Scotland's Census 2022

Outputs Consultation

Contents

1.   Introduction

Responses to this consultation will help us shape how census outputs are packaged and delivered. The best way to respond to this consultation is online here.

1.1   Scotland's Census

National Records of Scotland (NRS) is responsible for conducting the census in Scotland.

Scotland has relied for more than 200 years on the information the census provides. It remains the best way to gather vital information which government, councils, the NHS and a range of users in the public, private and third sectors need. The results support the planning and delivery of a wide range of public services which improve the lives of those living and working in Scotland.

Scotland's Census is a complex programme which, in common with other modern censuses, consists of many elements. It brings together high quality census returns, a coverage survey, peer reviewed statistical techniques, and the use of high quality administrative data to support the work we do to understand more about the households who did not respond, and our broader quality assurance work. Almost 90% of households made a census return, with 90% of those completing their census return online.

We recently published the paper Securing high quality census outputs and population estimates, this is an update on how NRS is bringing together the information from Scotland's Census Collect 2022, the Census Coverage Survey 2022 and administrative data within its statistical estimation methodology to secure high quality Census outputs and population estimates which represent 100% of Scotland's population. In doing this we continue to work closely with the International Steering Group, successfully implementing their advice, including that set out in their paper to one of Scotland's Parliamentary Committees on the importance of the role that administrative data must now play in the delivery of high quality Census outputs.

1.2   Why we are consulting

We have a number of key objectives for Scotland's Census 2022 which include:

- to produce high quality results

- to generate outputs that meet the needs of users

- to produce timely outputs to maximise benefits

As we have developed our plans for Census we have engaged with a wide range of stakeholders to understand user needs and seek feedback on our

plans. This consultation is part of this approach and seeks views on the data we intend to publish and the tools we will use to do this.

We ran a Topic consultation between 8 October 2015 and 15 January 2016 to ask census users what topics they thought should be included in the next census.

Our topic consultation report details what we learned.

Stakeholders helped to shape the questions asked in Scotland's Census. We consulted with groups all over Scotland to develop and test questions to ensure they were acceptable to the public and that they collected the data required by data users.

The questions asked in Scotland's Census 2022 were agreed by the Scottish Parliament during their scrutiny of the census legislation. You can find a link to the question set on our website.

1.3   What we are asking

This consultation covers a number of aspects of our plans for publishing census data. We are asking users to give us their views on: -

- the order and sequencing of topics published

- the tools we use to publish data

- the geographical levels that data are published at

- how changes to census questions impact users' planned work/research

- what users need from the new census questions

1.4   Responding to the consultation

The best way to respond to this consultation is online.

You can provide a response to any or all topics. However, please answer all of the questions for each of the topics that you choose to respond to.

This will help us fully understand your requirements. For example, there are different consultation questions for new topics which have not previously been included in Scotland's Census.

If you wish to respond to this consultation via email or on paper, please complete a consultation questionnaire and send to one of the following:

email: OutputsConsultation@nrscotland.gov.uk

post: Scotland's Census 2022 Outputs Consultation
               Ladywell House
               Ladywell Road
               Edinburgh
               EH12 7TF

1.5 How we use your data

We collect information from respondents to help us better understand who our data users are and what their user needs are. We ask respondents for their name, email address, how they use census data and some details on their organisation if they are responding in a professional capacity.

We may publish responses to support transparency in our decision making process. We may attribute responses to respondents and/or include data supplied by respondents where permission has been given to do so. We never publish email or postal addresses.

Please also be aware that information provided within a consultation response could be made publicly available if requested under a Freedom of Information request.

Email addresses are used to send an acknowledgement of response following submission. They may also be used to contact you in the future in relation to the consultation exercise if you give consent to be contacted.

For more information about how National Records of Scotland collects and processes your personal information please see the [privacy notice on the Scotland's Census website](#).

2. Output products

We aim to start publishing results from the census approximately a year after the end of the data collection phases. From there, we intend to release all of the main results within two years. These outputs include a wide range of products that users can interact with to obtain data to suit their needs.

This section of the consultation will cover the tools we will use and the approach we will take to publishing census data.

2.1 Flexible Table Builder

The new innovation for 2022 outputs is the Flexible Table Builder. This will be the primary dissemination tool for census outputs and will allow users to create their own tables. Users will have the option to create their own tables by selecting a population base and adding the variables of interest to the table or amend the pre-defined tables by adding or removing variables. When a user creates a table, Statistical Disclosure Control will be applied automatically to ensure that results can be published safely.

Users will have the option to register for a free account. To do this users will have to provide an email address and their name. We will not charge for this service.

User accounts will allow users to access more features and more detailed Census outputs. When a user signs up for an account they will be able to:

- Save the tables they build, which can be accessed at any time

- Save combinations of geographies, for example users will be able to select multiple data zones and create a grouping. This can then be reused when signed in to the account.

- Create more detailed tables. This includes being able to add more variables to a table than guest account.

Due to Statistical Disclosure Control it might be necessary to restrict access to smaller geographies and/or detailed variables to users with a registered account. This means a user with an account could have access to the most detailed classification for some variables such as Country of Birth where guest users will have access to less detailed classifications. We will only do this if necessary after applying our Statistical Disclosure Control checks and this will not impact pre-defined tables.

We are also planning to produce user guides which will be accessible within the tool.

2.2 Statistical Disclosure Control

All outputs will be subject to Statistical Disclosure Control. This is the name given to the range of methods we use to ensure that individuals or households cannot be identified through Census outputs.

Our Statistical Disclosure Control Methodology includes the following methods.

Record swapping

We will swap a small number of households with other demographically similar households in nearby areas. All households have a chance to be swapped. Those containing individuals with rare characteristics are much more likely to be selected for swapping.

Swaps are made between similar households to minimise the impact on data quality.

Record swapping was used as a Statistical Disclosure Control method for Scotland's Census 2011.

For more information on record swapping, please see our Household Record Swapping Methodology paper.

Cell Key Perturbation

An innovation for Scotland's Census 2022 will be the availability of a flexible table builder tool. This will allow users to create their own tables from census data.

Due to the flexibility of the table builder tool, it is necessary to apply an extra layer of disclosure control in order to add to the protection of data published in tables. The method we apply is called cell key perturbation.

When a user creates a table, small adjustments will be made automatically to cells in the table. Cell Key Perturbation changes the value of some table cells by a small, bounded amount (this will not result in negative numbers). Not all cells will be perturbed.

The perturbation is applied in a reproducible, consistent way: the same table created by different users will be perturbed in exactly the same way. The same perturbation method is applied at all levels of geography.

Marginals (row/column/table totals) will be calculated prior to perturbation (i.e. the sum of the unperturbed values), and will then be perturbed in the same way as the interior cells. In this way the published values will be consistent across tables, and will be more accurate than calculating the sum of the perturbed interior cells.

For example, the total for the "male" and "female" columns in any table will always be the same, given the same population base, and will always be within some small, bounded amount of the unperturbed value.

For more information on cell key perturbation, please see our Cell Key Perturbation paper.

2.3   Release Schedule

We will release the 2022 outputs in phases. The release schedule has been prepared taking account of user needs and our plans for processing data.

- In the first phase we will publish population estimates by age and sex. This phase includes two releases and aims to publish age and sex down to output area, the smallest geography level we will publish data at.

- In the second phase we will publish univariate topic data down to output area. This will give users access to the full set of topics available from the census. This data will be available through the Flexible Table Builder but cross-tabulations between topic variables will be restricted. Users will be able to create bespoke groupings of geographies for use with this data, for example by grouping together a selection of Output Areas of interest.

- In the third phase we will publish multivariate data. This will include tables with the variables cross tabulated and restrictions on the Flexible Table Builder will be lifted allowing users to create their own cross tabulations.

- The fourth phase of our release schedule will include publishing our microdata and origin-destination tables.

- The final phase will see us publish workplace and daytime tables.

As we publish data in each phase we will provide commentary and analysis alongside the data to explain results. We will also publish supporting metadata alongside each release.

As in the Scotland's Census 2011 General Report, we also plan to publish data on the collection exercise, for example response rates at Scotland and Local Authority level.

The planned release schedule is displayed in Figure 1. This shows the approach to publishing Census 2022 outputs. Exact dates will be dependent on a number of factors including processing, quality assurance and statistical disclosure control, exact dates will be announced closer to the time of release.

Phase 1 Population and Household estimates	Summary rounded population table by age, sex and Local Authority. Statistical bulletin, accompanying data visualisation on the website and Quality Assurance reports. Metadata will be added to the website for new variables.
	Unrounded estimates of usually resident population of Scotland by single year of age and sex published down to Output Area. Unrounded estimates of the number of households in each Local Authority, by size of households published down to Output Area. Unrounded estimates of the usually resident population of Scotland and each Local Authority on Census day, by whether living in a household or communal establishment. Statistical bulletin, accompanying data visualisation on the website. Metadata will be added to the website for new variables.
Phase 2 Univariate topics	Phased release of unrounded population statistics by a range of topics for all geographies down to Output Area. These variables will also be released in the Flexible Table Builder, though restrictions will be in place to restrict cross tabulations between variables. Topics: Demography and migration Ethnic group, national identity, language & religion Sexual orientation and trans status or history Health, disability and unpaid care Housing Labour market and travel to work Education Veterans Topic analysis published and "At a glance" summary statistics added to the website, all content on the website will have accompanying data visualisation. Area overviews section of the website updated with 2022 data. Metadata will be added to the website for new variables.
Phase 3 Crosstabs	Predefined tables by topic, age and sex for unchanged/largely unchanged questions for all standard geographies down to output area. Restrictions lifted so that these variables can now be cross tabulated in Flexible Table Builder. Topic analysis published and "At a glance" summary statistics updated.
	Final predefined outputs for new questions by topic, age and sex for all standard geographies down to output area. Field exclusions lifted so that these variables can now be cross tabulated in Flexible Table Builder. Topic Analysis published and "At a glance" summary statistics updated. Work will start on Analytical repots which will be published when complete. These reports will continue to be published beyond standard Census releases.
Phase 4	Microdata and Origin destination data.
Phase 5	Workplace and daytime.

Figure 1: Release schedule

2.4 Phase 1 – Population and Household estimates

First Outputs

We aim to start publishing results from the census approximately a year after the collection phase of the census concluded. These results will be rounded population estimates by age and sex down to Local Authority level. This release will be accompanied by quality assurance report to explain how the figures were produced. This report will be updated later on in the release schedule as we publish more detailed Census data.

Alongside the data we will add commentary and visualisations to the website to highlight key results and changes from the previous Census.

Unrounded Population Estimates

During this initial phase we are also planning to publish unrounded population counts down to Output Area for the following:

- Usual resident population by single year of age and sex
- Number of households by size
- Usual resident population of Scotland by whether living in a household or communal establishment

We will also add new commentary and data visualisations to the website to highlight key results and changes for the data published in this release.

2.5 Phase 2 – Univariate data

Topic summaries

The next phase in our release schedule will focus on the staggered release of different topic data as univariate tables. This means we will publish tables which include data from one variable, for example age or ethnic group. The data published through this phase will be comparable against the 2011 Quick Statistics (QS) tables.

Our aim is to publish these tables at the most detailed level possible and for all geographies down to Output Area (OA). We are planning to make these tables available through the Flexible Table Builder. While users won't be able to create their own tables using more than one topic variable, they will be able to use the features to create and save bespoke geographies.

The following topics will be covered during this phase:

- Demography and migration
- Ethnic group, national identity, language and religion
- Sexual orientation and trans status or history
- Health, disability and unpaid care

- Housing

- Labour market and travel to work

- Education

- Veterans

The population base for tables published in this phase will be the usually resident population of Scotland.

The order of topics published will be determined following user feedback from this consultation and considerations around time taken to process and quality assure the data prior to publication.

Area Overviews

During this phase we will update the area overviews section of the website so users can access higher level variable breakdowns. This will allow users to easily compare against other areas or previous censuses where appropriate.

For each release in this phase we will also publish commentary alongside data visualisation that will draw out they key points from the results.

We have produced a spreadsheet which lists the proposed outputs for 2022. Please use this to review our plans when responding to the consultation.

2.6   Phase 3 – Multivariate data

In this phase we will start to publish tables which will combine variables released in the previous phase. We will also remove restrictions in the Flexible Table Builder meaning that users will be able to create their own multivariate tables. Allowing users to further explore and understand the census results. All data published during this phase will be based on the usual resident population of Scotland on Census day.

Pre-defined tables

In 2011 we published two sets of multivariate tables: the Detailed Characteristics (DC) and Local Characteristics (LC). This allowed us to publish more detailed tables for larger geographies while also providing these cross tabulations down to the smallest geographies by creating less detailed classifications.

For 2022 we will introduce the Flexible Table Builder meaning that users will be able to create their own tables. This will reduce the need for as many standard tables as 2011, though we have agreed to produce standard tables similar to the DC and LC tables from 2011 where we identify a user need. However, we will keep the commissioned table requests open to review any user needs for census data that is not met by the Flexible Table Builder.

We have included a spreadsheet which includes details of the [proposed outputs for 2022](#).

For these pre-defined tables we will aim to publish down to Output Area where possible. If we identify a user need for more detailed variable classifications we may have to restrict the geographies the tables are available for.

Variable classifications

We will aim to publish the most detailed variable classifications where possible. However, we will need to balance user's needs for data at the smallest levels of geographies. This may mean that it is not always possible to publish the most detailed classifications due to Statistical Disclosure Control concerns, where this is the case we will used less detailed versions of the variables.

Where it is necessary to use the less detailed versions we aim to maintain comparability across censuses and we will use similar groupings to those used in the 2011 Census.

These proposed classifications are included in the spreadsheet below.

Many of the 'pre-defined' tables we are proposing will be similar to the tables published in the 2011 Census. Though we will be publishing new tables based on the new questions and existing questions where user need was identified since the standard outputs were published in 2011.

[Census Outputs Consultation - Content spreadsheet](#)

Age variable

In order to maintain comparability against the 2011 outputs, a number of different age classifications will be made available through the Flexible Table Builder. The different age classifications will be linked to topics (for example Labour Market).

The proposed age classifications are included in the variable classification spreadsheet above.

2.7 Phase 4 – Microdata and Origin Destination data

Microdata

Microdata are small samples of anonymised records for whole households and individuals, which include some associated census characteristics.

Microdata products enable researchers to look at combinations of characteristics that are not generally available from the standard census tables, and to perform different types of analyses not possible from standard tabulations.

To make microdata files as accessible as possible we plan to publish a range of microdata files in different ways: public, safeguarded and secure.

This is the same approach we used for the 2011 Census microdata products.

The proposed microdata samples and details on how they will be accessed are available below.

Public Microdata file

Anyone will be able to download and use the public microdata file under the Open Government Licence.

The public microdata sample will be a teaching file, containing records for a random anonymous sample of 1% of Scotland's population. The teaching file contains less detail than other microdata files. Information is mostly presented at a high level.

Safeguarded Microdata samples

We're still considering the most appropriate means of making the safeguarded data available, but the UK Data Service is likely to hold them. Safeguarded microdata files will include:

- Regional individual safeguarded Microdata sample: The geography for this file will be Scotland. The lower level of detail in the geography for this file allows for a higher level of detail in the variables.

- Grouped Local Authority individual safeguarded Microdata sample - This sample will contain a higher level of geographic detail than the regional sample and thus provides a little less detail in the variables.

- Safeguarded household file - This is a new microdata planned for the 2022 Census. This sample will be made available at grouped Local Authority level and will contain a similar level of detail to the safeguarded individual Microdata sample.

Secure Microdata

These samples will contain the highest level of detail and will only be available to approved researchers. The files will be anonymous and will not overlap.

We are planning to produce two files with samples of 10% of Scotland's population.

Secure microdata files include:

- The Individual file: person-level data and the lowest level of geography will be Council Area. Records include people resident in households and communal establishments

- The Household file, including person and household level data. This will include a 10 per cent of all households and includes individual

person-level records for each person living within those households. Where households contained no enumerated persons, records in the sample include only household-level data. This household file will allow linkage between individuals in the same family and the same household. Council Area will be the lowest level of geography available.

Origin Destination Statistics

Origin destination statistics describe the movement/flow of people; either as migration (from their address one year prior to the census) or travel to work or study (from their current address to their workplace address or place of study).

Flow tables show basic flows between areas, univariate tables cross-tabulate flows with one other variable, and multivariate tables cross tabulate flows with more than one variable.

Similar to the 2011 Origin-destination data we are planning to publish three different categories of data for 2022

- Special Migration Statistics (SMS) – showing migration patterns (both internal and international) of those who lived at a different address one year before Census Day (20 March 2022).

- Special Workplace Statistics (SWS) – showing commuting flows between usual residence and place of work or study for people aged 16 and over in employment or education in the week before the census.

- Special Student Statistics (SSS) – showing flows of people who lived at a different term time/boarding school address one year before the census.

Similar to the 2011 Census we are proposing that origin-destination tables are classified in three ways:

- Public tables – available to everyone under Open Government License

- Safeguarded tables – these contain slightly more detail that is not available to the public and can be accessed by data analysts under terms and conditions

- Secure tables – tables with greater detail are accessible only to those in the ONS Secure Research Service

England, Wales and Northern Ireland held their census in March 2021 and Scotland will hold its census in March 2022. This makes it unlikely that data can be combined to produce a single reliable set of UK origin destination outputs.

2.8   Phase 5 – Workplace and daytime data

The main population base for standard statistical outputs from Scotland's Census will be the usually resident population. However, the information collected in the census on travel to work/study also enables statistics to be produced for two alternative population bases: workplace population and daytime population.

Workplace

The workplace population outputs that we will produce are estimates of the population working in an area. We plan to publish tables including usual residents aged 16 to 74 whose main place of work is in the area. People who work mainly at or from home, or who do not have a fixed place of work, will be included in the area of their usual residence.

Daytime

The daytime population is an estimate of the population of an area during the working day. It includes everybody who works or studies in the area, wherever they usually live, and all respondents who live in the area but do not work or study. People who work or study mainly at or from home, or who do not have a fixed place of work or study, will be included in the area containing their home address. The daytime population will include shift and night workers such as hospital staff and security guards.

2.9   Analytical Reports

After publishing the Census topic data through tables we will start to work on producing analytical reports for a number of topics. These reports will enable us to give further insight in to the data from the 2022 Census and they help to provide evidence for policymakers across Scotland and the UK.

These reports are important outputs as they allow us to provide more detail on topics where the data is potentially disclosive for standard tables.

We will produce analytical reports on a variety of topics where we identify a strong user need through this consultation and other stakeholder engagement.

So far we have identified the following topics for analytical reports:

- Inhabited Islands
- Gaelic
- Sexual Orientation
- Trans status or history
- Analysis of Census Equality data

- UK Armed Forces Veterans

Visit our website to view the [reports produced in 2011](#).

2.10 Proposals for new variables

We're investigating creating new derived variables by combining existing data, from multiple questions, to meet our user's needs.

Proposals are at an early stage of development and we aim to further understand user needs through this consultation. There is no guarantee that it will be possible to produce these variables, but we are keen to understand user needs better before we investigate them more fully. However, the release of these variables would be dependent on the results being robust and passing Statistical Disclosure Control checks.

Examples of variables we are investigating are:

- Adult students

- Not in employment, education or training (NEET)

- Key or critical worker

2.11 Additional data needs

We are also looking for feedback from users on any additional data needs that have not been covered in this report or the attachments. Please respond to the survey if there are any unmet needs with details on what these needs are and how the data will be used.

3. New questions for the 2022 Census

3.1 Question development

National Records of Scotland completed a range of research and testing to make sure Scotland's Census 2022 asked the right questions. Part of this work involved changing questions from the 2011 Census and adding new questions. These changes helped to ensure that the Census can better meet the needs of users.

When developing questions we talked to people and organisations across Scotland to help us decide what topics to cover and what questions to ask.

In developing questions, we considered:

- how acceptable questions are to the public

- how to ask questions in a way that produces reliable answers

- whether other ways of collecting the information already exist

You can visit the website to find more detail on [question development](#).

Stakeholders were given an opportunity to contribute through a topic consultation we ran between October 2015 and January 2016. We asked census users what topics they thought should be included in the next census.

The [topic Consultation document](#) is available on the Scotland's Census website, along with a [summary of the findings from this topic consultation](#).

3.2 Outputs for new questions

We asked a number of new questions in the Scotland's Census 2022. This section of the consultation lists these questions and includes some details on our proposed outputs. This new data will help provide users with new data on various topics, expand the evidence base on the topics they cover and support policy development.

As we anticipate a lot of user interest in these new questions we are proposing a set of pre-defined tables be produced as part of our plans for outputs. Details of the tables proposed are detailed in the accompanying spreadsheet.

Please note that all proposals for outputs in this section will be subject to Statistical Disclosure Control. These proposals are included [in this spreadsheet](#) to help inform user feedback.

3.3 Trans Status or History

The trans status or history question is a voluntary question asked to people aged 16 and over.

Figure 2: 2022 Census – Trans status or history question

This question was added to the census as there is currently no data on the size and location of the trans population in Scotland.

Privacy considerations:

The number of individuals with a trans status or history is likely to be very low, so providing detailed breakdowns of responses, or cross-tabulating with detailed variables, could provide too great a risk of disclosing information about individuals for a sensitive topic. In order to avoid this disclosure risk, we may need to publish data surrounding trans status or history at higher levels of classification. We present two levels of classification below.

Additionally, we may limit which variables it is possible to cross-tabulate this variable with, which may mean that we cannot include this variable in the flexible table builder, and outputs relating to this question will be published in stand-alone analytical reports.

The range of outputs we publish for this question will ultimately be dependent on our Quality Assurance and Statistical Disclosure Control processes.

The question contained a free-text field in which respondents could describe their trans status or history if they wished to do so. We are proposing the following provisional classifications. We are keen to get feedback on whether the listed example terminology has been appropriately classified.

High-level classification, used where a more detailed breakdown would be too disclosive to publish:

Category	Includes
No trans status or history	People who indicated that they have no trans status or history.
Has a trans status or history	Trans men, trans women, non-binary people, any trans status or history not otherwise specified
Prefer not to say/invalid	Anyone who did not answer the question or provided a response which did not clearly indicate whether the respondent has a trans status or history.

Lower-level classification, used for outputs where possible without disclosure risk:

Category	Includes
No trans status or history	People who indicated that they have no trans status or history.
Trans man	• Trans man • Trans male
Trans woman	• Trans woman • Trans female
Non-binary person	• Non-binary/NB/Enby • Genderfluid • Genderqueer • Trans masculine • Trans feminine • Agender • Multigender (bigender etc.) • Demigender
Trans status or history: not otherwise specified	Anyone with a trans status or history which cannot be categorised as trans man, trans woman, or non-binary. Includes people who wrote the following without further detail:

Category	Includes
	• Questioning • Genderflux • Gender non-conforming
Prefer not to say/invalid	Anyone who did not answer the question or provided a response which did not clearly indicate whether the respondent has a trans status or history.

We are proposing the following potential outputs:

- Number of people with trans status or history by location (Local Authority and above, lower levels if possible)

- Cross-tabulation with age by location (Local Authority and above, lower levels if possible)

- Cross-tabulations with other protected characteristics (At Scotland level, lower geographic levels if possible)

- Cross-tabulations with inequality and outcome markers such as health and occupation (At Scotland level, lower geographic levels if possible)

- Scotland-level count of gender identities in more detail (e.g. number of people who identify as genderfluid, etc.)

3.4 Sexual Orientation

The sexual orientation question is a voluntary question asked to people aged 16 and over.

Figure 3: 2022 Census – Sexual orientation question

Information on sexual orientation is collected in the Scottish Household Survey, Scottish Health Survey and Crime and Justice Survey. However, these survey sources do not provide data below local authority level, and do not allow for disaggregation of the information by other characteristics. The census will provide data at small geographies for use in service planning and equality monitoring.

We are proposing the following potential outputs:

- Cross-tabulation with age by location (Local Authority and above, lower levels if possible)

- Cross-tabulation with sex by location (Local Authority and above, lower levels if possible)

- Cross-tabulations with other protected characteristics (At Scotland level, lower geographic levels if possible)

- Cross-tabulations with inequality and outcome markers such as health and occupation (At Scotland level, lower geographic levels if possible)

Privacy considerations:

The number of individuals with a non-heterosexual orientation is likely to be reasonably low, so providing detailed breakdowns of responses, or cross-tabulating with detailed variables, could provide too great a risk of disclosing information about individuals for a sensitive topic. In order to avoid this, we may need to publish data surrounding sexual orientation at higher levels of classification. We present two levels of classification below.

Additionally, we may limit which variables it is possible to cross-tabulate this variable with. This means that restrictions will be applied through the Flexible Table Builder. These will be made clear to users through supporting information.

The range of outputs we publish for this question will ultimately be dependent on our Quality Assurance and Statistical Disclosure Control processes.

The question contained a free-text field, in which respondents could write their sexual orientation if they wished to do so. Depending on the number of responses we receive, we may be able to provide a more detailed breakdown of other sexual orientations. We are proposing the following provisional classifications.

High-level classification, used where a lower level classification would be too disclosive to publish:

- Straight/heterosexual

- Lesbian, Gay, Bisexual or another sexual orientation

- Prefer not to say/invalid

Lower-level classification - used for outputs where possible without disclosure risk:

- Straight/heterosexual

- Gay or lesbian

- Bisexual or pansexual

- Another sexual orientation

- Prefer not to say/invalid

3.5 Veterans

The veterans question should be answered for everybody who is aged 16 or over and specifies that currently serving members of the UK Armed Forces should answer 'no'.

> **26 Have you previously served in the UK Armed Forces?**
> ♦ **Current serving members** should only tick 'No'
>
> ☐ No
>
> ☐ Yes, previously served in **Regular** Armed Forces
>
> ☐ Yes, previously served in **Reserve** Armed Forces

Figure 4: 2022 Census – Veterans question

Information about the UK Armed Forces community hasn't previously been collected in the census except in relation to the occupation of those currently serving.

The topic consultation and stakeholder engagement have shown that users need information on:

- those who were regulars or reservists, in any role, to ensure that the commitments of the Armed Forces Covenant are met;

- the dependents of those persons who are serving, or who have served, to provide education and health services as outlined in the Armed Forces Covenant; and

- persons who have left the UK Armed Forces and are of working age so that their health and employment outcomes can be reviewed.

For those who are no longer serving, the Ministry of Defence definition of ex-service personnel will be adopted. Therefore, anyone who has served for a day in the UK Armed Forces, in any role, will be included as a veteran.

The topic consultation also identified a user need for data at local authority level, but also at some lower geographies to better target services to those most in need.

Users need to know the numbers and location of persons who have served for the UK Armed Forces, and their dependents. This is so they can commission and deliver appropriate services to meet the needs of this community and monitor the effectiveness of these, as outlined in the Armed Forces Covenant. Specifically data is required to understand employment, education and health outcomes. In Scotland there is a requirement for this data to be split by type of service (regular or reserve) as these groups may have differing needs.

Given the user need identified we are proposing that this question will be used to produce the following variables:

- An indicator for whether the respondent is a veteran of the UK Armed Forces

- An indicator for whether the Household Reference Person (HRP) is a veteran of the UK Armed Forces

- A indicator for whether a household contains any UK Armed Forces veterans

3.6 Passports

The passports question should be answered by everyone.

Figure 5: Passports question

Previous topic consultation on migration on the topic showed that while country of birth and national identity data from the census have previously been used as a proxy for citizenship, data on passports held is more relevant for migration policy discussions where individuals' rights and entitlements are conferred by citizenship. Many understood that this question could operate as a proxy question for citizenship, allowing capture of information about the diversity of the Scottish population.

A passports held question performed well in testing and would meet the majority of user need.

Given the user need identified we are proposing that this question will be used to produce the following variables:

- An indicator of whether or not the respondent has a passport

- An indicator for whether or not the respondent holds a UK passport

- A variable combining country of birth with UK citizenship status

- An indicator for whether or not the respondent holds dual citizenship

- A variable with a more detailed breakdown of dual citizenship based on whether the respondent holds a UK or other European passport

- A variable which classifies respondents based on whether they hold a UK, EU, other Europe or non-European passport

- A similar variable to above which provides a more detailed breakdown of non-UK/non-European citizenship

- An indicator for whether or not a household contains individuals from with different citizenships to each other

3.7   British Sign Language

The British Sign Language question should be answered for everybody who is aged 3 or over.

Figure 6: 2022 Census – British Sign Language question

In Scotland's Census 2011, information on British Sign Language (BSL) use was only collected through the question which asked "Do you use a language other than English at home?"

During question development for Scotland's Census 2022, a strong user need was identified for data on whether or not an individual could use BSL beyond "use at home". Stakeholders indicated that information on BSL use is widely used for policy development, equality monitoring and legislative work.

Given these stakeholder requirements, National Records of Scotland is proposing to include a number of output variables providing detail on BSL users in Scotland:

- An indicator for whether the respondent is a user of BSL.

- An indicator which for whether or not a BSL users main language is BSL or another language. This variable combines information from the question on a person's BSL with the "Main language" question.

- An indicator for whether a household contains any BSL users.

- A count of the number of BSL users in the household.

- A variable which categorises BSL users based on whether or not they are hearing impaired. This variable combines information from the question on a person's BSL use with questions on long term health conditions.

3.8 Bedrooms

The bedrooms question is answered by the householder or joint householder for every Household Census return. This is a new question for the 2022 Census and replaces the question on how many rooms were available for use by a household in the previous census.

Figure 7: 2022 Census – Bedrooms question

Number of rooms in a household has been collected by Scotland's census since 1951. A bedrooms question has not been included in Scotland's Census before but was included in the 2011 censuses for England and Wales and Northern Ireland.

During question development for Scotland's Census 2022, a strong user need was identified for data on bedrooms to enable calculations of overcrowding/under-occupancy, estimating property size and informing housing property and strategy.

Census stakeholders also indicated that information on the number of rooms and number of bedrooms are generally required to meet the same key data needs. As such, data users indicated that a question on the number of bedrooms would best meet user needs.

National Records of Scotland is proposing to include the following variables providing detail on number of bedrooms and occupancy rating:

- A count of the number of bedrooms in a household.

- A variable which calculates the number of persons per bedroom in the household

- A variable estimating the number of bedrooms required in a household based on the number and type of residents within the household.

- A variable which calculates the difference between the actual number of bedrooms in the household and the required number of bedrooms for the household.

4.   Changes to questions from 2011 Census

We put a lot of care into designing the question set for the 2022 census which has largely remained the same as in 2011. While there have been some changes, the questions asked will allow us to produce largely consistent outputs from the 2011 Census.

There is more information on the development of the questions for the 2022 census on our website:

Scotland's Census 2022 Question development

This section considers the differences in questions and highlights any proposed differences in variable classifications compared to the 2011 Census. This will not cover questions where wording has changed but the output classifications remain the same.

You can see the full paper questionnaires on our website:

Scotland's Census 2011 question set

Scotland's Census 2022 question set

4.1   Central heating

During topic consultation a strong user need was identified for data on type of central heating. This includes use in the analysis and monitoring of energy efficiency and fuel poverty and to inform where resources to support interventions with these should be prioritised; and by local authorities to identify dependence on specific types of heating, particularly in rural areas. Response options for this question were reviewed to ensure that they reflect the available types of central heating for 2022.

Through consultation and testing the following changes were made to the question:

- Addition of response options including
    - Other gas (including liquid petroleum gas and biogas)
    - Wood or Biomass (logs, pellets, chippings)
    - Other renewable energy source (including electric and air heat pump systems).
    - District or communal heat system
- Addition/review of in-question guidance
- Removal of the text box from the 'Other' response option

Figure 8: Central heating question: 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the [Housing and accommodation: Central heating topic report.](#)

4.2 Household tenure

Due to the increase in prevalence of shared equity schemes such as The Low-cost Initiative for First Time Buyers (LIFT) and Help-to-Buy schemes, this question has been updated with a new response option with the following wording: 'Owns with shared equity e.g. LIFT, Help-to-Buy'.

The aim of this addition was to provide local government with the necessary data to monitor such schemes and to help respondents answer the question more easily.

Figure 9: Household tenure question: 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the [Tenure and Landlord Topic Report.](#)

4.3 Landlord

The following changed to the landlord question have been made for the 2022 census.

- The response options Council (Local Authority) and Housing Association / Registered Social landlord have been grouped

- Employer of a household member and Relative or friend of a household member have been removed.

Figure 10: Landlord question: 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the [Tenure and Landlord Topic Report](#).

4.4 Religion

The religion question has been updated for the 2022 census with a new response option 'Pagan'.

A requirement for this information to study the changing patterns of religious identity, the revival of Pagan religion, provide appropriate services and for equality monitoring was expressed.

Figure 11: Religion question: 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the Religion Topic Report.

4.5   Ethnic group

This question has been updated for the 2022 with a new response options: 'Roma' and "Showman/Showwoman".

User need was expressed for information on health status, qualification levels, employment, overcrowding, tenure, and housing, to improve education and housing services for the Roma population and to contribute to policy development and monitoring.

A need for more information on Showman/Showwoman to inform policy, housing and service delivery was expressed.

More information on the testing and development of this question can be found in the Ethnic Group Topic Report.

4.6   Long-term conditions

This question has been updated with a new response option 'Full or partial loss of voice or difficulty speaking'.

18 Do you have any of the following, which have lasted, or are expected to last, at least 12 months?
♦ Tick **all** that apply

☐ **Deafness or partial hearing loss**

☐ **Blindness or partial sight loss**

☐ **Full or partial loss of voice or difficulty speaking** (a condition that requires you to use equipment to speak)

☐ **Learning disability** (a condition that you have had since childhood that affects the way you learn, understand information and communicate)

☐ **Learning difficulty** (a specific learning condition that affects the way you learn and process information)

☐ **Developmental disorder** (a condition that you have had since childhood which affects motor, cognitive, social and emotional skills, and speech and language)

☐ **Physical disability** (a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, lifting or carrying)

☐ **Mental health condition** (a condition that affects your emotional, physical and mental wellbeing)

☐ **Long-term illness, disease or condition** (a condition, not listed above, that you may have for life, which may be managed with treatment or medication)

☐ **Other condition**, please write in:

☐ **No condition**

20 Do you have any of the following conditions which have lasted, or are expected to last, at least 12 months?
♦ Tick all that apply.

☐ Deafness or partial hearing loss

☐ Blindness or partial sight loss

☐ Learning disability (for example, Down's Syndrome)

☐ Learning difficulty (for example, dyslexia)

☐ Developmental disorder (for example, Autistic Spectrum Disorder or Asperger's Syndrome)

☐ Physical disability

☐ Mental health condition

☐ Long-term illness, disease or condition

☐ Other condition, please write in

or

☐ No condition

Figure 12: Long-term conditions question: 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the Health Topic Report.

4.7   Have you ever done any paid work

This question has been changed to a tick box response to indicate whether or not they have worked in the last 12 months or if the period of unemployment has been longer. Previously users would write in the year last worked.

Figure 13: Have you ever worked question - 2011 Census (left) and 2022 Census (right)

More information on the testing and development of this question can be found in the Labour market topic report.

5. Geography

5.1 Previous Stakeholder engagement

We held four stakeholder events in June 2019, discussing non-standard outputs from Scotland's Census 2011, geographies for census outputs and plans for the 2022 Scotland's Census website.

Users who had previously expressed an interest in outputs or geography were invited. In total 47 stakeholders attended over four sessions, representing a range of different areas including: local authorities, academics and members of the public.

The presentation materials from these events are available on the Scotland's Census website, along with a summary of the feedback we received.

5.2 Census geographies

Standard geographies

We are proposing that the following geographies will be available in the flexible table builder as they have a wide usage or particular importance identified from historical usage:

- Scotland
- Local Authority/Council Area
- Electoral Ward
- Data Zones
- Output Area
- Civil Parish
- Scottish Parliamentary Constituencies
- Health Board Areas
- Settlement and Localities
- United Kingdom Parliamentary Constituencies
- Island groups (Inhabited islands in 2011)
- Scottish Parliamentary Regions
- Integration Authorities (replacing Community Health Partnerships)
- National Parks

LC and DC postcode Sector

Previous stakeholder engagement around the use of Census geographies has shown that usage of the Local Characteristic (LC) or Detailed

Characteristic (DC) postcode sector geographies is limited. During discussions, it emerged that there is some confusion about what LC and DC postcode sectors actually represent and what the difference between them is. Several stakeholders noted that they had a preference for using other geographies such as Data Zone rather than these postcode sector geographies.

Given the limited usage and possible confusion around these geographies, we proposed to drop these geographies for standard outputs and not include them in the 2022 flexible table builder.

Non-standard Geographies

These geographies are referred to as non-standard geographies as they were not included in standard outputs for 2011. These geographies include:

- Intermediate Zones

Stakeholders expressed that they had used this geography, particularly those working in Local Authorities. Tables at intermediate zones have been used by stakeholders for community planning, area profiling, demographic analysis and more.

A number of data users also pointed out that intermediate zones are particularly useful as this is a widely used geography for a range of other official statistics outside of census

- Travel to Work Areas

No 2011 census outputs were produced for the Travel to Work Areas. A minority of stakeholders expressed a distinct interest in this geography, however a wide range of potential uses were identified, in particular analysis on labour market, transportation and housing.

- Workplace Zones

Only 8 tables have been produced for workplace zones in Scotland from 2011 census data. These tables were also released late on in the census release timeline, only being made available in 2018.

Although most stakeholders had not made use of the workplace zones, a small number made regular use and made clear that this geography was highly important to their work. This geography has been used by stakeholders for a range of analysis on topics like population and housing statistics, monitoring regional economic development and transportation planning.

A number of stakeholders pointed out that they were either not aware that the workplace zone tables existed or that the tables had been released so late in the census release timeline that they were no longer relevant for their work. Amongst these several commented that they would be

interested in using this geography if it was made available more quickly after census day.

- Grid Squares

Usage of the 2011 grid squares was limited. Several stakeholders expressed a lack of awareness of this geography, however there are also known quality issues with the 2011 grid squares. Both of these factors are likely to have contributed to the lack of grid square usage.

Although use of the 2011 grid squares was limited, several stakeholders commented that they would be interested in using grid squares for 2022 outputs if these could be developed to meet the requirements of data users.

- UK International Territorial Levels (NUTS 2 and NUTS 3 equivalent)

A small number of stakeholders had made use of the NUTS2 and NUTS3 European statistical geographies. These geographies were described as being useful for making comparisons between regions in Scotland and other areas of Europe for the purposes of demographic and labour market analysis.

By and large however, most stakeholders reported that this geography was of limited use for their work and it was noted by many that Council Area is usually a suitable alternative.

On the basis of this feedback, National Records of Scotland is proposing that the following Non-standard Geographies from 2011 are made available alongside 2022 outputs.

- Intermediate Zones
- Travel to Work Areas
- Workplace Zones
- Grid Squares
- UK International Territorial Levels

Lookups

While not geographies there are classifications which users may want to use alongside the census data. For example we know that users have used classifications such as the Scottish Index of Multiple Deprivation (SIMD) and the urban rural classification alongside census data as part of their analysis.

National Records of Scotland are proposing where we identify a clear user need and it is appropriate it is proposed that these are added to the census dataset by the outputs team, and included in the flexible table builder for users to access.

5.3   Methodology

The geographies that will be made available alongside Census 2022 data is mainly based on the 2011 methodology. More information about the [2011 Census geographies](#) is available on the NRS website.

Output Areas

Output Areas (OAs) are the lowest level of Geography at which statistics are released in Scotland and are created by grouping postcodes together. As in 2011 OAs will be our main geographical base for Census 2022 outputs. National Records of Scotland will produce outputs for most supported geographies by aggregating OAs on a best fit basis. The method we use to describe the best-fit is described in the [Geography Policy for the Government Statistical Service.](#)

The main aim when creating OAs is to ensure that there is continuity with OAs from previous censuses, whilst also making sure that OAs respect changing Locality boundaries where possible.

If an OA is over the maximum threshold then it should, where possible, be split to create two or more OAs. If the OA is vastly over the threshold then it may be split more than once. When creating OAs, a size of 52 households (2001 average) will be targeted as well as trying to have an OA in as compact a shape as possible

Where OAs are too small we plan to merge these with a neighbouring OA. The first choice would be to merge the OA that is too small with an OA of the same type (i.e. rural or locality). It would then be desirable to merge the OA with one of the same 2011 code. This may occur when a 2011 OA has been split more than once and has resulted in a 2022 OA which now falls below the minimum threshold. If it is not possible to achieve both of these then the OA with which the small OA has to be merged should be chosen in the order of preference listed. Where neither is possible the OA will be merged with the smallest neighbouring OA. Once potential OAs have been chosen for the OA below threshold to be merged with, if there is a choice available, the OA which results in the best shape will be chosen.

Once the OAs have been allocated, a master postcode will be assigned for each OA. The OA will inherit all the characteristics of the master postcode, including its assignment to higher areas. The master postcode will be selected by using an algorithm based on the postcode with grid references closest to the centre of the OA weighted by 2022 Census population counts, which will consist of both household and communal persons.

5.4   Other products produced by Geography

Alongside the census outputs, National Records of Scotland plan to produce a number of other geography related products for use with Census data:

- Postcode to census output area (COA) look up file

- COA to higher area database

- Census version of the postcode index

- Census version of settlements and localities

- Spatial files (a link will be made available from the Geography page and/or census outputs system).

- Information on COA creation and other reference material

6. Population-base specifications

6.1 Main population bases

The population bases used for the Scotland's Census 2022 will remain largely the same as those we used in the 2011 Census.

The main population bases for Census 2022 are:

- Usual residents
- Households
- Usual residents in households
- Communal establishments
- Usual residents in communal establishments
- Household reference persons (HRP)

We are proposing that each population base will be available as a dataset for use in the Flexible Table Builder. This will allow users to build their own tables using these population bases.

6.2 Secondary population bases

We will provide outputs based on the following population bases.

- Dwellings
- Families
- Dependent children

Secondary population bases will not be available through the Flexible Table Builder. National Records of Scotland will produce tables using these population bases and they will be available through the Scotland's Census website. There may be scope for developing flexible datasets based on these populations as the outputs develop over time.

6.3 Place of Residence

In all of these population bases, usual residents are counted at their place of residence.

A usual resident is anyone who on 20 March 2022:

- is in the UK and has stayed, or intends to stay, in the UK for 6 months or more
- has a permanent UK address and is outside the UK and intends to be outside the UK for less than 6 months

The statistics will show usual residents at the location they considered to be their usual place of residence on Sunday 20 March 2022. A resident's

usual place of residence is generally their permanent or family home or the address in the UK at which they spend most of their time.

We counted students at their term-time address, with some details also collected at their home address.

6.4 Alternative population bases

The information collected in the census on travel to work/study also enables statistics to be produced for two alternative population bases: workplace population and daytime population.

Both population bases are explained below and the definitions are consistent with those used in the 2011 Census outputs.

There's the potential for disclosure to be higher for alternative population bases. As a result, we need to carefully assess what additional information we can publish and for what geographical levels.

Workplace

The workplace population is an estimate of the population working in an area. It includes usual residents aged 16 to 74 whose main place of work is in the area. People who work mainly at or from home, or who do not have a fixed place of work, are included in the area of their usual residence. The following population group is excluded from the workplace population of an area:

- people living in Scotland but working in England, Wales, Northern Ireland, outside the UK or on offshore installations.

Workday

The workday population is an estimate of the population of an area during the working day. It includes everybody who works or studies in the area, wherever they usually live, and all respondents who live in the area but do not work or study.

People who work or study mainly at or from home, or who do not have a fixed place of work or study, are included in the area containing their home address. The daytime population will include shift and night workers such as hospital staff and security guards.

The following population groups are excluded from the daytime population of an area:

- people living in Scotland but working or studying in England, Wales, Northern Ireland, outside the UK or on offshore installations; and

- people with a place of study in Scotland but who are not usually resident in Scotland.

7. Scotland's Census website

In preparation for the 2022 Census we engaged with stakeholders to develop the Scotland's Census website. We gathered feedback from users to determine whether or not the website was meeting user needs. Through this work we determined that a new website should be developed for the 2022 Census outputs. This would allow us to make use of the latest technology to provide users with Census results that best meets their needs and is accessible and useable.

Throughout the development of the website we regularly tested with users to ensure that the website met their needs. This involved testing both usability and accessibility with users from different sectors and those who use the census data regularly and those with little knowledge of the census.

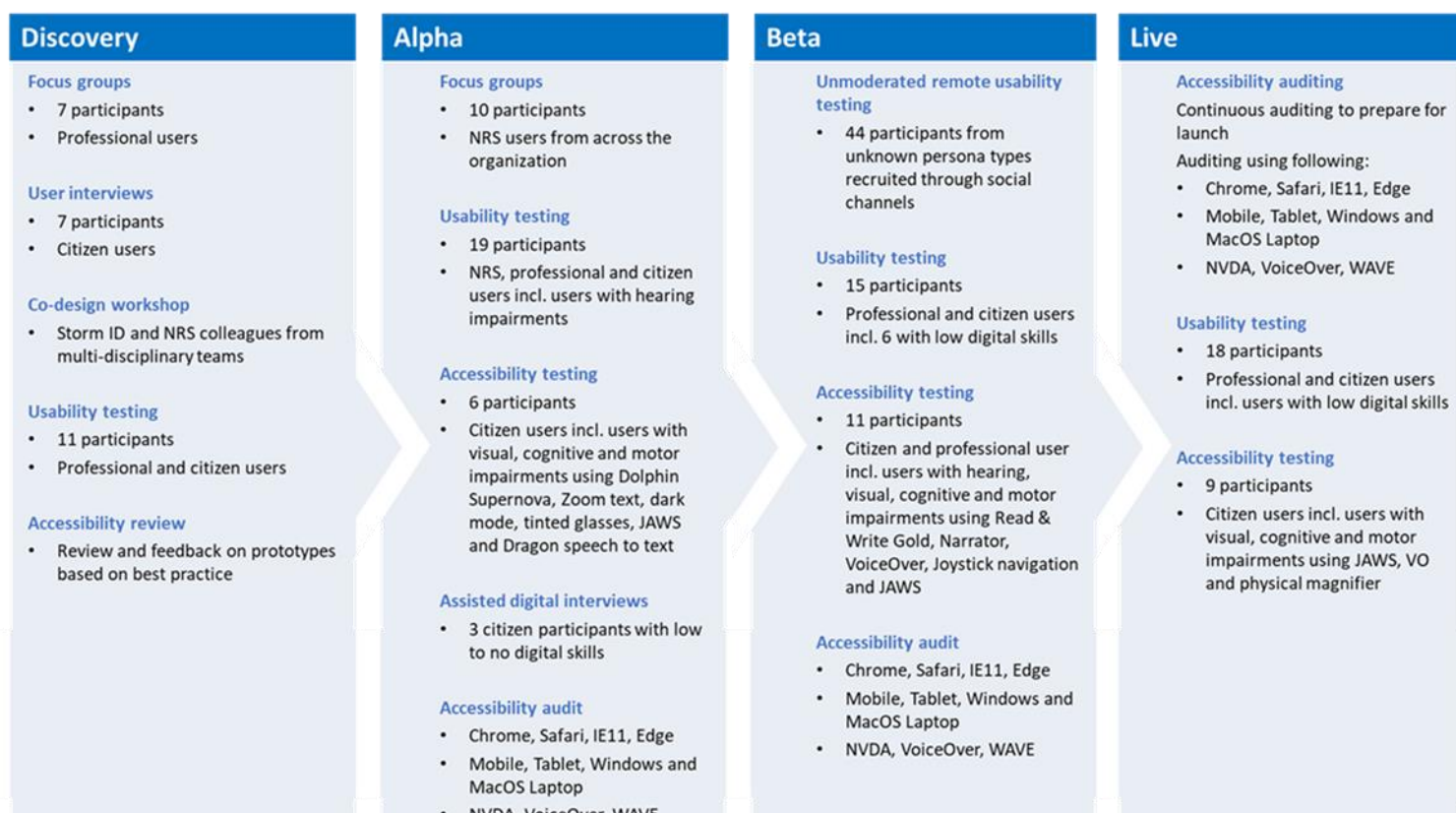A breakdown of the sessions is given below in Figure 14:

Discovery

Focus groups
- 7 participants
- Professional users

User interviews
- 7 participants
- Citizen users

Co-design workshop
- Storm ID and NRS colleagues from multi-disciplinary teams

Usability testing
- 11 participants
- Professional and citizen users

Accessibility review
- Review and feedback on prototypes based on best practice

Alpha

Focus groups
- 10 participants
- NRS users from across the organization

Usability testing
- 19 participants
- NRS, professional and citizen users incl. users with hearing impairments

Accessibility testing
- 6 participants
- Citizen users incl. users with visual, cognitive and motor impairments using Dolphin Supernova, Zoom text, dark mode, tinted glasses, JAWS and Dragon speech to text

Assisted digital interviews
- 3 citizen participants with low to no digital skills

Accessibility audit
- Chrome, Safari, IE11, Edge
- Mobile, Tablet, Windows and MacOS Laptop
- NVDA, VoiceOver, WAVE

Beta

Unmoderated remote usability testing
- 44 participants from unknown persona types recruited through social channels

Usability testing
- 15 participants
- Professional and citizen users incl. 6 with low digital skills

Accessibility testing
- 11 participants
- Citizen and professional user incl. users with hearing, visual, cognitive and motor impairments using Read & Write Gold, Narrator, VoiceOver, Joystick navigation and JAWS

Accessibility audit
- Chrome, Safari, IE11, Edge
- Mobile, Tablet, Windows and MacOS Laptop
- NVDA, VoiceOver, WAVE

Live

Accessibility auditing
Continuous auditing to prepare for launch
Auditing using following:
- Chrome, Safari, IE11, Edge
- Mobile, Tablet, Windows and MacOS Laptop
- NVDA, VoiceOver, WAVE

Usability testing
- 18 participants
- Professional and citizen users incl. users with low digital skills

Accessibility testing
- 9 participants
- Citizen users incl. users with visual, cognitive and motor impairments using JAWS, VO and physical magnifier

Figure 14: Summary of stakeholder testing sessions for Scotland's Census 2022 website

Through this approach we were confident that the website would be accessible and useable and meet the needs of users throughout the life of the Census.

The website was also passed an assessment against the Scottish Government Digital First Service Standard which is a set of 22 criteria that all digital services developed by Scottish Central Government sector organisations and Scottish Government corporate services must meet.

The standard aims to make sure that services in Scotland are continually improving and that users are always the focus.

Through this consultation we would like to get the views of users who have used the new website since its launch or those planning to use it once the data is available. To help interpret feedback and understand user needs we are asking for user's views on different sections of the website which we detail in more detail below:

7.1   Census Results - Search census data

Scotland's Census - Search Census results

The search Census results section of the website is where users can currently access the 2001 and 2011 Standard Census tables. This is also where users will access stacte census tables.

Users can search census tables by prioritising the search by location or topic. This is because not all Census tables are available for every geography so a user can prioritise this if they need data at a more detailed geography.

7.2   Census Results - Area overviews

Scotland's Census - Area Overviews

Area overviews allows users to compare summary statistics for a range of areas in Scotland against previous censuses or other areas.

It provide statistics for a range of topics, these can be presented either as values or as charts and the data can be downloaded.

The Area Overviews will be updated as the univariate topic data is published.

7.3   Flexible Table Builder Beta

A key innovation for the 2022 outputs will be the use of a Flexible Table Builder. We developed this as part of the website and held an open beta from May 2021 to October 2021. This allowed use to test the tool and gather feedback from users before using the tool to publish 2022 outputs.

We received positive feedback from users on the tool and the potential to create your own tables using Census data. Users did note that they would benefit from training and user guides when using the tool. National Records of Scotland has confirmed we will provide instructions to help users make the most use of the tool.

7.4   Download Data

Scotland's Census - Download Data

The download data section of the website allows users to download all standard outputs from the 2011 and 2001 censuses as CSV files. We are

planning to make the 2022 pre-defined tables available through this section of the website.

7.5   Case Studies

Scotland's Census - Case Studies

We have collected case studies from users of Census data and added them to our website. This is to promote the use of Census data and help users different sectors identify ways they could make use of Census data.

7.6   Metadata

Scotland's Census - Census Metadata Pages

Metadata will be made available alongside Census data to help users when using Census data. The metadata will include definitions, information on comparability with previous and other UK Censuses.

7.7   About the census

Scotland's Census - About the Census

We provide information on the background of the Census. Users can find information on the history of the census, the design of the census and detailed methodology papers on the 2022 Census.