



Scottish Government
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Housing Need and Demand Assessment (HNDA)

HNDA Tool Instructions (2018)

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What's New and Refreshed in 2018

- All three HNDA guides been refreshed based on the latest available data, feedback from HNDA practitioners and universal themes and issues that have arisen over the past several years during the HNDA appraisal process. However, the fundamental approach and process remains largely the same.
- The Scottish Government (SG) is currently progressing a Planning Bill which is expected to have completed the parliamentary processes by the end of 2018 with a view to receiving Royal Assent by 2019. This will be followed by revised National Planning Framework 4, Scottish Planning Policy and revised Local Housing Strategy guidance. It is envisaged that any changes will be known and reflected in the HNDA guidance and Tool during 2019.
- It is not anticipated that the Planning Bill will impact on the requirement for HNDA or the role that it serves in supporting Local Housing Strategies and Development Plans. Where the Planning Review suggests ways in which existing HNDAs could be amended or strengthened, these will be investigated where the CHMA consider them to be feasible for data providers. It is envisaged that any changes stemming from the Planning Review will be known and reflected in the HNDA guidance and Tool, as appropriate, during 2019. Local authorities wishing to undertake an HNDA should continue to follow this guidance and to operate in terms of 'business as usual'.
- Key guidance changes include:
 - as part of the 'robust and credible' appraisal authorities will be required to consult with external stakeholders and report on their findings.
- Key HNDA Tool changes include:
 - HaTAP is no longer the core measure of existing housing need. This is now HaTOC homeless household, those in temporary accommodation and households that are both concealed *and* overcrowded (HaTOC).
 - New data inputted for household projections, existing need (as above), house prices, rent prices and incomes (with the latter using the new SG income dataset).

- > All scenarios have been updated based on the last economic outlook. The scenarios have been reduced in number and have different names.
- > The proportion of households who are assumed to be able to afford a property has been increased based on evidence of greater access to mortgage finance since the Tool was set up.
- > For simplification, fewer results sheets.

Comparability with previous HNDAs

- With the exception of existing need, most aspects of the methodology used in the HNDA Tool do not differ fundamentally from the approach set out in the previous HNDA guidance. Any differences in the Tool results are due to a this and the more recent data sources. The CHMA is investigating the provision of a Tool Dashboard that compares Tool data inputs past and present and Tool housing estimates past and present to help authorities understand similarities and differences. The issue of comparability should, however, be signposted in the HNDA write-up.

1. PREPARATION

Aim

- These instructions explain how to prepare for, set-up and run the HNDA Tool. This includes a step-by-step guide and an explanation of the choices and scenarios available. It explains how to interpret results and how to input local data and scenarios if required. If users have any questions please email the [CHMA Mailbox](#).

I.T. Issues

- The Tool is an Excel spreadsheet with additional code. It was created in Excel 2016.
- If using the Tool on a laptop the clarity of the image may be enhanced by zooming in or zooming out using the buttons at the right hand corner of the screen. It is a lot easier to navigate the Tool with a mouse plugged into the laptop rather than using the laptop's touchpad.

Preparatory Reading and Analysis

- Before using the Tool, the user should be familiar with the [HNDA Manager's Guide](#) and [HNDA Practitioner's Guides](#), in particular Chapter 4 about how to estimate housing need and demand.
- It is also advisable to complete Chapter 2 of the HNDA before running the Tool. This will evidence the key factors driving the local housing market, a thorough understanding of which is essential before running the Tool.

Scenarios, Alternative Futures & Sensitivity Testing

- Future house prices, rents and incomes are difficult to predict long-term and with precision. However, HNDAs must project housing estimates into the future to enable medium and long term planning of housing. The Tool does this, in part, by projecting house prices, rent prices and incomes to make an assessment of the future affordability of different housing tenures.
- The Tool is populated with a range of scenarios about future incomes, house and rental prices (alternative futures). However, it is for HNDA Practitioners to decide which scenario or scenarios best reflect what might happen in their local area in future. It is worth bearing in mind that a good predictor of the future is what happened in the past. Analysing what happened to incomes, house prices and rental prices in the past is a good way to anticipate what may happen to them in future and, in turn, to help decide on future affordability scenarios. An affordability time series is provided in the Datapack which will help with this.
- With this in mind, **the Tool is designed to produce a range of BROAD housing estimates** about several alternative futures; any of which might occur but one or two of which are more likely to occur based on previous housing market trends and local knowledge of housing markets.
- The user's choice of scenarios **should NOT attempt to predict future housing estimates with complete precision**. Instead, it should be based on producing a range of broad housing estimates. This gives the user a range of housing estimates that can be accepted or rejected as the future of the housing market unfolds. A single housing estimate that is too precise cannot provide enough flexibility to plan for a future which will always contain some uncertainty.
- Users should keep the number of scenarios to a minimum as a further way to help constrain the level of resource required to produce the

HNDA. No more than six scenarios are recommended (the [key findings template](#) reflects this) and no less than three:

(1) a baseline scenario <most likely in future>
e.g. house prices remain flat

(2) a low scenario <less likely in future>
e.g. house prices decline

(3) a high scenario < less likely in future>
e.g. house prices increase

- It may also be advisable to adjust only one or two factors between scenarios. If too many factors are changed at once it may be difficult to understand and explain how this is affecting differences in the results across scenarios.
- The concept of **sensitivity testing** is also a useful concept in terms of thinking about what scenarios to use. In the above example the high and low scenarios can be used to test how sensitive the baseline scenario is to changes in house price.
- The Tool will be run several times using several scenarios. Each time the Tool is run - and the user is happy with the results - a copy **must be saved**. Otherwise results will be lost. A copy of the Tool for each final scenario should be submitted to the CHMA as part of the robust and credible appraisal submission process.
- The user can input their own income, house and rent price scenarios into the Tool. The practicalities of doing this are set out [further on](#). The decision to do this should be determined by what resources are available to produce the HNDA and whether the use of local scenarios would add sufficient value to the estimates to justify additional resource; whilst always bearing in mind that HNDAs are designed to produce a broad housing estimates; not precision estimates.

Default (core) settings in the Tool

- In order for an Excel model of this kind to function, and be tested, it was necessary to populate it with default (core) settings. This allows the users to see how their housing estimates would change when they change these settings according to local circumstances.
- The default settings were chosen to reflect, as far as is possible, the prevailing state of the Scottish housing market and economy when the Tool was refreshed in 2018. Each default setting is explained within this document.

Data used to populate the Tool

- The Tool is populated with nationally available datasets. A list of data sources is set out at [Annex A](#). Users may overwrite national data with local data and the method for doing this is set out within this document. It should be borne in mind that using national datasets is sufficient for robust and credible status, will speed up HNDA production and will help to constrain the level of resource required.
- Any decision to use local datasets should be weighed against whether their use adds sufficient value to justify the resources required to source, clean and input local data into the Tool; bearing in mind that HNDAs are meant to provide broad range of housing estimates rather than precise estimates.
- If this choice is made it must also be justified in the HNDA write-up. The Tool will be updated once a year, at the end of the year, to include any new national data and also any HMA boundary revisions provided by authorities to the SG CHMA.

Issues of geography

- The Tool outputs at three main geographies; Strategic Development Plan Authorities, Unitary Local Authorities and functional Housing Market Areas (HMAs) within each of these. A small number of authorities requested sub-HMA level output areas and these have also been included in the Tool. National Park areas are also available.
- Some of the data used to run the Tool are built-up from [datazones](#) to create larger geographies i.e. HMA level outputs, then LA level outputs etc. However, the smallest geography for which National Records of Scotland (NRS) household projections are available is at SDPA and LA level and a method had to be found to disaggregate these to HMA level.
- This was done using NRS's household estimates which are available at datazone-level. Firstly, the number of households in each HMA was built-up from datazones. Secondly, the relative proportion of households in each HMA across an LA or SDPA was worked out. Thirdly, these relative proportions were then applied to the household projections (at LA-level) to estimate household projections at HMA-level.

Benefits of using the Tool

- **Quick scenario testing** - It allows HNDA Practitioners to test and compare different scenarios and see the results of this in real time. This is useful when Housing Market Partnerships meet to discuss and agree scenarios; as it can be done 'live' at a meeting.
- **Frees up thinking time** - Time saved sourcing, cleaning and computing data can be spent thinking about which scenarios are best to use and what the results may mean for housing policy and planning.
- **Consistent results** - As data sources are consistent within and between areas and authorities, it means that estimates can be compared consistently, for example, with neighbouring authorities or the HMAs within an authority.
- **Less costly** - Where previously, some authorities, may have contracted out their HNDAs at considerable cost this is no longer required. This should mean substantial cost savings.
- **Understanding and skills** - The Tool allows all authorities to produce HNDAs in-house rather than contracting out. This means that authorities are likely to acquire a deeper understanding of their HNDA results and the skills for HNDA production will remain with authority staff.

Comparability with previous HNDAs

- With the exception of existing need, most aspects of the methodology used in the HNDA Tool do not differ fundamentally from the approach set out in the previous HNDA guidance. Any differences in the Tool results are due to a this and the more recent data sources. The CHMA is investigating the provision of a Tool Dashboard that compares Tool data inputs past and present and Tool housing estimates past and present to help authorities understand similarities and differences. The issue of comparability should, however, be signposted in the HNDA write-up.

The next section explains how users set up the Tool

2. SETTING UP THE TOOL

Finding and Opening the Tool

- The HNDA Tool is accessed from the CHMA's website via the [HNDA Refresh page](#). On this page:
 - > [click](#) the '**HNDA Tool**' link.
 - > [click](#) on the '**open**' link or '**open in new window**' to start the Tool. It takes a few moments.

Starting the Tool

- The Tool contains macros which perform calculations. If prompted:
 - > [click](#) '**enable macros**' or '**enable contents**'. This activates the macros.
 - > **The Tool allows users to enter various data and scenarios. This should only be done at those places indicated. Changes made elsewhere in the spreadsheet can break macros and, in turn, break the Tool.**
- The Tool homepage will now appear. To start working:
 - > [click](#) '**Go to map worksheet**'. This brings up the '**Area selection screen**' which shows a map of Scotland and a drop-down menu.
 - > then, [optionally](#), '**Go to schematic worksheet**' which will take users to a set of diagrams illustrating how the Tool fits together to produce the outputs.
- The drop-down menu includes every local authority in Scotland, then the four Strategic Development Plan Areas and then the National Parks.
 - > [select](#) the **area** of Scotland that the user wishes to work with. Note, selection of an area automatically includes any sub-areas that were provided by authorities.
 - > [select](#) the starting **year**. The default year is 2018. If users want a later year type this in.
 - > [click](#) '**Set Areas**' and wait. After a few seconds, a Microsoft window will appear advising that the '**HNDA Tool is now set up**'. [Click](#) '**ok**'.

What can Now be Seen on Screen

Different Coloured Worksheet Tabs

- The **light green-tabbed** worksheets indicate where the user can change scenarios, input local data or input local scenarios. The **'scenario all'** sheet is for the whole area and the **'S1, S2, etc.'** sheets are for each sub-area.
- The **red-tabbed** worksheets show the results for all areas. There are several results sheets and these are explained [further on](#).
- The **dark green-tabbed** worksheets contain the data that are pre-programmed into the Tool and which power the Tool calculations.

Buttons at the Top of the Screen

- Users can use the arrows  to scroll back and forth through the sub-areas.
- There are two buttons at the top right of the screen:
 - > by clicking **'show summary'** a graph of the housing estimates is displayed (both the core and user scenarios) and users can see how these change as different scenarios are chosen at each stage of the Tool
 - > by clicking the **'hide summary'** button these results graphs get hidden.
 - > the **green graph** shows results based on the core (default) setting pre-programmed into the Tool. The **orange graph** shows the user's results based on the scenarios/ choices they have made in the Tool.

Core (default) and user scenarios

- As users choose scenarios at each stage of the Tool, those scenarios are charted. Each chart shows two sets of trends:
 - Green data lines** represent the core (default) scenarios pre-programmed into the Tool. These do not change. **Orange data lines** show the scenarios selected by the user. These change as the user makes changes.
- If the core and user scenarios are the same, the data lines appear on top of each other. This is how the Tool appears when opened. When the user chooses different scenarios these data lines diverge. Details of the all scenario default (core) settings are set out [further on](#).

Graph Features

- By placing the cursor over the data line it will display the value of that data point.
- By clicking on the data line, right clicking the mouse and choosing '**source data**' this will take the user to the data which are generating this chart. **Take care not to change the source data as this could break the Tool.**
- Some of the chart axes have very big scales because the numbers being charted are big. This can sometimes mean that it is difficult to see the chart changing when a different scenario is selected. However, if the user hovers the cursor over the graph they will be able to see the value of a data point changing.

Users are Nearly Ready to Start Running Scenarios

- [Section 3](#) provides a step-by-step guide to choosing and running different demographic and economic scenarios. It is important to note that there are two options when doing this:

1) Choose scenarios and apply them to all sub-areas areas, in which case users will only be working on the '**Scenario All**' sheet.

OR

2) Users can vary scenarios for one or more of the sub-areas, for example where affordability differs across a local authority. In which case users will be working with not only the '**Scenario All**' sheet but the individual sheets ie. '**S1, S2 etc.**'

In this instance, first choose the scenarios for the whole area using the '**Scenario All**' sheet. Then go to the sub-area(s) in question and alter the scenario for that area(s).

The next section is a step-by-step guide to running the Tool

3. STEP-BY-STEP TOOL GUIDE

STAGE 1: Future Need for Additional Housing Units – Demography Choices

DEMOGRAPHY CHOICES

1. Use the Official NRS Household Projections (2016-based)

The CHMA recommends using NRS's household projections. These data should be considered sufficient to produce a range of broad estimates of future housing. There are 3 variants as set out below to allow for the best local fit and full details of the projections can be found on the [NRS website](#). They include:

- **Principal**
- **High Migration**
- **Low Migration**

Default (core) setting = principal household projection

The new projections will now be constrained to the Scottish Government's big surveys annually. This will help to maintain the accuracy of the projections in the years following the Census in a way not previously possible. Increasing the validity of the projections in this way means that fewer variants are required to account for degrees of uncertainty in the principal projection.

1(a) Create and Use Own Household Projections

This is very resource intensive. The CHMA do not recommend this approach. If a decision is made to do this, it must be based on robust evidence, the data must be added to the Tool and the methodology used should be written-up in the HNDA. It is strongly recommended that any methodology is checked with NRS.

1(b) Adjust NRS's Household Projections

Any adjustment must be based on robust evidence and written-up in the HNDA. Users can adjust the household projections up or down and for one or multiple years.

STEP 1

> If using NRS's projections, select which one from the drop-down menu.

STEP 1(a)

> If using own projections. Tick the box entitled '**use own projections**'. A drop-down table will appear. Enter the data here (number of projected households each year). This will need to be changed to reflect that you need to change the base data to get the HMAs to update.

STEP 1(b)

> If, however, only adjusting NRS's projections, select which projection to adjust from the drop-down menu.

> In the yellow boxes enter a % increase or decrease for any or all years.

STAGE 2: Existing Need for Additional Housing Units

EXISTING NEED CHOICES

2. Use the Proxy Built into the Tool

This is a count of homeless households in temporary accommodation and households who are both overcrowded *and* concealed (**HoTOC**). Additional housing units would need to be found for these households. Using this is acceptable as part of the robust and credible appraisal.

Default setting:
= HoTOC switched on
= affordability filter switched off i.e. all need goes to social rent

The affordability filter settings are explained at Section 5.2.

2(a) Use Own Estimates of Existing Need

Estimate the existing need for additional housing units outwith the Tool. This should exclude any existing need that can be dealt with using an in-situ or housing management solution. It is suggested that this would as a minimum include the elements included in HoTOC. Whatever methodology is used, this should be included in the HNDA write-up.

Default setting:

= zero need entered

= affordability filter switched on i.e. need split across all four tenures

The affordability filter settings are explained at Section 5.2.

2(b) Decide how many years to clear existing need

The default is set at 5 years reflecting the position in a number of previous HNDAs. This may be changed by the user to take account of local decisions about how long it may take to clear existing need.

Default (core) setting = 5 years

STEP 2

> If using the proxy for existing need, tick the box called '**Use HoTOC method**'. The HoTOC figure will then appear. All need will be assigned to social rented housing.

STEP 2(a)

> If using own estimates of existing need, type the calculated estimate into the box called '**Existing need**'.

> Un-tick the '**HoTOC**' box.

> If using the affordability filter, tick the box called '**Use Affordability Model**'. This will apportion some existing to social rent but also to the other tenures choices; buy, rent privately, below market rent. If the affordability filter is un-ticked all need is apportioned to social rent.

STEP 2(b)

> Type in the number of years for clearing existing need into the box called '**Existing (Cleared) Years**'.

At this point;

- **the Tool has estimated the total number of household who will require additional housing of some kind in future**
- **this includes new households that will form in future and certain types of existing households in need.**

In the next stage;

- **the Tool will estimate how many of these household can afford to purchase in the market and how many cannot (who will need rented property of some kind).**

STAGE 3: Affordability Income Growth and Distribution

INCOME GROWTH & DISTRIBUTION CHOICES

3. Decide which income data source to use

The [Scottish Government Small Area Income Estimates](#) are based on a number of surveys and the Census. They were produced on behalf of the Scottish Government by Heriot-Watt University and the David Simmonds consultancy. The methodology used to produce the estimates is available at the above link.

Default (core) setting =
[Scottish Government Small Area Income Estimates \(2014\)](#)

3(a) Decide how average (median) income might grow over the projection period (e.g. 2018-2038)

The Tool is pre-programmed with three scenarios that are designed to offer the users a range of income growth scenarios for average (median) household income, as follows:

- **Modest real terms growth (core/default):** Household income growth is 3.5 per cent per annum in nominal terms, which is 1.5 percentage points greater than the Bank of England's CPI inflation rate target of 2 per cent per annum, and implies that in real terms income is growing at around 1.5 per cent per annum, i.e. the purchasing power of the median household is increasing over time. In the decade prior to the recession, annual productivity growth, which is a key contributor to long-run income growth, averaged around 2% in Scotland. Since the recession, productivity growth has been below 1%, and in its May 2018 forecasts the Scottish Fiscal Commission projected that productivity will only gradually recover to above 1% by 2023-24. This scenario assumes that productivity is slightly above the Scottish Fiscal Commission projection over their forecast horizon (which is shorter than the period of the HNDA projections), but below the pre-crisis trend. Given the risk that productivity may continue to stagnate, the next two scenarios therefore look at lower income growth rates.

- **No real terms growth – Inflation target:** Nominal median household income grows at the same rate as the Bank of England’s CPI inflation rate target, which is 2 per cent, which means that the purchasing power of the average household remains constant.
- **Below real terms growth:** There is very little growth in income. Nominal median household income grows at 0.5 per cent per annum, which is 1.5 percentage points below the Bank of England’s CPI inflation target. This implies that the average household is worse off in real terms, i.e. the purchasing power of their income is falling.

The above scenarios were devised using trends at the Scotland level. Users should select those scenarios which best reflect what might happen to incomes in the local area in future years. This could include developing their own income growth scenario(s). Details of how to input scenarios are described further on. Additional income scenarios should be evidence-based and written-up in the HNDA.

3(b) Decide how the shape of the income distribution may change over the projection period (e.g. 2018-2038)

The Tool is pre-programmed with three scenarios to reflect, for a given growth rate in average (median) household income, different household income distributions. The scenarios are defined in terms of how household income at the 10th and 90th percentiles grow relative to median household income (the 50th percentile), where the median household income growth rate has been chosen as discussed in Section 3(a) above. The Tool then automatically calculates growth rates at intermediate percentiles using a pro rata adjustment.

- **Greater equality:** The incomes of the least affluent (the 10th percentile of the income distribution) increase much more steeply compared to the incomes of least affluent (the 90th percentile of the income distribution).
- **No change (core/default):** The incomes of the least affluent (represented by the 10th percentile of the income distribution) and the most affluent (represented by the 90th percentile of the income distribution) increase at the same rate as median household income. The gap in the income distribution between the most and least affluent will not change over time.
- **Greater inequality:** The incomes of the most affluent (the 90th percentile of the income distribution) increase more steadily

compared to the incomes of least affluent (the 10th percentile of the income distribution).

For the above scenarios, the percentage point difference between income growth at the 10th and 90th percentiles compared to median household income growth is shown in the Tool on the worksheet called '**income scenarios**'.

Users may include their own income distribution scenario(s). Details of how to input scenarios are described further on. Additional income distribution scenarios should be evidence-based and written-up in the HNDA.

3(c) Decide which part of the income distribution is of interest.

The Tool is set up to analyse affordability (incomes divided by house prices and rent prices) at the 25th percentile of income, house prices and rental prices.

The 25th percentile has been chosen because, historically, this is seen to represent where First-Time-Buyers enter this housing market, where housing need and demand is most critical.

However, the Tool also allows users to examine another point in the income distribution if that is of interest. For example, the Tool is also set up to show what is happening to incomes at the 75th percentile of the distribution i.e. the more affluent end.

Users can change either of these by typing other percentiles into the boxes provided.

Default (core) setting:
= 25th percentile of the income distribution
= 75th percentile of income distribution

STEP 3

> Use the '**Income data source**' box to select which income source to use.

STEP 3(a)

> Use the '**Growth in income scenario**' box to select which income growth scenario to run.

> If using own scenario, the data should be inputted on the worksheet called '**IncomeScenarios**'. The place where data should be inputted by users is highlighted in orange. When this is done, the new income growth scenario will then appear in the drop-down menu.

STEP 3(b)

> Decide which parts of the income distribution are of interest. The **core (default)** is set at the 25th and 75th percentile.

> If interested in different percentiles, type these directly into the boxes in the section called '**select part of the income distribution**'.

STEP 3(c)

> Use the drop-down menu to decide which scenario about the shape of the income distribution might be relevant to the local area in future.

> If using own scenario(s), the data should be inputted on the worksheet called '**IncomeScenarios**'. The place where data should be inputted is highlighted in orange. When the data have been entered, this scenario will now appear in the drop-down menu when returning to the 'Scenario All' worksheet.

STAGE 4: Affordability House Prices

HOUSE PRICE CHOICES

4. Decide how house prices may grow over the projection period (i.e 2018-2038)

The Tool is pre-programmed with five house price scenarios that are designed to offer users a range of options. Users should select the scenario(s) which best reflects what might happen to average house prices in the local area in future years. The choice of scenarios includes:

- **Strong growth:** Nominal house price growth is 6 per cent per annum, which is 4 percentage points above the Bank of England's target. This scenario would reflect experience in the three decades from 1977 to the housing market peak in 2007, over which real terms growth averaged around 4 per cent.
- **Modest growth (core/default):** Nominal house price growth is 4 per cent per annum, which is 2 percentage points above the Bank of England's inflation target.
- **Weak growth (no real terms growth):** Nominal house price growth is 2 per cent per annum, in line with the Bank of England's inflation target. This is approximately in line with the Scottish Fiscal Commission forecasts as at May 2018, over the period which coincides with their forecast horizon (to 2023-24).
- **Flat growth (real terms decline):** Average house prices are unchanged in nominal terms, which means that in real terms they will gradually decline if inflation is in line with the Bank of England's target. This scenario would reflect experience in the decade following the credit crunch, with nominal house prices approximately unchanged on a cumulative basis, although this was made up of a period of decline and then recovery.
- **Scottish Fiscal Commission December 2017 Forecast:** This scenario applies the Scottish Fiscal Commission's 5-year house price forecast until 2022, using its December 2017 house price forecast.

Please note that from 2022, this scenario assumes that house price growth is equal to that of the last year of the forecast (2022) which is 2.0% (the same rate applied in the weak house price growth scenario).

The year-on-year changes in average house prices for each scenario are shown in the HNDA Tool on the worksheet called '**PriceScenarios**'.

Users may include their own house price growth scenario(s). Details of how to input scenarios are described further on. Additional scenarios should be evidence-based and written-up in the HNDA.

4(a) Set affordability criteria to decide a cut-off point for who can afford to buy in the market and who cannot (and will need to rent)

The default setting in the Tool assumes that a household is suitable for home ownership provided that they could afford to purchase a house at the lower quartile (25th percentile) of the house price distribution. The test for affordability is that the house price is no more than 3.6 times the household's income. This is equivalent to the household taking out a mortgage which has a loan to value of 85% and a mortgage to income ratio of 3.1, which are both taken from UK Finance data on average mortgage lending to first-time buyers in Scotland in 2017.

The default (core) = 25th percentile house price; 3.6x lower quartile income

All households whose income is above the threshold which allows them to afford a lower quartile house price are considered to be suitable for home ownership.

Users can adjust these affordability criteria by typing new values into the '**Percentile**' and '**Income Ratio**' boxes. This needs to be evidence-based and written-up in HNDA.

Users may set their own affordability criteria. Details of how to input these are described below. These should be evidence-based and written-up in the HNDA.

STEP 4

> Using the '**Future house price scenarios**' box select a future housing price scenario using the drop-down menu.

> If using own scenario data should be inputted on the worksheet called '**PriceScenarios**'. The place where data should be inputted is highlighted in

orange. When the data have been entered, this scenario will now appear in the drop-down menu when returning to the 'Scenario All' worksheet.

STEP 4(a)

- > Select an affordability criteria (what income multiple would be required to purchase a lower quartile house) using either the default or own criteria.
- > If using own, type the house price threshold in the '**percentile**' box and type the income multiple in the '**income ratio**' box. The latter should also take into account the size of deposit and size of mortgage. Some worked examples of this is set out below:

At this point:

- **the Tool has estimated the number of household who will require some form of additional housing units in future**
- **split this between those who can afford to purchase in the market and those who cannot.**

In the next and final stage:

- **The Tool will estimate of those who can afford to purchase, how many will actually go on to do so, and**
- **of the remainder how many can afford private rent, below market rent or social rent.**

STAGE 5: Affordability Rental Prices

RENTAL CHOICES

5. Decide of those who can afford to purchase in the market, what proportion will actually go on to do so.

The default in the Tool is set at 60%. This assumes, of those who can afford mortgage repayments, only 60% also have the deposit to actually go on to buy. Users can increase or decrease this percentage, if they have evidence otherwise. The default has been increased from 50% in the previous version of the Tool, to reflect the fact that there has been a gradual recovery in higher loan to value mortgage lending. This means that the deposit barrier is not as acute as it was immediately after the financial crisis.

The effect of increasing this percentage would be to increase the amount of housing need that would be met via owner occupation and reduce the amount that be met by the rental sector (PRS, below market rent and social rent). Lowering the 60% threshold would have the reverse effect.

The default (core) = Of those who can afford to purchase, 60% have enough deposit to go on to do so

5(a) Set two affordability thresholds to split the remainder of the need into three rental sectors.

The 1st threshold determines those who can afford to rent in the private sector.

The 2nd threshold determines those can afford below market rent.

The remainder of the need (who cannot afford the private rent or below market rent) gets apportioned to those who

can afford social rent. This falls out of the above calculation and does not require another threshold.

The Tool examines rent affordability by looking at income level in relations to both median and 30th percentile market and social rents. Those with incomes nearer the 30th percentile are more likely to need social rents and those nearer the median to afford private rents, with intermediate rent somewhere in between. Whilst below market rent does refer to the need for some form of subsidized private rent, it may also be viewed as an potential indicator of demand for alternative shared equity products that are used to support home ownership. As such, the HNDA results may suggest that Authorities should potentially consider further analysis on this.

The [default thresholds in the Tool](#) are set as follows:

- > If a household would spend [less than 25%](#) of their income on private rent the Tool assumes they can afford to rent in the private sector. This threshold has been used historically as the threshold for PRS affordability.
- > If a household would spend [between 25% to 35%¹](#) of their income on private rent the Tool assumes they are suitable for below market rent.
- > If a household would spend more than [35%](#) of their income (including housing benefit) on an private rent the Tool assumes they are suitable for social rent.

Users may choose to vary these two parameters. For example, if the two parameters were moved closer to each other, this would reduce the amount of need apportioned to below market rent, and in doing so, increase need apportioned to the PRS and increase need apportioned to social rent.

5(b) Decide how rental prices are likely to change over the course of the projection period e.g. 2012-2032

The Tool is pre-programmed with four future rental price scenarios that are designed to offer the users a range of options. The scenarios are identical to the house price scenarios set out above, with the assumption that over the long run rental prices are likely to track trends in house prices.

Users should select those scenarios which best reflect what might happen to rental prices in the local area in future years. The scenarios are:

¹ The definition of below market rent is determined by how narrow or wide these thresholds are set by the users to reflect what might be appropriate for local circumstances. However, whatever this is, below market rent is always rent which is subsidised, in some way, below private rent but above social rent levels.

- **Strong growth:** Nominal rental price growth is 6 per cent per annum, which is 4 percentage points above the Bank of England's target.
- **Modest growth (core/default):** Nominal rental price growth is 4 per cent per annum, which is 2 percentage points above the Bank of England's inflation target.
- **Weak growth (no real terms growth):** Nominal rental price growth is 2 per cent per annum, in line with the Bank of England's inflation target.
- **Flat growth (real terms decline):** Average rental prices are unchanged in nominal terms, which means that in real terms they will gradually decline if inflation is in line with the Bank of England's target.

The year-on-year changes in rent prices for each scenario are shown in the HNDA Tool on the worksheet called '**PriceScenarios**'.

Users may input own rent scenarios. Details of how to input these are described below. Use of own rent scenarios should be evidence-based and written-up in the HNDA.

STEP 5

- > Decide of those who could afford to buy in the market i.e. have sufficient income to secure a mortgage, what proportion have enough deposit to actually go on to buy.
- > If NOT using the default, enter a percentage into the box called '**Proportion of Market who Buy**'.

STEP 5(a)

- > If NOT using the default, set the income threshold for ability to afford to rent in the private sector – use the box called '**Upper i-rent income limit**'
- > If NOT using the default, set the income threshold for those who can afford below market rent (and above which people could afford social rent) – use the box called '**Lower i-rent income limit**'

STEP 5(b)

> Using the '**Rent Growth Assumption**' box, select a future rental price scenario using the drop-down menu.

> If using own scenario, the data should be inputted into the worksheet called '**PriceScenario**'. The place where data should be inputted is highlighted in orange. When the data have been entered, this scenario will then appear in the drop-down menu when returning to the 'Scenario All' worksheet.

- **The Tool has now finished running.**
- **It has generated an estimate of the additional housing units required in future to meet housing need and this has split total need into those who can afford:**
 - > **owner occupation**
 - > **private rent**
 - > **below market rent**
 - > **social rent**
- **These estimates are based on an analysis future household formation, existing housing need, future incomes, future house prices and future rental prices.**

The next section explains how to find and interpret results

4. RESULTS: Where to find results and how to interpret them

Finding and interpreting results

The Tool results are displayed in several ways depending on what users need. This includes:

- estimates for each year in the projection

- estimates for banded years within the projection
- cumulative totals at the end of the projection
- estimates for the default (core) scenarios
- estimates for the user scenarios
- total estimates for a whole area
- estimates for sub-areas.

Worksheet called 'Results'

- shows annual(ised) estimates for additional housing units for **groups of years** within the projection period.
- The **default** is set at 5 yearly intervals e.g. 2018-2023, 2024-2029 etc. but these intervals can be changed using the drop-down box at the top left of the screen (to 4, 5, 6, or 7 year intervals).
- Estimates represent the value for **each year in that time interval**. To get a total value for all five years, multiply by 5.
- Results displayed by banded years are useful because planners and policy makers often need to work in periods of time rather than single years. This is the case for LHS and Development Plans.
- The **green-shaded values** show the default (core) results and the **orange-shaded values** show the user's results.
- Results for the whole area are shown at the top of the page and results for each sub-area are shown below this.
- Totals are shown for each tenure.
- For each area three sets of results are displayed:
 - 1) 'Top Level'** = total for the whole area e.g. Local Authority, SDPA, National Park
 - 2) 'Summed'** = total based on the sum of individual sub-areas (HMAs and sub-HMAs). This will only differ from (1) if the user has made any changes to the sub-areas e.g. the user has entered different affordability for the sub-areas that are different from the area as a whole
 - 3) Constrained** = if no changes were made to the sub-areas then the constrained totals will be the same as (2) and (1).

If changes were made to the sub-areas, the sub-areas (and differences between them) are constrained to the total for the whole areas (1).

This ensures that the sum of the sub-areas is the same as the total for the whole area, whilst at the same time ensuring that the results reflect the differences between the sub-areas.

Practitioners are recommended to use the constrained estimates to avoid confusion i.e. to avoid the sub-areas having a different total than the area as a whole.

Worksheet called 'RawResultsScenario'

- Shows results for the *user scenarios* for every year, every tenure and every sub-area. These are the most detailed results. These are the most detailed results and haven't been summarised in any way.

Data Used to Populate the Tool

ANNEX A

Demography	Description
Indicator	Household Projections (including variants)
Source	National Records for Scotland
Date	2016-based projections to 2035

HaTOC	Description
Indicator	Homeless households and household that are both concealed <i>and</i> overcrowded
Sources	Scottish Government Communities Analytical Services Division based on the following datasets: HL1 Dataset and Scottish House Condition Survey (SHCS) AND National Records of Scotland Census
Date	Homeless households 2017 Concealed <i>and</i> overcrowded households, SHCS (2013 to 2015) and 2011 Census

Income Data	Description
Indicator	Scottish Government Small Area Income Estimates
Source	Heriot-Watt University and the David Simmonds Consultancy
Date	2014

House Price	Description
Indicator	Average House Price
Source	Registers of Scotland (RoS)
Date	2017-18

Private Market Rents	Description
Indicator	Average Private Market Rents for 2 Bed Property
Source	Scottish Government Rent Registration Service (RSS)
Date	2016/17