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Summary Approach to 2011 Planning Data Derivation

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1 INTRODUCTION

The study brief identifies the need to derive transport strategies and plans for the forecasting period up to 2021. The Study Team, during the Inception Report preparation period, envisaged the need for at least one intermediate year between base year 2000 and forecast year 2021. This intermediate year was to be selected from a range of years for which NTEM (National Trip End Model) planning data is available. DTLR provided PFC with data for a number of future years including 2001, 2006, 2011 and 2021. The Study Team, in consultation with the Project Management Group, agreed to include 2011 and 2021 as the study forecast years.

Having established an accurate set of base year planning data, we summarise in this report the process of deriving the planning data for the forecast year 2011. The approach reflects derivation of both population and employment data taken from a variety of sources and reflecting ongoing issues relating to the accuracy of the NTEM data received by the Study Team.

2 THE PROCESS

In arriving at an accurate set of figures for the year 2000, the following methodology has been followed:

1. Obtain 2011 NTEM data (District & NTEM Zone Level);
2. Obtain 2011 Local data (District level);
3. Comparison of alternative data sources;
4. Consultation with local officers;
5. Disaggregation of District level data to NTEM Zone level; and
6. Disaggregation of NTEM Zone level to A453 Zone level for modelling.

3 OBTAIN 2011 NTEM DATA

Following previous problems, the revised NTEM data for the year 2011 was received from HETA in May 2001. However, given the earlier inaccuracies that have been apparent, and to satisfy both the team and client, a comparative analysis with local data sources has been undertaken.

4 OBTAIN 2011 LOCAL DATA

In order to verify the NTEM data, population information was sought from the various County Councils. This was for those Districts relating to the Study Area. The data has been provided at a District level but for population only. No data relating to employment was available (i.e. number of jobs).

Further investigations have been undertaken to obtain a comparative set of figures for employment data in the context of this not being available from the local authorities. The team approached the company Cambridge Econometrics as the only potential source identified. Two issues arose in relation to this data source. The first of these being that there was a significant cost attached and secondly, it appears through discussion with DTLR that

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the data that would be provided is in fact the basis for NTEM employment data. Hence, there would only be limited benefit in obtaining it.

In addition to the data to be used for comparative purposes with NTEM, site specific development data has been obtained from the local planning authorities for parts of the same districts as above being within or directly relating to the study area. This will inform the Study Team of any major development areas that will require special attention in the evolving strategy options, and has facilitated the disaggregation of 2011 planning data to an A453 study zone level.

The consultations carried out with both the County Councils and the Local Planning Authorities reflect the study team's ambition to utilise planning data that has a level of reality beyond the housing and employment targets as outlined in the Structure/Local Plans. In addition, it should be noted that the consultation carried out with the officers of Nottingham City Council post-dates the completion of their Urban Capacity Study and the figures provided reflect their viewpoint on the likely growth impacts outlined in that document.

5 COMPARISON OF ALTERNATIVE DATA SOURCES

Population data from the NTEM and Local Authority sources were compared at a District level and any major discrepancies highlighted as shown in Table 1. Whilst there would appear to be a good match between the two data sources for the majority of the local Districts, those in Gedling (12.5%), Nottingham (8.4%) and South Derbyshire (10.5%) were cause for concern.

6 CONSULTATION WITH LOCAL OFFICERS

Following the above comparative process, where anomalies were apparent, the findings were presented to the County Councils. The guidance was clear from the officers that where the figures differed significantly, the NTEM data should be substituted with the local data. This decision was taken on the basis that NTEM figures are simply *forecasts* based on past trends, whereas the local figures are *projections* taking into account the local views and are therefore more likely to be accurate.

District population totals based on County Council projections were therefore adopted for Gedling, Nottingham and South Derbyshire.

7 DISAGGREGATION OF DISTRICT DATA TO NTEM ZONE LEVEL

The comparative process at District level above has resulted in a set of "**Study Adopted**" planning data. This has been attributed to NTEM Zone level on the basis of the data provided from HETA in the form of 2011 projections. For the three Districts identified as problem areas the district totals have been replaced with the Local Authority (LA) equivalents, these have then been disaggregated on the basis of the NTEM zone distribution from HETA. These figures are shown in Table 2.

8 DISAGGREGATION OF NTEM ZONE LEVEL TO A453 MODEL ZONES

In order to allow for the modelling process to take place at the 2011 forecast year, the Study Adopted data at the NTEM Zone level must be broken down further to an A453 Zone level. An approach to apportioning the Study Adopted data to the A453 Zones is to utilise the data that has been received from the various Local Planning Authorities in terms of the site-specific development locations for population and employment.

Table 3 shows the Local Authorities Development Site Identification List. The locations for new housing have then been assigned to A453 zones. In relation to the housing figures, these have been converted to population estimates based on an average household size for each District. (These figures have taken account of potential changes in H/H size over the period between 2000 and 2011 as expressed in NTEM data).

Table 4 shows the locally derived employment figures based on development site information that was provided from the relevant Local Authority for the year 2011. This information was given by area (Hectares) rather than number of jobs. It has not been possible to convert these figures to number of employees. Consultations with HETA and the County Councils have confirmed that there is no readily available factor to convert employment in area units to total numbers of jobs. In addition, the concept of converting employment by area unit to total jobs is made more difficult by the fact that, in the main, the information provided relates only to the scale of the proposed development but contains nothing regarding its nature.

The employment data provided at a site specific level will therefore be utilised to inform the team of any major potential influences in the development of future strategies rather than be fed directly into the disaggregation process.

In addition, an approach based on utilising the locally derived population data does not provide the best methodology for disaggregation to A453 Zone level in this particular case. This is due to the following drawbacks:

- The data contains significant disparities with the Study Adopted 2011 data; and
- In order to obtain sufficiently detailed information, the consultations have been targeted at those Local Authorities directly relating to the core study area;

Disparities in Data

Differences between the population forecasts based on the Local Authorities development site data and the study-adopted growth for the period from 2000 to 2011 are shown in Table 5. The Local Authorities population growth, at District level, was generally higher than Study Adopted population growth for this timeframe.

Derby City was the only District where the study adopted population growth was greater than that locally derived (NTEM=8986 and LA=575) a difference of 8411. This was explained by the fact that the local projection of new housing development was available only for one A453 model zone which was zone number 310 (Osmaston).

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The overall level of disparity means that it is not possible to rely on the locally derived data in terms of absolute figures. The preferred approach therefore has been to allocate the Study Adopted data to the A453 Zones on the basis of the proportions the local data implies.

Consultation Focus

In order to obtain a level of data that would be of sufficient detail to ensure its effective use in the modelling process, the consultations with the Local Authorities were focused on those boroughs/districts whose statutory area related directly to the core study area.

The consultations have resulted in a number of A453 Zones for which there are no figures could be attributed. Whilst this is not an entirely unexpected result of a site specific consultation process, it does mean that an alternative approach needs to be adopted to break down the Study Adopted data from NTEM Zone level to A453 Zone level. Clearly, there needs to be a 2011 figure in employment and population terms for every zone to allow the modelling process to be completed in a meaningful way

Preferred Approach

Taking into account the above factors a preferred approach has been adopted for the breakdown of Study Adopted data to A453 Zone level.

It seems clear that in order to achieve a break-down of the study adopted data to the A453 zone level a methodology of *apportionment* rather than *absolute* figures is necessary, particularly given the anomalies that exist with the local data. To this end, the following preferred approach has been developed, which would represent the best use of the data available.

In summary the approach being taken is as follows: -

1. Compare the NTEM/A453 Zone Distribution at 2000 & 2011

The team have taken the approach of comparing the distribution from NTEM zone level to A453 Zone level at 2000 and 2011. A comparison for the years 2000 and 2011 will highlight whether there are any individual differences in the distribution to A453 Zone level and whether there is a strong linear relationship between this distribution at 2000 and 2011 or not.

Steps a-d below have been designed to develop a distribution of the 2011 data to A453 Zone Level that takes account of the locally derived site specific information. This has then been compared with the equivalent 2000 distribution.

- a) Take the A453 Zone totals for the year 2000 as a % of the relevant NTEM Zone total.
- b) Where local data is available, achieve a figure for total population for each A453 Zone at 2011 by taking the year 2000 A453 Zone total and adding the locally derived growth figures. (These figures have taken account of potential changes in H/H size over the period between 2000 and 2011 as expressed in NTEM Tempo data).

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- c) This figure is then expressed as a % of the relevant 2011 NTEM Zone population total taken from the Study Adopted data for comparison with the equivalent 2000 distribution. (Clearly, these figures do not cover the entirety of the area as the data is site specific, as such the % totals as shown in table 6 do not total 100%).
- d) The A453 Zone population distributions at 2000 and 2011 as a % of the relevant total borough populations are then compared and any disparities highlighted.

2. Distribute the 2011 Study Adopted Data to A453 Zone Level

From the analysis carried out it appears that in the main the differences between the 2000 and 2011 distributions are insignificant and a strong linear correlation exists as expressed by the correlation coefficient (see table 6). Therefore, in disaggregating the Study Adopted Data for 2011 to A453 Zone level, the following steps have been taken:

- e) Where there is a difference between 2000 and 2011 distributions the Study Adopted Data has been apportioned to the A453 zones on the basis of the above 2011 locally derived distributions and adjustments made to the remaining distributions as appropriate. (An example of an NTEM - A453 zone adjusted distribution is shown at Table 7 of this report).
- f) On the basis of a good correlation between 2000 and 2011 distributions (see table 6), in those zones where local data is not available the Study Adopted Data has been apportioned on the basis of 2000 distribution.

This approach enables the study team to make adjustments relating to the core study area to reflect the latest local information. By ensuring that the locally derived data is included in the analysis, the team is confident that the most up to date opinions of officers at both County and District level have been reflected.

9 CONCLUSIONS AND RECOMMENDATIONS (STAGE 4)

Population

- Comparison of the Year 2011 population data with locally derived 2011 population data at NTEM zone level indicated a good linear relationship between the two sets of population forecasts. This has been illustrated in Table 1.
- Significant differences were prevalent for Gedling (12.5%), Nottingham (8.4%) and South Derbyshire (10.5%). The Study Team accepts the County Council's advice that their data is to be prevalent for these areas. Therefore, the NTEM population data has been utilised except for these areas. The new hybrid population data is the *Study Adopted* population data.

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- The Study Adopted data is at NTEM zone level. In order to break this down to A453 Zone level for use in the modelling process, the Study Team recommend the *preferred approach* described above as it represents the best utilisation of the available data.
- Therefore, following the consultations and analysis, the distribution of the Study Adopted Data to A453 Zones has been on the basis of the proportions arising from consultation process carried out with the Local Planning Authorities. Where this data is not available the distribution is on the basis of the year 2000 distribution.

Employment

- Locally derived employment development site information was provided by the relevant Local Authorities for the year 2011. This information was provided by area, i.e. “Hectares”, rather than number of jobs. Table 4 shows the projected development for the year 2011 allocated to A453 zones.
- HETA confirmed that there is no readily available factor to convert employment in area units “Hectare” to total numbers of jobs.
- What exacerbates the difficulty of converting employment by area unit to total jobs is that data is only available for scale of the proposed development but not regarding its nature. The nature of a development is an important factor in determining the total number of jobs generated by such a development. For example, the total number of jobs for an industrial development should differ to that for a warehouse.
- Therefore, given the close correlation between the 2000 base year and the 2011 test data as illustrated in Table 6, the study team recommend disaggregating from Year 2011 NTEM Zone Level to A453 Zone level on the basis of the base year 2000 employment distribution. The locally derived site-specific figures will be utilised to inform the team of specific developments likely to require close attentions in future strategies.