Response summary: User needs from 2022-based national, subnational and household projections engagement

Population and Household Projections

July 2024

Contents

Contact information

Please send enquiries to projections@ons.gov.uk.

Accessibility

This engagement exercise response can be provided in alternative formats upon request.

If you have any feedback about the way this engagement exercise has been conducted, please email external.affairs@ons.gov.uk.

About the engagement exercise

This document summarises the responses received by the Office for National Statistics (ONS) on the engagement exercise ['User needs from 2022-based national, subnational and household projections'](#) and sets out what actions we plan to take with consideration of users' feedback.

The engagement exercise ran for six weeks, from 30 January to 12 March 2024. It allowed us to gather feedback on users' output needs from the projections and understand what users would like to see in our releases, such as specific variant projections or new dataset formats. We conducted this engagement earlier in our production process than in the past to enable enough time for us to consider and meet users' needs, and to help us prepare for the planned publications of our 2022-based projections. The engagement exercise was conducted in line with the [Code of Practice for Statistics](#).

We would like to thank all respondents for their valuable feedback, which will continue to guide our work. Some user requests involve longer-term planning and implementation which we may introduce over time. We will be balancing the user needs identified in this exercise with our available resources. We will keep users informed of our plans for 2022-based projections.

Background

Population and household projections produced by the ONS serve a wide range of users across government and beyond. The primary purpose of the projections is to provide information on potential future population and household numbers. These are used as a common framework for planning and policymaking. We produce national population projections (NPPs) for the UK and constituent countries, subnational population projections (SNPPs) for England, and household projections (HHPs) for England. SNPPs and HHPs are produced by the appropriate organisation for each part of the UK: the ONS for England, the Welsh Government for Wales, the National Records of Scotland (NRS) for Scotland, and the Northern Ireland Statistics and Research Agency (NISRA) for Northern Ireland. Wherever possible, we base these projections on the latest mid-year population estimates, together with

assumptions of future levels of fertility, migration, and mortality. For household projections these are based on household representative rates taken from census data.

Following the conclusion of Census 2021, we are now moving into a new cycle of projections releases which will incorporate the latest census data. A process known as reconciliation and rebasing (of the mid-year population estimates) was completed in 2023. This provided rebased population estimates for England and Wales for the decade to mid-2021 and ensured that these estimates take account of latest census data. Population estimates rebasing has also been completed in Scotland and Northern Ireland using the latest census data. Rebased population estimates, along with updated components of change on births, deaths and migration, are available for us to use in the assumption-setting process for our upcoming projection outputs.

Our work is underway on producing 2022-based NPPs, SNPPs and HHPs for England. The next 2022-based NPPs following 2021-based interim NPPs have a provisional release date of November 2024, and the SNPPs and HHPs for England are scheduled to follow in February or March and April or May 2025 respectively. For updates, please see the ONS release calendar or subscribe to our Population Statistics newsletter. SNPPs and HHPs are produced and published by the appropriate organisation for each part of the UK: the ONS for England, the Welsh Government for Wales, the National Records of Scotland (NRS) for Scotland, and the Northern Ireland Statistics and Research Agency (NISRA) for Northern Ireland.

Summary of responses

We promoted the engagement exercise and supporting webinar to users through a range of channels, including, social media, targeted emails, newsletters, and forum meetings. We received a total of 39 responses. Nine individuals reported responding in a personal capacity, and 30 in a professional capacity. Figure 1 shows the sectors respondents worked in and Figure 2 shows the number of responses per projections output. A total of 36 responses were received through our consultation and engagement platform, two responses were received through paper questionnaire and one response was sent by email.

Figure 1: Responses by the sector the responded worked in

- academia or voluntary sector
- local authorities
- other government departments
- individuals
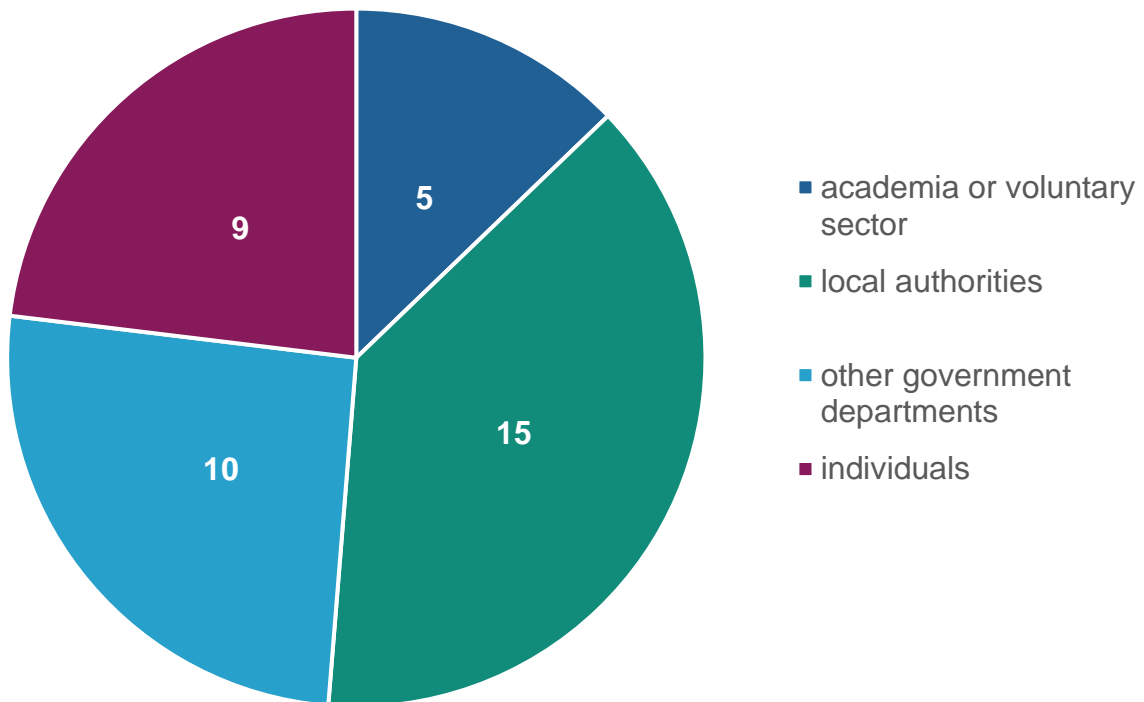
Figure 2: Number of responses per projections output

- NPPs
- SNPPs
- HHPs
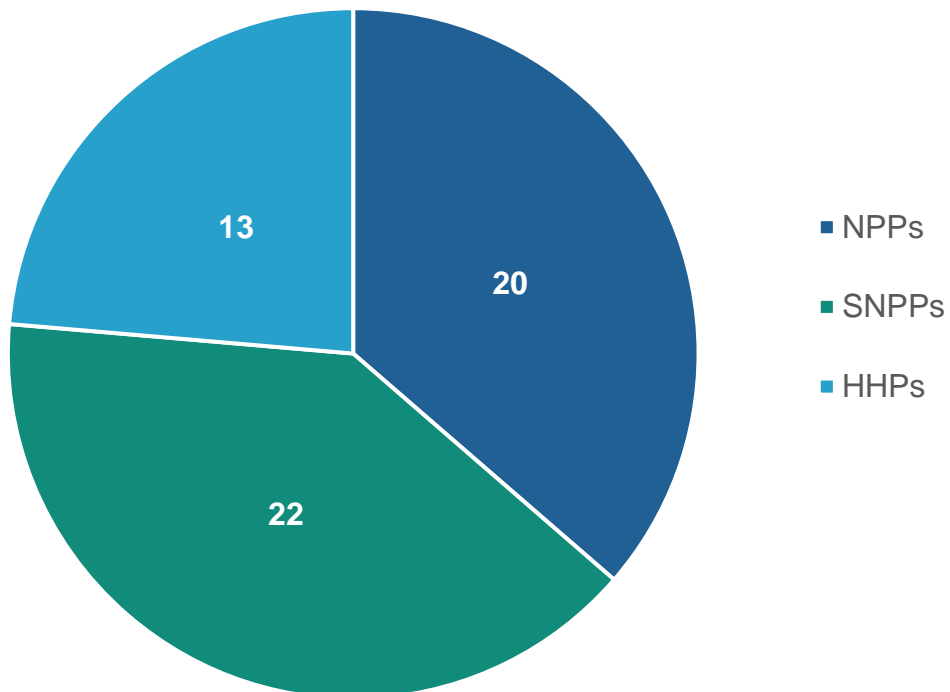
In answering the question on how our projections are used, respondents said that they use and need our projections for the following:

- examination of the economic boost from immigration
- fiscal scrutiny or block granting calculations
- exploring future aging population and its impact
- preparing and planning for the future demand on public services
- monitoring environmental and green recovery targets

General feedback on our projections outputs

Statistical bulletins and supporting documentation

In general, users said our statistical bulletins and supporting documents are easy to understand and sufficiently detailed for users to be able to accurately interpret the figures from the projections. Users also reported that they give them the background information needed to make the best use of the projections.

Methodological articles

Seven users mentioned that they would like to see more technically detailed articles for experienced and technical users. A need was also expressed for analysis of accuracy, changes in methods, and assumptions across previously published projections. There was also a need for more guidance on the appropriate use of our projections and the mid-year population estimates, dynamic population model (DPM), and admin-based population estimates (ABPE).

Datasets

Users were happy with the current number of datasets and their formatting, and they commended the national population projections (NPPs) table of contents file for ease of use and being able to find relevant datasets. Some users did however say they would like to see a web-based table builder similar to the [Census Customised Table Tool](#) or [Nomis](#). They also said they would like us to replicate the table of contents file for the SNPPs and the HHPs, and to produce bespoke projections based on local knowledge.

Timings of projections

Some users wanted to see a timelier release schedule for SNPPs and HHPs, better communication of potential delays to them, and annual production of NPPs.

Other types of projections

Responses showed that, as well as the projections we regularly produce, users would like to see projections based on ethnic group or country of birth, religious affiliation, marital status, and disability status.

A summary of responses for national population projections

Methodological articles

Users would like to see an analysis of the accuracy of our projections, changes made to methods and assumptions across previously published rounds of projections (for example, a historical comparison). Specifically, for the NPPs, they would like to be provided with more information about the consistency of the input data across UK constituent countries (for example, incorporating census data) and clarification on the usability of the data that originated during coronavirus (COVID-19) pandemic. Furthermore, users would like us to explore the possibility of incorporating more detailed migration behaviour into our methodology, such as the intentions to stay in the UK long-term to help with pension calculations.

Frequency of projections

Some users fed back that they would like us to continue producing NPPs annually (where we have recently produced interim and variant releases on a more frequent basis), alongside the NPPs, with all assumptions updated, on the current two-year cycle. The specific proposal here was to focus on delivering principal projections first and producing variants at later stage to ensure publication in a timely manner.

Variant projections

Regarding the need for variant projections, users would like to see:

- a similar suite of variants as available in 2018-based NPPs to be produced as part of 2022-based NPPs
- variant fertility projections reflecting the total fertility rates among the UK and non-UK born populations
- a trend-based migration variant and an alternative migration forecast variant
- high and low migration variants

- a migration variant with alternative short-term adjustments to reflect assumed stay-rates amongst migrant types (such as workers, students, or dependents)
- a mortality variant that reflects a rise in persistent ill-health issues among the population

Data formats

Regarding needs for new data formats, users would like to see:

- data being made available in csv, application programme interface (API) formats, and others that are compatible with PowerBI, ArcGIS shapefiles and API links
- data being reformatted to meet machine-readable requirements, which are normalised rather than cross-tabbed)
- unrounded single year of age data for 90+ in open data tables
- period and cohort qx and ex tables for single year of age 100+
- additional age groupings beyond those currently produced (0 to 17 populations, 65+, 85+)
- unrounded figures (not in thousands)
- components of change, broken down by single year of age in xml format, as this enables users to create other key age groups

A summary of responses for subnational population projections for England

Datasets

Our users would like to see better signposting of our SNPP datasets and articles by replicating the NPP table of contents file, as they reported difficulties in navigating our website and locating the datasets relevant to them.

Methodological articles

There is both an appetite for analysis of the accuracy of previous projections, and for an article that would highlight changes being made to the methods and assumptions across previous projections. Users also expressed a need for a guide on how changes in assumptions impact the projections figures, and what drives the most change in subregional

populations. They would like to see some published guidance on the appropriate use of SNPPs and ABPEs, and the relationship between them.

Geography

Users have said that they would like us to explore the possibility of producing SNPPs for smaller geographic areas: sub-county (MSOA), national park boundaries, integrated care boards, water company supply areas, primary care networks, and integrated neighbourhood teams.

Timing of SNPPs

Our users highlighted the need for more responsive and timely releases of SNPPs which incorporate data which include periods of significant change (such as ongoing military conflicts, COVID-19, Brexit, and the cost-of-living crisis) so that they could make well-informed, data-driven decisions.

An interactive dashboard

We also note user feedback on the benefits from an interactive dashboard in which users could be provided with a tool to compare similar local authorities based on the Index of Multiple Deprivation (IMD) and urban or rural classification.

Accessing SNPP data pre-release

Some local authority users asked whether there is a possibility to be granted pre-release access to a summary of the results in a secure environment so that they could become part of a locally driven quality assurance process. They told us that this would allow them to provide us with feedback on the datasets and to suggest adjustments for local components of change based on users' local knowledge.

Methodology

Users said they would like us to explore whether we could base our internal migration assumption on the last five years of data instead of a two-year trend, and if we could include confidence intervals in our release.

Variant projections

Regarding the need for variant projections, users would like to see:

- a similar suite of variants as were produced for the 2018-based SNPPs
- high and low international migration variants
- a 10-year internal migration data variant

- an internal migration variant that uses long-term trends from the latest 10 years of data, and short-term trends from the latest five to six years of data
- a 'natural change' / 'zero migration' variant
- a trend-based migration variant alongside the alternative 'scenario' based one

Data formats

Regarding the need around new data formats, users would like to see:

- data being available in csv, API formats, and other formats that are compatible with PowerBI, ArcGIS shapefiles and API links
- unrounded single year of age data for 90+ in open data tables
- datasets with single year of age and sex split instead of grouping them in five-year-age bands
- components of change at the local level
- urban/rural classification and by Index of Multiple Deprivation
- unrounded figures (not in thousands)
- components of change broken down by single year of age in xml format, as this enables users to create their own age groups

A summary of responses for household projections for England

Statistical bulletin

Users of HHPs reported that they would find it useful if ONS could provide them with an analytical bulletin with local authority level insights and thematic analysis around different household types and community groups based on the urban or rural classification and the Index of Multiple Deprivation (IMD). Users also felt that through the bulletin there is a strong need for us to send clear messaging on the appropriate use of HHPs in the context of scrutinising and forecasting how many houses should be built in the future.

Datasets

As with the SNPPs, our users would like to see better signposting of our outputs and articles by replicating the NPPs table of contents file, as they found difficult to navigate our website and locate the datasets relevant to them.

Methodological articles

As with the SNPPs, there is an appetite for both analysis of the accuracy of the previous projections, and for an article that would highlight changes being made to the methods and assumptions across all runs of projections. There is also interest in various articles that would expand on the quality of our underlying data and our assumption setting process.

Household projections methodology

Users have said that they would like us to conduct a methodology review around the use of communal establishments and explorative work around the current trends in students and people aged 75 or older living in communal establishments. In addition, users would like some clarity on whether the census data would be used to determine the headship rates and whether the upcoming 2022-based Household Projections will incorporate the latest two or three census data points in their methodology.

Accessing Household Projections data pre-release

Some local authorities asked whether there is a possibility to be granted pre-release access to a summary of the results in a secure environment so that they could become part of the locally driven quality assurance process. The thought behind this is that it would allow them to provide feedback on the data, and suggest adjustments based on their local knowledge.

Variant projections

Regarding the need around variants, users would like to see:

- a similar suite of variants available in 2018-based HHPs release
- a variant that holds household representative rates (HRRs) constant
- a 10-year internal migration variant
- high and low internal migration variants
- a range of alternative headship rates variants
- high and low international migration variants

Data formats

Regarding the need for new data formats, users would like to see:

- data being available in csv, API formats, and other that are compatible with PowerBI, ArcGIS shapefiles and API links
- datasets including single parent household and households with two or more unrelated members broken down by the size of dwelling, inter-generational households, student

households, households with no children and lone parent households, communal establishments, explicit one-person household projections for older people i.e. 65-plus, 75-plus, 85-plus

- greater flexibility in the age groups and components of change, average household size, dependency ratios

Our actions

In this section, we provide responses to specific requests received through this engagement with users based upon the releases the request covered. These have been taken from the feedback we received and concern all three projections, national population projections (NPPs), subnational population projections (SNPPs) and household projections (HHPs) along with variant projections and data formats.

National, subnational, and household projections

Requests for new projections

We are aware of interest in projected future population change by a range of characteristics. As part of this engagement, users requested we consider the release of population projections by ethnic group, religious affiliation, marital status and disability status. In light of these requests, we will revisit the relative need for each of these types of projections and consider ways in which these needs might be addressed after the release of the 2022-based suite of population and household projections. This engagement was focussed on the NPPs, SNPPs and HHPs; these requests for other projections types require greater and deeper consideration outside of these releases and in some cases may need, as for our SNPPs, the NPPs as a core input.

Request for more detailed articles

We appreciate this feedback and that this highlighted the need for the continued release of technically detailed articles. For the NPPs we plan to publish a range of articles as part of the release including articles covering: quality and methodology information (QMI), background and methodology, and information on the fertility, migration and mortality assumptions. For the SNPPs, we plan to provide technically detailed documents with the release in early 2025. For the HHPs, we plan to publish an update to our user guide alongside a methodological article, which will also be updated. We will revisit past releases and review the amount of technically detailed information on the projections to ensure this is covering the variety of user needs and information being sought, especially on accuracy and use of the projections, which were recurring themes in users' feedback.

Request for a web-based table builder

In addition to the release of tables on the ONS website, we plan for these statistics to be made available on Nomis as soon as possible after release. Nomis has the functionality for users to build their own tables. For the 2022-based NPP release, we are exploring a new website whereby users would be able to select the data (including variant projections) they wish to access. We will also explore the potential to replicate this for the SNPP and HHP releases in 2025 although, where these releases are smaller in terms of datasets provided, we will first be exploring the potential to use a table of contents file as for the NPPs.

Request for 'open to public' projections tools

As part of our work towards presenting accessible NPP data, we will be exploring the potential for an open tool allowing users to develop their own projections. We will consider what timing is achievable in light of the releases on SNPPs and HHPs planned in 2025. We are aware of existing public online tools and are keeping abreast of their development and evolution. We will continue to review the development of public tools of this type.

Request for analysis of accuracy and methodological changes

Every 10 years after the census, following the conclusion of our reconciliation and rebasing of population estimates, we have reported on the accuracy of projections and projected components of change over time. We have work in progress on accuracy reporting for rounds of projections since 2011 and plan to make comparisons for the SNPPs and NPPs, and potentially for HHPs. We are aiming to publish the first of these accuracy reports on NPPs no later than the next NPP release, with the SNPP equivalent to follow in 2025.

Guidance on the appropriate use of projections, mid-year population estimates, dynamic population model and admin-based population estimates

We have recently published further guidance and comparison of the mid-year population estimates and admin-based population estimates. Over the next 12 months, we will continue to review the guidance available to users of population statistics.

Subnational and household population projections

Request for table of contents files

A table of contents is already produced for NPPs. In response to feedback, we plan to produce tables of contents for both the upcoming SNPP and HHP releases to aid users with accessing the articles and datasets.

Request for confidence intervals around our SNPP and HHP releases

We have researched the feasibility of producing confidence intervals for the SNPPs and the HHPs. We are not currently in a position where we can provide confidence intervals for the next releases; variants produced for both outputs provide an indication of variability in response to alternative future demographic scenarios. As part of the transformation of population and migration statistics, we will explore the potential use of alternative projection types such as probabilistic projections to convey uncertainty.

Request for pre-release access in a secure environment

In 2017, pre-release access to the ONS's statistics was removed in all circumstances except for statistical production, quality assurance requests from the ONS business areas where the statistics are not yet in their final publishable form, or exceptional pre-release access.

Request for an interactive tool to compare similar local authorities

In our last SNPP and HHP releases, we produced interactive maps to allow users to compare a local authority in England with any others. We are planning to make similar interactive tools available once again in the next releases.

Request for responsive and timely releases of SNPPs and HHPs which incorporate data that capture periods of significant change

The SNPPs use trend data that reflects recent periods of significant change. In addition to this engagement, we continue to engage with a range of users on their needs for projections. Ongoing user feedback on plans for the next release of projections, has focussed on us producing local authority-level projections which benefit from rebased population estimates following Census 2021. In combination, the NPPs and rebased data will provide the best basis for local authority-level projections where the NPPs feed into the SNPPs. We acknowledge that the census and COVID-19 have created a long period between SNPPs; we

now plan to revert to our biennial cycle of release. The current SNPP methodology requires both NPP data and a sufficiently long trend data for assumption setting. HHPs use SNPP data and are therefore dependent on the trend data that are used in the SNPPs.

National population projections only

Request to incorporate more detailed migration behaviour in our methodology

In addition to our principal assumption for international migration, we are planning to produce a range of variant projections, including alternative scenarios over the short-term (the first five to seven years of the projection).

Request to produce interim NPPs on an annual basis alongside the full NPP release on the current two-year cycle

Over the last few years, in response to user needs for further insights resulting from change to international migration to the UK, we have released further NPPs as variant (January 2023) and interim (January 2024) projections. The 2022-based NPPs are in line with our regular production cycle of releasing in the late part of the year. It is planned that the next NPP release will follow in 2026, reverting to the biennial cycle.

Our current view on the frequency of NPP releases is that producing projections biennially provides a balance between updating projections to account for the latest components of change data and emerging demographic trends, while also providing users with certainty about the length of intended use for each set of projections. It is possible that, as a result of the potential rapid obsolescence of annual projections, annual projections could provide challenges for users wishing to make long-term decisions.

Request to produce principal projections first and variant projections later

To aid understanding and provide the best range of data and comparisons in one publication, in recent releases we have generally published variant and principal projections together. We do not therefore plan to change from this for future projections.

Our current plans are to produce the following variants as part of our 2022-based national projections:

- principal
- high fertility
- low fertility
- high life expectancy
- low life expectancy
- high migration
- low migration
- high population
- low population
- zero net migration
- young age structure
- old age structure
- replacement fertility
- short-term migration variant (principal long-term assumption)
- short-term migration variant (high migration)
- short-term migration variant (low migration)

Subnational population projections only

Request to produce SNPPs for smaller geographic levels than local authority

We do not have component data available for smaller geographic areas of suitable quality for the development of projections at smaller geographic units. SNPPs would only be produced at these geographies by apportioning out local authority projections using lower-level population estimates. Furthermore, there is far higher uncertainty in population projections at smaller geographies. We are aiming to release SNPPs by the integrated care board geographies and to reflect recent local authority boundary changes.

Household projections only

Request for a methodological review of communal establishment data

In recognition of users' interest in this, we would be happy to carry out a review into the data we use. It is our understanding that, following the ONS consultation on the future of

population and migration statistics there are plans for further engagement with users to help understand needs for data on communal establishments in greater detail. More information on these plans will be available once the outcomes of the future of population and migration statistics consultation have been published. Broad user engagement will be taking place ahead of the recommendation being published on a variety of topics, including roundtables with academics, think-tanks and local government, engagements with other government departments and devolved authorities, and senior-level engagement with ministers.

Request for guidance on data to be used in the next projections

For the 2022-based projections, we are planning to incorporate three census points – 2001, 2011 and 2021. We will also provide guidance on the quality of the data used. In addition, we will cover any strengths and limitations both in our bulletin, and in our QMI, which will be published alongside the latest HHP data in our next release.

Request for local authority level insights and thematic analysis around different types of households.

Our next publication will include local authority insights and will also contain analysis of different types of household. However, it will not be possible to cover anything on community groups due to limited availability of input data for those groups.

Guidance on the appropriate use of household projections

We will include guidance on the appropriate use of HHPs in our next publication, including in the QMI which will accompany the projections.

Variant projections

Request for similar sets of variants in next projections

We plan to publish a range of variants of broadly the same type for the 2022-based projections, as we did for the most recent projections.

Request for high and low migration variants

We plan to release high and low migration variants in our NPP and SNPP publications and, in response to user needs, we plan to release a number of short-term migration variants in our

NPP release. We will release zero net international and internal migration variants across all three releases.

Request for a migration variant with alternative short-term adjustments to reflect various stay-rates among migrant types

We are aware of the latest research on stay rates among immigrants. As part of our NPP assumption setting and expert advisory panel process, we have reviewed this work again and assessing how we are taking account of the different types of migration which have been observed. Through our expert advisory panel process and assumptions research work we have considered the different types of international migration and future prospects for international migration. We plan for our short-term migration variants to reflect potential change in international migration which could be seen over the next five to seven years and be of assistance to our users.

Request for a mortality variant that reflects the rise in persistent ill-health issues among the population

For the 2022-based NPPs we will develop variant mortality assumptions with the assistance of an expert advisory panel and will be considering ill-health and healthy life expectancy as part of this.

Data formats

Request for data tables available in csv, API and other formats compatible with PowerBI and ArcGis.

This would be a major piece of work and it is not possible to implement release of data in these formats for the 2022-based cycle of projections. We will explore the potential to release data in other formats in future rounds of projections.

Request for unrounded data for persons aged 90+ in open data tables

We sum the population aged 90+ for reasons of accuracy and will need to review the potential to release data by single year of age and sex for this age group.

Request to include data tables with alternative age splits (0 to 17, 65 and over, 85 and over)

We will explore the potential to include these alternative age categories in our summary tables for the NPPs and will review the use of age categories in our other releases.

We would like to thank all respondents for their valuable feedback, which will continue to guide our work.

Getting in touch

We welcome feedback on the results of this engagement exercise. Please email projections@ons.gov.uk.

We plan to communicate updates through our Population Statistics newsletter, which you can subscribe to on our website. The ONS release calendar contains information on the next national population projections provisional release and will be updated accordingly.

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