Aberdeen City Council and Aberdeenshire Council

Housing Market Area Review

Report by DTZ Consulting & Research
One Edinburgh Quay
133 Fountainbridge
Edinburgh EH3 9QG
0131 222 4500

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Reviewed by

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1. Purpose of the review

Introduction

1.1 Aberdeen City Council and Aberdeenshire Council have jointly commissioned DTZ Consulting & Research to undertake a review of its housing market areas. This draft final report sets out:

- the study brief
- methodology
- findings from the desk top analysis
- report on the stakeholder conference
- final conclusions and recommendations.

Study Brief

1.2 The brief requires the development of practical HMA boundaries for the areas of Aberdeen City and Aberdeenshire Councils, comparing them in terms of relevance with the two existing HMAs. There are currently two HMAs – the Aberdeen HMA (AHMA) and the Rural HMA (RHMA). These boundaries were set in the 1970s on the basis of travel to work data from the 1971 census. Recent evidence suggests that these areas would benefit from a review to establish whether they are still fit for purpose or whether more appropriate boundaries exist.

1.3 The preparation of a new strategic plan / strategic development plan and mid-term reviews of the two respective local housing strategies present an opportunity by which to implement the results of any review, which makes the current time appropriate to carry out such research.

Methodology

1.4 The method used for the review draws on both the methodology set out in Housing Market Areas in Scotland: definition and review, Communities Scotland, 2003, and the Housing Market Assessment Manual, Office of Deputy Prime Minister, 2004.

1.5 The definition of a housing market area is set out in the brief as:

This is a geographical area which is relatively self-contained in terms of reflecting people's choice of location for a new home i.e. a large percentage of people settling in an area will have sought a house only in that area' (NEST)

'A geographical area which is relatively self-contained in terms of housing demand; i.e. a large percentage of people moving home or settling in the area will have sought a dwelling only in that area. (SPP3 / PAN38)

1.6 These definitions can usefully be supplemented with the most recent published guidance on assessment of housing markets: Housing Market Assessment Manual, ODPM, 2004.

'Most people seeking to buy or rent a house will be willing to choose between houses within a fairly limited geographical area. These are areas within which people are willing to search for housing are determined by personal, social and economic networks e.g. proximity to family, friends and access to employment, education and other facilities. It is the overlapping of the search areas of substantial number of households which create local housing markets. (ODPM 2004)

Data

1.7 The three definitions set out above make it clear that the primary factor determining the extent of a housing market is the pattern of household movement behaviour. This can usefully be complemented by travel to work data. The key data sets for this assessment are Sasines and the Census 2001 for household movement, and Census 2001 for work place migration. To supplement these it is helpful to map house price data that has a bearing on market definition.

1.8 In Scotland, the data used for assessing household movement is the Land Registry / Sasines entries, provided to local authorities for this purpose by Communities Scotland. The dataset provides information on all house sale transactions across Scotland, and provides the address of the house purchased, the purchaser's origin address, the price of the sale, and type of sale (new build, second-hand, ex-right to buy). This enables detailed analysis of the household movement by location, and therefore assessment of the extent of the market area. For this study, analysis has been undertaken in the form of GIS mapping (from one datazone[1] to another) and tabular data analysis (from City to settlement, or settlement to settlement[2]). Therefore, by combining these two types of analyses, we gain a comprehensive picture of household movement behaviour, with mapping enabling differences between areas to be seen clearly.

Threshold application

1.9 The rationale of the methodology employed[3] is that there is a hierarchy of housing markets defined by distance from the main urban centre – (because as noted above access to these employment and service centres are the key factors in location choices made by households). Therefore, we are aiming to establish the main settlements' spheres of influence.

1.10 To determine whether one settlement is under the influence of another, we consider the proportion of sales to and from settlements, starting with the largest settlement and moving outwards from this main centre, continuing with this process for each settlement until the proportion of sales is negligible. If the proportion of purchasers so defined exceeds a pre-determined threshold (between 5 and 10% agreed for this study) then we conclude that the settlement is in the housing market area. This analysis is presented in tabular form, but is very usefully supplemented with the GIS mapping so that we can see the quantum of movements geographically, and combine the conclusions provided in this form with that of that data matrix.

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[1] All the addresses in sasines dataset relevant to the study area have been mapped to their relevant datazone. Datazones are areas defined by Scottish Executive with population thresholds of 500 - 1000 household residents. There are 267 datazones in Aberdeen City and 301 in Aberdeenshire.
[2] Settlement is defined by GRO where there is a population greater than 500.
[3] As described in Housing Market Areas in Scotland: definition and review, Communities Scotland, 2003

1.11 The conclusions of household movements are then supplemented with trends on patterns of work place migration, and house price average and change (which is indicator of market pressure i.e. where demand may be highest).

1.12 Following the process described above, a draft map with preliminary 'soft' boundary lines was produced. This 'soft' line approach recognises that functional housing markets do not operate to strict geographical lines or boundaries (as shown in the initial map, Appendix 6).

1.13 The initial map was then tested with stakeholders with experience in the local market. The experience of DTZ is that people's local knowledge is normally remarkably accurate, and is valuable information to be built on when reviewing market areas. A half day seminar was held in Aberdeen with those representing the planning, housing and housebuilder sectors present. A presentation on the initial review was provided, followed by two discussion groups to enable feedback on the findings.

1.14 Following consideration of stakeholder feedback, the final HMA map has been generated. The final housing market boundary is an actual hard line, rather than a soft line used in for the initial map, and follows datazone geography. The reason for adopting a hard line to the boundary is to reflect the requirements of strategic planning, rather than to reflect performance of the housing market in practice.

2. Desk Top Analysis

House sales matrix

2.1 The house sales matrix (Appendix 1) presents all house sales by sale location (columns), compared to the origin of the purchaser (rows).

2.2 The house sale locations were grouped into settlements, with those to be included in the detailed analysis agreed with the steering group. Those sales that occurred in locations not specifically identified in the matrix were categorised by:

- 'other settlements' – where the location falls into a defined settlement[4] but which has not been specifically identified in the matrix
- 'outwith settlements' – where the sale location falls outwith defined settlements.

2.3 For purchaser origin, the same list was used as for house sale location, with the addition of neighbouring or close local authorities – Angus, Moray, Highland, Perth& Kinross and Dundee City. Long distance in-migrants from elsewhere in Scotland, UK or the rest of the world were removed from the matrix – this refined the data to enable us to see key local and regional trends which are the most relevant in defining housing markets. There is also an 'error' category which includes all those entries where, due to missing or erroneous information in a data field, the purchaser origin could not be identified. The errors have not been removed as this would have distorted the total figure under analysis.

2.4 The matrix shows that there has been a total of 67,412 house sales within the Aberdeen City and Aberdeenshire areas over the last five years (2001 to 2005 inclusive) excluding long distance in-migrants (of which there were 22,162). It has been possible to analyse 80% of the 67,412 sales, with the remaining 20% or 13,940 containing erroneous purchaser origin information[5].

2.5 Key findings are as follows:

Sales volumes

- Aberdeen City is by far the dominant location of household movement with 33,466 sales, 50% of all sales in the whole Aberdeen and Aberdeenshire area
- After the City, highest sale volumes tend to follow settlements with highest population: Peterhead, Stonehaven, Inverurie, Fraserburgh, Westhill, Ellon, Portlethan (in descending order ranging from 2,148 to 1,027 sales, or 3% to 1% of total sales).
- Thereafter volumes of sales in each of the named settlements are less than 1% of the total volume of sales in the area, and there is a large proportion of sales in 'other settlements' (those smaller settlements not specifically identified in the matrix). This data reflects the scattered, rural nature of the area.

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[4] Settlements are defined by the GRO, and have populations over 500 population.
[5] Where it has not been possible to assign a datazone to the original data.

2.6 Relationships between settlements

- A high proportion of purchasers from Aberdeen City move within the City – 63%, demonstrating a relatively high level of self-containment.
- However, Aberdeen's sphere of influence extends beyond its own settlement boundaries. The strongest housing market relationships are defined where there is a relatively high proportion of purchasers in a settlement originating from Aberdeen City[6]. This is basis of defining the 'core' Aberdeen housing market - Table 1 below shows settlements in order of significance of movement from Aberdeen, these are:

Table 1 – Sale / purchaser origin analysis (Aberdeen origin)

Settlement	% sales where purchaser origin is Aberdeen
Potterton	28%
Blackburn	25%
Newmachar	17%
Kintore	16%
Westhill	13%
Portlethen	12%
Drumoak	9%
Oldmeldrum	8%
Cruden Bay	7%
Banchory	6%
Inverurie	6%
Ellon	6%
Alford	6%
Insch*	5%
Laurencekirk*	5%
Stonehaven*	4%
Inverbervie*	4%
* Unclear whether in Aberdeen core market as on margins of 5% threshold – further evidence required from GIS mapping and stakeholder consultation.	

- Apart from Aberdeen, only a few settlements show evidence of self-containment (where purchasers move within the same settlement). These are: Fraserburgh (68%); Peterhead (65%); and, Stonehaven (54%). The level of self-containment in other settlements range from as low as 13% (Inverurie) to 45% (Laurencekirk) – see Table 2 below.

[6] A threshold of 5-10% of all purchasers in each settlement has been applied

Table 2 – Sale / purchaser origin analysis (self-containment)

Settlement	% sales where sale location same as origin
Aberdeen core market	
Stonehaven*	54%
Laurencekirk*	45%
Alford	41%
Portlethen	40%
Inverbervie*	39%
Banchory	36%
Insch*	35%
Cruden Bay	33%
Ellon	32%
Newmacher	32%
Kintore	22%
Blackburn	20%
Drumoak	18%
Westhill	17%
Oldmeldrum	16%
Potterton	14%
Inverurie	13%
Outwith Aberdeen core market	
Fraserburgh	68%
Peterhead	65%
Macduff	31%
Banff	30%
Huntly	32%
Aboyne	13%
Turriff	0%
Mintlaw	0%
* Unclear whether in Aberdeen core market as on margins of 5% threshold – further evidence required from GIS mapping and stakeholder consutlation.	

2.8 The converse to self-containment is where there is strong market inter-relationships between settlements. There is clear evidence of inter-settlement relationships, particularly between some of those settlements already assessed to be within the Aberdeen core market: Inverurie, Stonehaven, Westhill, Portlethen, Newmacher and Potterton.

2.9 The inter-relationships in the rural areas are less clear due to the relatively high volume of movement from/to un-named 'other settlements' or 'outwith settlements'. This limitation has been mitigated through the GIS mapping (described in the next section).

2.10 However, the data does tell us that a significant proportion of purchasers in rural areas[7] have moved from Aberdeen, but also that a similar proportion of households moving to Aberdeen are from rural areas[8]. However, even though the proportion of movements by settlement category may appear similar, it should be noted that the volume of out-migration from Aberdeen to rural areas[9] is approximately two fifths of the volume of in-migration to Aberdeen from rural areas (1275 compared to 2987 sales).

2.11 In housing markets such as Aberdeen / Aberdeenshire where there is one dominant urban centre with a surrounding rural hinterland, the smaller settlements and rural locations will often have a stronger relationship to their main or rural service centres rather than Aberdeen itself, although these local centres may in turn be part of the Aberdeen housing market (according to the analysis in Table 1 above). Table 3 below shows that a significant proportion of purchasers originate from rural areas[10].

Table 3 – Sale / purchaser origin analysis (rural origins)

Settlement	% sales where purchaser origin is rural
Aberdeen core market	
Inverurie	55%
Oldmeldrum	47%
Banchory	43%
Drumolk	38%
Ellon	36%
Westhill	27%
Kintore	25%
Insch*	24%
Potterton	13%
Blackburn	14%
Alford	19%

[7] 8% and 7% of all purchasers moving to 'other settlements' or 'outwith settlements' respectively are from Aberdeen
[8] 7% of households from 'outwith settlements' and 2% are from 'other settlements'
[9] Defined as 'other settlements' or 'outwith settlements'
[10] Defined as 'other settlements' or 'outwith settlements'

Cruden Bay	16%
Laurencekirk*	15%
Inverbervie*	12%
Newmacher	9%
Portlethan	9%
Stonehaven*	8%
Aberdeen	7%
Outwith Aberdeen core market	
Turriff	78%
Mintlaw	74%
Aboyne	52%
Huntly	40%
Macduff	33%
Banff	32%
Peterhead	12%
Fraserburgh	11%
* Unclear whether in Aberdeen core market as on margins of 5% threshold – further evidence required from GIS mapping and stakeholder consultation.	

2.12 The evidence provided through the data analysis has been supplemented through GIS mapping of migration and household movement using Census 2001, and Sasines datasets for the last five years 2001-2005 inclusive.

GIS mapping

2.13 This element of the review has involved GIS mapping and interpretation of migration and household movement datasets, supplemented with examination of other market activity indicators, specifically house price averages and change. The following section provides a list of the maps produced and the associated interpretation of the mapping exercise.

Household movement (Appendix 2a, 2b and 2c)

2.14 Maps have been generated using sasines data on house sales, collated for the last five years activity 2001-2005. Movements are represented by arrows pointing from one datazone to another, with each arrow representing multiples of 5 (Appendix 2a), 10 (Appendix 2b) or 15 moves (Appendix 2c). The arrow colour change from blue to red depicts the increase in volume of movements. In all the migration maps (in Appendices 2 and 3), long migration is evident, but in line with the data matrix analysis, this has not been factored into assessment of the local housing market.

2.15 The mapping confirms evidence provided in the data analysis i.e. that by far the greatest volume of sales are in the Aberdeen City area, but with significant movement between Aberdeen and the following areas

- to the north as far as Ellon (and a lesser extent to Cruden Bay)

- north west to Inverurie
- west to Alford
- south west to Banchory (but with relatively weak movement to Aboyne)
- south to Portlethen and Stonehaven (and a lesser extent as far south as Laurencekirk and Inverbervie).

2.16 Within the Aberdeen core housing market there are clear inter-relationships between the main settlements. Outwith the main Aberdeen housing market activity, household movement is very clearly focused around individual towns and settlements, rather than there being strong inter-relationships between towns. The exception to this rule is in the north east where there is a market relationship between Peterhead and Mintlaw, and in the north between Banff, Macduff and Turriff.

Migration (Appendix 3a, 3b and 3c)

2.17 The Census 2001 usefully supplements more recent Sasine household movement data (as the Census shows migration across housing tenure, not just house sales). However there are limitations to the Census data – most importantly census migration data (household and workplace) is based on a 10% sample. Secondly it is only based on the 12 months previous to the census period and it is analysed on a ward basis[11] and so is less fine grained. Finally, it is now becoming outdated compared to the sasines data.

2.18 The Census migration data emphasises the core market movement as described in the analysis of Appendices 2 above, although with more marked movement to and from the south along the A90. It also confirms the very localised movement around main or rural service centres in areas outwith the core Aberdeen market.

Workplace migration (Appendix 4a, 4b and 4c)

2.19 The three workplace migration maps based on the Census 2001 data, confirm the trends of household movement around the core housing market area, although there are a few exceptions – more people travel to work between Aberdeen and Peterhead than they move house between Aberdeen and Peterhead, and also between Elgin and Aberdeen where no housing market relationship is evident. We can also see that in general terms, people are willing to travel longer distances than they are to move house. Trends in the rural areas again tend to replicate housing market movement i.e. localised movement around main or rural service centres.

House prices (Appendix 5a, 5b and 5c)

2.20 House price data provides further indicators of market activity. Where demand is greatest we would normally expect to see proportionally higher average prices and or price change until the demand / supply balance adjusts. Likewise, where demand is at its weakest prices and price change will be lower.

2.21 Over the last five years average house prices have consistently been highest along the A93 North Deeside Road to Banchory and increasingly Aboyne, but also to the west and north west of the City along the A96 to Inverurie and

[11] There are 43 wards in Aberdeen City and 68 in Aberdeenshire – a total of 111, compared to a total of 568 datazones

A944 to Westhill and Alford. Highest percentage house price increases have been patchy, but areas of note are between Alford and Inverurie, with the most significant area of house price increase being along the north coast around Banff and Macduff and down the A947 to Turriff.

Initial Housing Market Map

2.22 Following completion of the work described above, DTZ produced an initial housing market map for discussion with stakeholders (Appendix 6). The map also shows the Aberdeen City and Aberdeenshire local authority boundaries, and the current Aberdeen HMA boundary for comparison purposes. At this point of the review, DTZ suggested that the core Aberdeen housing market stretched north to Cruden Bay, moving south east to Ellon, just north of Inverurie in line with the current boundary, and then east to include Alford, south east to Bachory and then further south to Laurencekirk and Inverbervie on the south coast. At this stage, DTZ's conclusion on the remaining areas in Aberdeenshire was that there is a series of very local rural sub markets functioning around towns.

3. Stakeholder conference findings

3.1 The initial conclusions reached by DTZ were then tested with stakeholders through a seminar held in Aberdeen.

Both Councils invited stakeholders representing the housebuilder and development industry active in the North East, local authorities planning and housing, information and research departments and Communities Scotland. A total of 29 people attended the seminar (see attendance list at Appendix 7). These included representatives from

- Aberdeen City and Aberdeenshire Councils planning, housing and information/research staff
- Communities Scotland
- A range of house builders and housing developers active in the North East.

The research findings as described above were presented covering: the objectives and methodology of the study; summary of the data analysis; presentation and description of the GIS mapping and the explanation of the initial draft market map.

Two discussion groups were then held to explore the issues comprising a mix of stakeholders. The questions posed to stakeholders through the groups were:

- What is you experience and interest in the housing market?
- What are the market trends over the last five years (highest/lowest demand areas)?
- What is your perception of the extent of the 'core' Aberdeen market?
- What is your view on the initial market map?
- What happens in the rural areas (how do the rural areas relate to Aberdeen and how do towns relate to each other in rural areas)?

3.2 Before stakeholders addressed the specific questions, there were general discussions in both groups about the relevance of housing market areas, and the availability of land. There appeared to be consensus amongst house builders / developers that the HMA boundary bore little relevance for them, rather the critical issue was the release of land for house building and the policies applied in different areas. There was a very strong view held amongst housebuilders and developers (shared by some of the other stakeholders) that the low supply of land in Aberdeen City and adjacent areas has constrained house moves, has contributed to increase in house prices in the City, and increased demand for housing in rural areas.

3.3 In terms of the perceptions over the highest demand areas these were listed as: Aberdeen City; Inverurie; Kintore; Peterculter; Westhill; Banchory; Drumoak; Oldmedrum and Stonehaven. This part of the discussion lead again to voicing of strong feelings over the high demand in Aberdeen, but lack of land supply. In addition, both groups of stakeholders suggested demand is growing in rural areas and the extent to which this is caused by the perceived land constraint in Aberdeen City was also debated. Some of the housebuilders and developers stated that there is market demand along all the main transport corridors – there was a mix of views that this related to land release along these routes, but also to accessibility. Some developers apply a 30 minutes travelling time to Aberdeen criteria when considering land opportunities. Others suggested the market is moving as far as 30 miles out of Aberdeen. Some stated that lower demand settlements included Alford and Aboyne, although this was refuted by others.

3.4 The stakeholders perceptions over the extent of the Aberdeen core market was then discussed. There was concensus from the two groups that the market includes most of those settlements proposed in the initial DTZ map. The debate is summarised as follows:

- There was debate as to whether the market actually stretched as far north as Cruden Bay. Some suggested that Cruden Bay was more aligned to Peterhead while others felt that improvements to the A975 would likely result in more affinity to the Aberdeen market.
- There was some debate in one of the groups over the inclusion of area north of Ellon and west of Cruden Bay – some felt that these were too far from Aberdeen for inclusion while a minority of developers/housebuilders expressed an appetite to build in these rural areas.
- It was agreed that Peterhead and Fraserburgh was probably stand alone markets and had more interaction in employment terms with Aberdeen than they have in housing market terms.
- The north coast was agreed not be part of the Aberdeen market, although the significant house price growth encountered in the area was familiar to some - a few people felt this was associated with immigration from the Accession states.
- There was also discussion over whether the market extended as far south as Laurencekirk. Some argued that this area was a useful location for those households with two or more workers – one travelling north to Aberdeen area, and one south to Dundee. However, none of the stakeholders suggested the market went further south than Laurencekirk.
- Stonehaven was agreed to be most definitely part of the Aberdeen market, but a lack of new land allocations was stated to be constraining development in that area and was also said to explain the low level of household movement activity in Stonehaven as show in the migration analysis.
- In terms of the extent of the core market to the west, there was consensus that Alford should be included in the core area, albeit it has a lower volume of activity, but that Aboyne was not. The reason not to include Aboyne was around the distance and perceived 'busy' road resulting in relatively long travelling time to Aberdeen.
- Many felt that the market was gradually pushing out north-west to Insch from Inverurie, due to the good rail links along this route, with a 35 minute rail commute from Insch to Aberdeen.

3.5 Discussions regarding the rural areas outwith the core market broadly confirmed the DTZ conclusion, i.e. that there is very localised activity. However there was concern that the rural area should not be considered as one rural housing market with all the associated planning policies and land allocations covering the whole area. It was argued, for example, that

Fraserburgh is clearly not part of the same market as Laurencekirk and so some effort should be made to distinguish different rural sub markets.

3.6 In moving to the final HMA boundary definitions, DTZ has taken the following points on board from the stakeholder conference:

- Greatest demand is in Aberdeen City and its immediate area as indicated in the indicative map.
- There is demand in the rural areas, and in general, the perception is that this is stretching north, south and west.

Further checking of the migration analysis is required to determine the extent of the market to:

- Cruden Bay (and south west of Cruden Bay, and north west of Ellon)
- Insch
- Alford
- Aboyne
- Laurencekirk

In addition, the final review will refine DTZ's initial conclusion on the separate rural markets, as confirmed by stakeholders, i.e. there is not a single homogeneous rural market outwith the core Aberdeen market.

4. Final Proposed Housing Market Areas

4.1 Drawing the desktop analysis and stakeholder consultation evidence together DTZ have proposed the final housing market map (Appendix 8). In arriving at these conclusions DTZ must also take into consideration future strategic planning and economic development policies as these may serve to cement or curtail the recent market activity, and thus extent of the market. The key activities / intentions relevant to this review focus on transport[12]:

- Strategic roads capacity improvement tackling constraints on A90 Ellon to Peterhead, A96 west of Inverurie, access to Aberdeen from the south and at other junctions serving Aberdeenshire towns.
- Aberdeen Crossrail commuter rail link (frequent services between Inverurie - Aberdeen - Stonehaven, with new stations in the City and Shire)
- Re-opening of the Laurencekirk rail station (planned for opening winter 2007/8)
- Aberdeen Western Peripheral Route (planned to open in 2011)

DTZ is of the opinion that all these intentions will serve to cement the household movement behaviour evidenced over the last five years, and are very unlikely to curtail /discourage these movement patterns.

<u>Final Housing Market Map</u>

4.2 The proposed Aberdeen core market stretches north to Cruden Bay, then moves south to Ellon, west to Insch and Alford, south west to Banchory and then south to Laurencekirk and Inverbervie.

4.3 This is confirmed by self-containment assessment i.e. how many households that have purchased a house in the core market also originate from the core market. The assessment is that between 75-93% of purchasers originate from the core market area. This conclusion is based on the following:

- Over the last five years there has been a total of 52,511 sales in the core market area. Consistent with the methodology adopted for this study (as described in section 2), the long-distance migrants have been removed from the analysis.
- Of these we have identified:
  1) the purchaser origin was within the core market for 39,443 sales
  2) the purchaser origin was within the rural areas elsewhere in Aberdeenshire for 1,624 sales
  3) the purchaser origin was the neighbouring local authorities for 1,876 sales
  4) the purchaser origin for the remaining 9,568 sales cannot be identified due to errors in the original data. The origin of these purchasers may or may not be the core market.
- Based on this data, we have calculated self-containment to be between 75% (excluding errors), and 93% (including errors), i.e. assuming all the errors originate from the core market.

[12] Regional Transport Strategy 2021 Consultation Draft, Nestrans, December 2006

4.4 In the rural areas, the DTZ assessment is that there are a **series of individual** sub-markets functioning around some key towns – thus the area has been defined as loosely 'Rural Housing Markets'. There are few market inter-relationships between the towns. The exceptions are between: Peterhead and Mintlaw; and Macduff and Banff; for which sub market areas have been defined. Otherwise the main housing market activity is tightly orientated around Fraserburgh, Huntly, Aboyne, Tarland and Ballater.

4.5 The final proposal includes the current HMA boundary. Comparison with the current boundary shows:

- a slightly tighter boundary just south of Banchory which reflects the change in geography to datazones. The alternative would be to include two very large datazones south of Banchory and west of Laurencekirk – DTZ's opinion is that there is insufficient evidence to support this large extension.
- there is an extension of the boundary south to Laurencekirk and Inverbervie – this is supported by the data analysis (meeting the threshold criteria at 5%), GIS mapping, stakeholder conference and policy review, as discussed above.
- there is an extension of the boundary north to Cruden Bay as evidenced through the data analysis (meeting the threshold criteria at 7%), GIS mapping, the opinion of some of the stakeholders and policy review.
- there is an extension of the boundary to Alford and Insch as evidenced through the data analysis (meeting the threshold criteria at 6% and 5% respectively), GIS mapping, stakeholder conference and policy review.

4.6 A final boundary line has been drawn along the datazone geography most closely associated with the household movement identified. However, as noted at the beginning of this report, in practice, no functional housing market boundaries follow lines drawn on a map, and so the limitations of this approach should be mitigated through policy response, and regular HMA reviews in line with the five year Structure Plan / Strategic Plan review periods.