolnshire with North Kesteven the least deprived.

Please note that the above analysis uses 2007 IMD data that takes into account post 2009 boundary changes and hence the 2007 ranks will not be the same as those presented in the report ‘Gaining Value from the 2007 ID in Lincolnshire’.

A further measure of deprivation at local authority district level is that of extent. The extent of deprivation is equal to the proportion of a local authority district's population living in the most deprived LSOAs in the country. The aim of this measure is to portray how widespread high levels of deprivation are in a district. It only includes districts containing LSOAs which fall within the most deprived 30% of LSOAs in England.
Referring to figure 4 above which shows the extent of deprivation in each of Lincolnshire’s districts, all of districts in the county have had an increase in the proportion of their population living in the most deprived LSOAs in the country between 2007 and 2010, with Lincoln showing the most marked difference.

**Figure 4: Extent of District Deprivation**

<table>
<thead>
<tr>
<th>District</th>
<th>Proportion of population living in most deprived areas (%)</th>
<th>Change in % since 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>16.7</td>
<td>+2.0</td>
</tr>
<tr>
<td>East Lindsey</td>
<td>22.0</td>
<td>+1.7</td>
</tr>
<tr>
<td>Lincoln</td>
<td>29.8</td>
<td>+2.1</td>
</tr>
<tr>
<td>North Kesteven</td>
<td>0.1</td>
<td>+0.1</td>
</tr>
<tr>
<td>South Holland</td>
<td>1.1</td>
<td>+0.4</td>
</tr>
<tr>
<td>South Kesteven</td>
<td>3.7</td>
<td>+0.8</td>
</tr>
<tr>
<td>West Lindsey</td>
<td>9.4</td>
<td>+1.9</td>
</tr>
</tbody>
</table>

Despite this uniformity across the districts in terms of increased populations living in the most deprived areas, figure 5 above illustrates that the pattern of deprivation across the districts is markedly different. Boston, East Lindsey and Lincoln all have high percentages of their LSOAs amongst the most deprived in the country. The districts of North Kesteven and South Kesteven have the largest proportions of their LSOAs amongst the least deprived in the country.
The Lincolnshire Research Observatory Partnership

The Lincolnshire Research Observatory (LRO) is a partnership of public and voluntary sector organisations from across the county and region who aim to share, and improve both access to and use of, quality data and information, facilitating a better understanding of the economic, social, health and environmental issues impacting on the county.

The general remit of the LRO partnership is to enable partner organisations to fulfil their respective duties and responsibilities in the commissioning and delivery needs and evidence based interventions. It will do this by:

- Acting as the Shared Evidence Base (SEB), a central repository of quality data and information on the county, making it readily and appropriately accessible to all.
- Serving as a source of expertise in analysis and interpretation of data and information
- Supporting the dissemination of information and findings via the production of reports and documents ensuring their availability in appropriate formats
- Identifying the data/information needs, availability and gaps in the county and establishing the means for addressing them
- Raising levels of expertise and capacity amongst the partner organisations

The LRO website can be accessed using the following web address:

http://shared.research-lincs.org.uk

For further information on the LRO partnership or on accessing and using the LRO, please contact the Research and Information Team on 01522 550567 or on email: lro@lincolnshire.gov.uk

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