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# Census Interaction Data and Access Arrangements

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Presentation at the Census Research User Conference  
RSS, London, 31 October, 2014

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UK Data Service  
Census Support

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# Presentation

- Introduction
- 2011 Census questions and types of census flow data
- Three levels of user access
- Flow tables available at different access levels
- WICID: Flow data delivery services via the UK Data Service
- Summary of ODS through visualisation
- Summary/Conclusions



# Introduction

- Census interaction data are counts that involve counts of flows between two geographies: origins and destinations
- They are one of the last census data products because counts have to be collated from the 3 national statistical agencies

Northern Ireland  
Statistics and  
Research  
Agency (NISRA)

National  
Records of  
Scotland  
(NRS)

Office for  
National  
Statistics  
(ONS)

Household Questionnaire Northern Ireland

Complete online  
www.census.gov.uk/ni  
Your personal internet access code is:

Return to:  
PREPST 2011 Census,  
Processing Centre

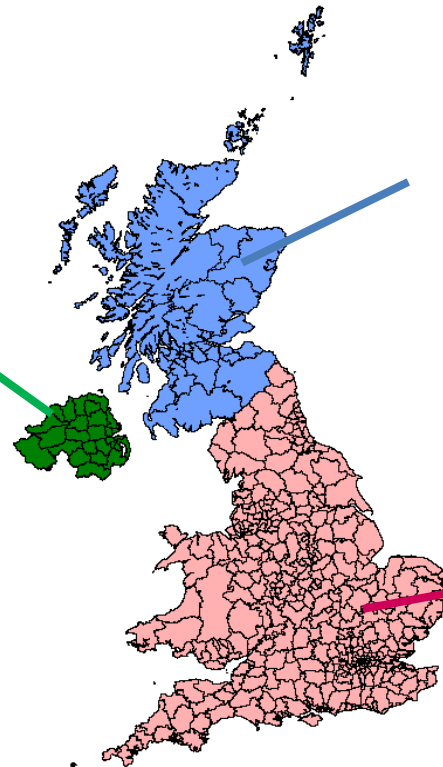
Why the Census Matters  
The census is used to help plan and fund services for your community - services like transport, education and health.

Declaration  
This questionnaire has been completed to the best of my knowledge and belief.

Where can you get help?  
www.census.gov.uk/ni  
Census helpline 0300 0201 120  
Text Relay 1800 1300 0201 120

Help is available in large print and Braille.

H4



Scotland's Census 2011  
27 March 2011

Why the census matters  
The census is the official count of every person and household in Scotland. It is used every 10 years to help plan our future public services.

Declaration  
I have filled in this questionnaire fully and accurately, to the best of my knowledge.

www.scotlandscensus.gov.uk  
Telephone 0300 123 1702  
Textphone 18001 0300 123 1703

Household Questionnaire England

Complete online  
www.census.gov.uk  
Your personal internet access code is:

Return to:  
PREPST 2011 Census,  
Processing Centre, UK

A message to everyone - act now  
Everyone should be included in the census - all people, households and overnight visitors.

Declaration  
This questionnaire has been completed to the best of my knowledge and belief.

Where can you get help?  
www.census.gov.uk  
Census helpline 0300 0201 121  
Text Relay 1800 1300 0201 120

Help is available in large print and Braille.

H1



# 2011 Census questions and types of census flow data

- ❑ 2011 Census Origin-Destination Statistics (ODS) available in four sets for the UK:
  - Migration tables – based to question 21: What was your usual address one year ago?
  - Student tables – a subset of migration tables for people who indicated that their address one year ago was a student / school address
  - Workplace tables – based on question 40: In your main job, what is the address of your workplace?
  - Second residence tables – based on questions 5 and 6: Do you stay at another address for more than 30 days a year? What is that address?
  
- Some tables only available for England and Wales
- First release of ODS tables on 25 July 2014 but no data for flows within or to Scotland in migration tables

21 One year ago, what was your usual address?  
If you had no usual address one year ago, state the address where you were staying

The address on the front of this questionnaire

Student term time/boarding school address in the UK, write in term time address below

Another address in the UK, write in below

OR  Outside the UK, write in country

Postcode

40 In your main job, what is the address of your workplace?  
If you work at or from home, on an offshore installation, or have no fixed workplace, tick one of the boxes below

If you report to a depot, write in the depot address

OR  Mainly work at or from home

Offshore installation

No fixed place

Postcode



# Progression of flow data sets

1981



Special Migration Statistics

Special Workplace Statistics

1991



SMS

SWS

2001



SMS

SWS

Special Travel Statistics

2011



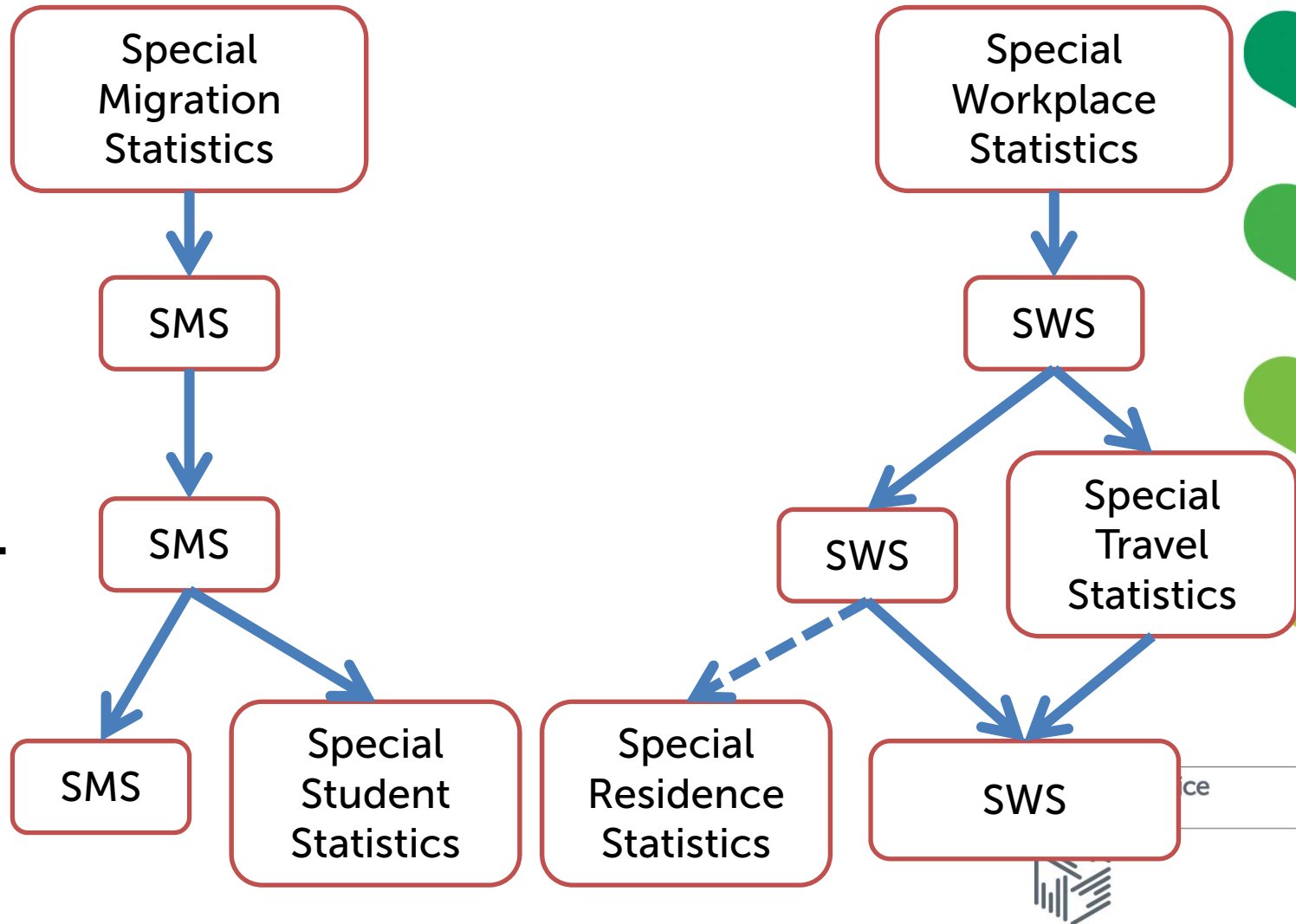
SMS

Special Student Statistics

Special Residence Statistics

SWS

ce



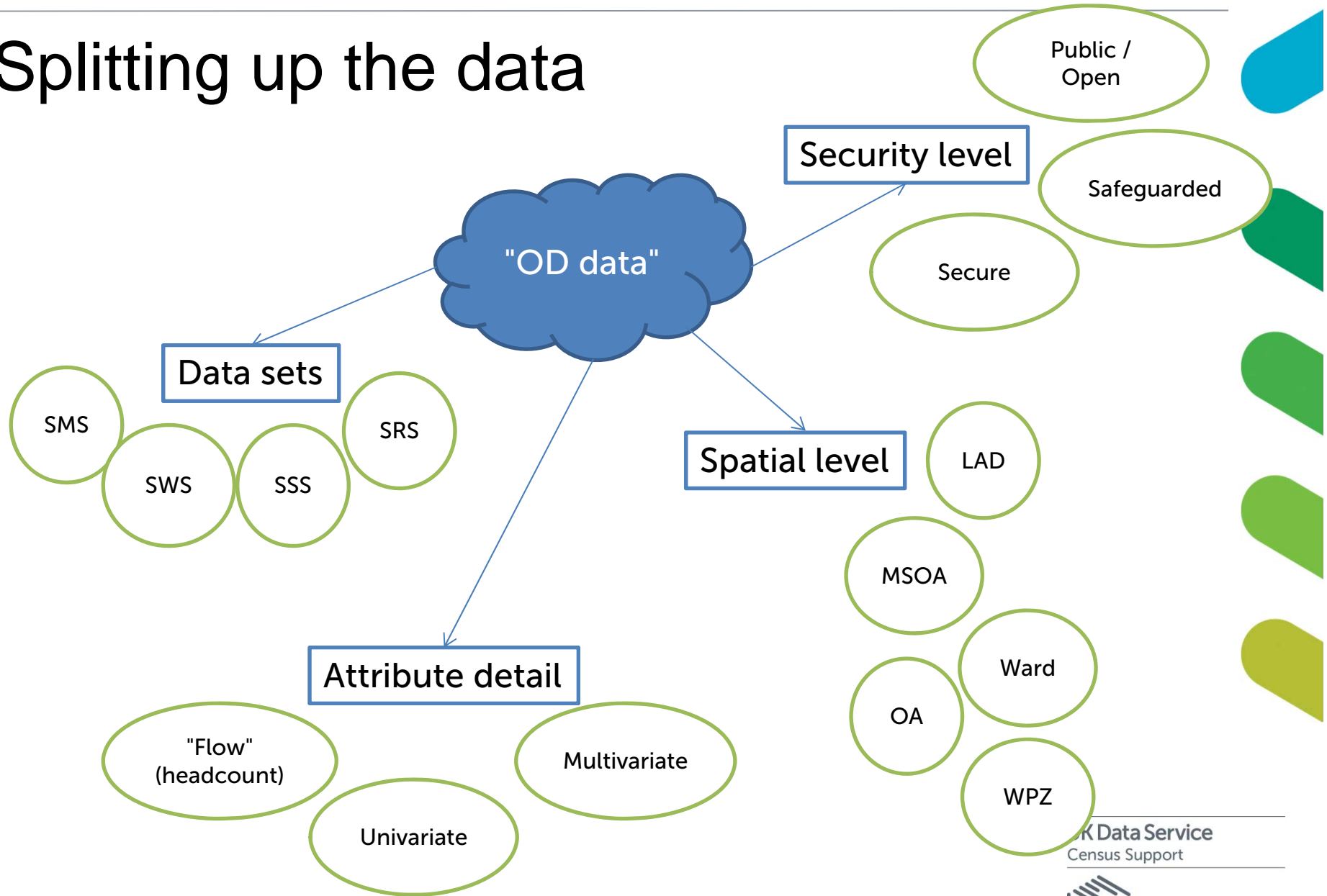
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# Three levels of user access

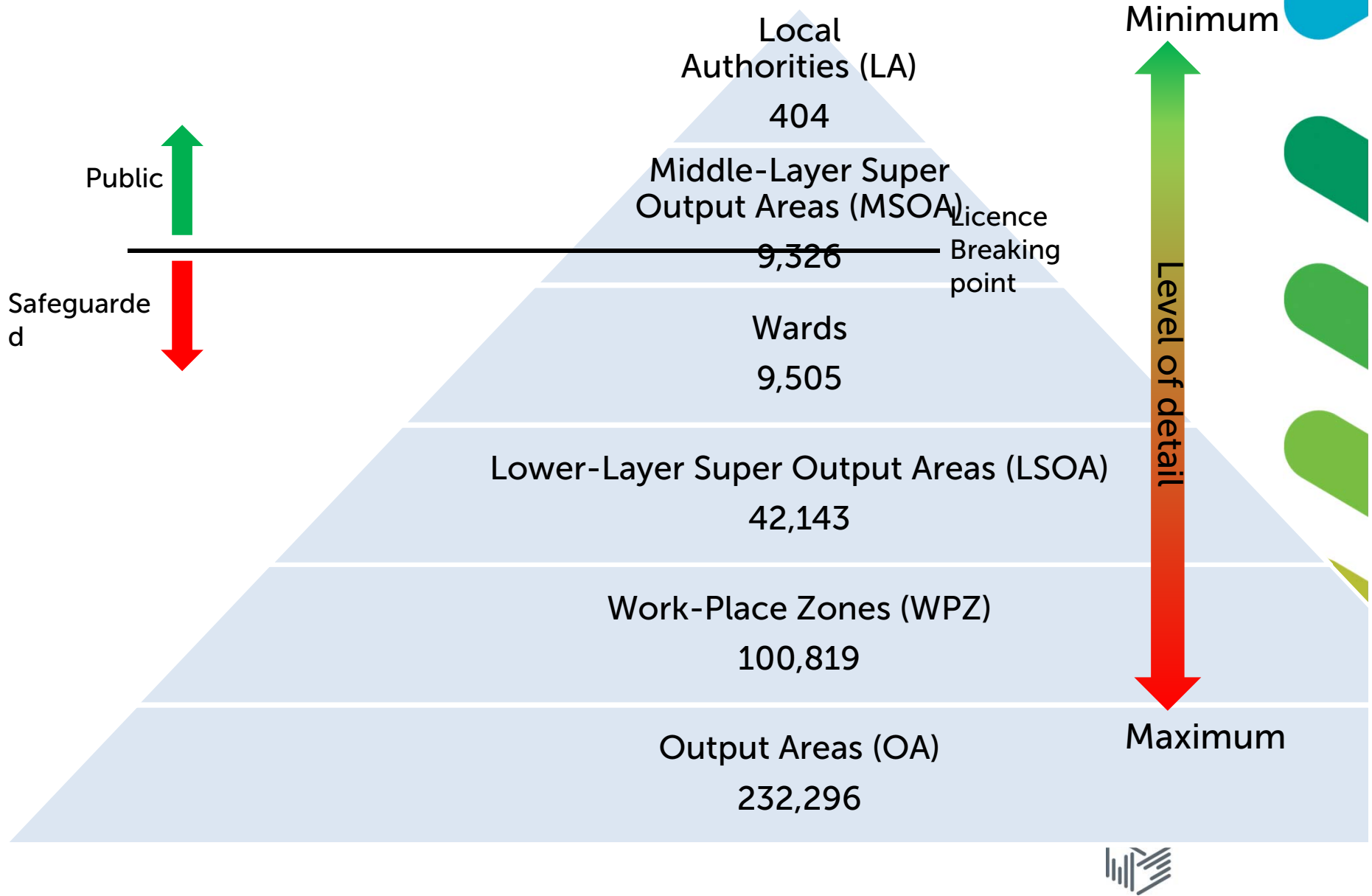
- Different tables available at one of three levels:
  - **Public:** available via ONS, nomisweb and UK Data Service-CS to any users via Open Government Licence (OGL) without the need to register or login to any system
  - **Safeguarded:** available via UKDS to members of academia, local and central government, NHS, and UK parliaments and assemblies via End User Licence (EUL) so need to register and login
  - **Secure:** available to approved researchers via Approved Researcher Licence (ARL) via the ONS Virtual Microdata Laboratory



# Splitting up the data



# Flow data sets geographies pyramid





# Flow (headcount) data sets: Security classification

Geography	SMS	SRS	SSS	SWS
LA to LA	Public	Public	Public	Public
Ward to Ward MSOA to MSOA	Safeguarded	Safeguarded	Safeguarded	Public
OA to OA OA to WPZ	Safeguarded	Safeguarded	Safeguarded	Safeguarded



# Univariate data sets: Security classification

Geography	SMS	SRS	SSS	SWS
LA-LA	Sex, Age: Public  Others: safeguarded	Sex, Age: Public  Others: safeguarded	Sex, Age: Public  Others: safeguarded	Sex, Age, Method of travel: Public  Others: safeguarded
Ward - Ward MSOA-MSOA	Sex, Age: Safeguarded  Others: Secure	Sex, Age: Safeguarded  Others: Secure	Sex, Age: Safeguarded  Others: Secure	Sex, Age, Method of travel: Public  Others: Safeguarded
OA to OA	All: Secure	All: Secure	All: Secure	All: Secure
OA to WPZ				



# Multivariate data sets: Security classification



Geography	SMS	SRS	SSS	SWS
LA-LA	Sex by Age: Public  Some vars: safeguarded  Other vars: Secure	Sex by Age: Public  Some vars: safeguarded  Other vars: Secure	Sex by Age: Public  Some vars: safeguarded  Other vars: Secure	Sex by Age: Public  Some vars: safeguarded  Other vars: Secure
Ward - Ward MSOA-MSOA	Sex by Age: Safeguarded  Others: Secure	Sex by Age: Safeguarded  Others: Secure	Sex by Age: Safeguarded  Others: Secure	Sex by Age: Public  Some vars: safeguarded  Other vars: Secure
OA to OA  OA to WPZ	All: Secure	All: Secure	All: Secure	All: Secure



# UK Tables: Origin-Destination Migration Flows

## 9 tables (but no flows within or to Scotland)

Level	Variable	Variable detail	Geography level	Count
Public	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged LA/LA	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex (59 countries of origin)	Merged LA/LA	18
	International migrants	(184 countries of origin)	Merged LA/LA	1
Safeguarded	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged Ward/Ward	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	Merged Ward/Ward	18
	Internal migrants		OA/SA	1
	International migrants		OA/SA	1
Secure	Internal migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	OA/SA	18
	International migrants	by age (1-15, 16-49, 50-64, 65-74, 75+) by sex	OA/SA	18



# UK Tables: Origin-Destination Commuting from Usual Residence to Workplace Flows 15 tables

Level	Variable	Variable detail	Geography level	Count
Public	WU01UK	Flow by sex	Merged LA/LA	3
	WU01UK	Flow by sex	MSOA/SOA/Intermediate Zone	3
	WU02UK	Flow by age (16-24, 25-34, 35-49, 50-64, 65-74, 75+)	Merged LA/LA	7
	WU02UK	Flow by age (16-24, 25-34, 35-49, 50-64, 65-74, 75+)	MSOA/SOA/Intermediate Zone	7
	WU03UK	Flow by method of travel to work	Merged LA/LA	12
	WU03UK	Flow by method of travel to work	MSOA/SOA/Intermediate Zone	12
Safequarded	WF01AUK	Flow (excluding those with quasi-workplaces)	OA/SOA/WPZ	1
	WF01BUK	Flow	OA/SOA	1
	WF02UK	Flow (with 'outside UK' collapsed)	OA/SOA/WPZ	1
Secure	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	Merged LA/LA level	144
	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	MSOA/SOA/Intermediate Zone	144
	WM03AUK	Flow by method of travel to work by sex by student employment status (excluding those with quasi-workplaces)	OA/SOA	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	Merged LA/LA	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	MSOA/SOA/Intermediate Zone	144
	WM03BUK	Flow by method of travel to work by sex by student employment status	OA/SOA	144



# UK Tables: Students 1 table

Level	Variable	Variable detail	Geography level	Count
Public	Usual residents aged 16 and over who moved from a student term-time/boarding school address in the year before the census	by age (16-17, 18-19, 20-21, 22-24, 25+) by sex by student status (Full-time, Not full-time)	Merged LA/LA	54



# England and Wales Tables: Second residence

## 6 tables

Level	Variable	Variable detail	Geography level	Count
Public	RF02AEW	Location of second address and place of work (with 'second address outside UK' collapsed) of those aged 16+ in employment	Merged LA	1
	RF03EW	Location of usual residence and place of work of those aged 16+ in employment with work related second address	Merged LA	1
	RF04AEW	Location of where people live when working and place of work (with 'second address outside UK' collapsed) of those aged 16+ in employment	Merged LA	1
	RF05EW	Location of usual residence and second address (Dependent children where second address is another parent or guardian)	Merged LA	1
	RU02AEW	Location of usual residence and second address by sex (with 'second residence outside UK' collapsed)	Merged LA	3
	RU03AEW	Location of usual residence and second address by age (All, 0-15, 16-49, 50-64, 65-74, 75+) (with 'second residence outside UK' collapsed)	Merged LA	6

# Geographies

Geography	Migration	Workplace	Student	Second residence
Merged LA/LA	404 areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	404 areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	404 areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland	404 areas: 346 Merged LAs in England & Wales, 32 LAs in Scotland and 26 LAs in Northern Ireland
Merged Ward/Ward	9,481 areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland		9,481 areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland	9,481 areas: 8,546 Merged Wards in England and Wales, 353 Wards in Scotland and 582 Wards in Northern Ireland *
MSOA/SOA/Intermediate Area		9,326 areas: 7,201 MSOAs in England and Wales, 1,235 Intermediate Zones in Scotland and 890 SOAs in Northern Ireland		
OA/SA	232,296 areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	232,296 areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	232,296 areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland and 4,537 Small Areas in Northern Ireland	227,759 areas: 181,408 Output Areas in England and Wales, 46,351 Output Areas in Scotland
WZ		53,578 Workplace Zones in England and Wales		

\* Second residence tables are for people enumerated in E&W but information down to ward level will be available if their second residence is in Northern Ireland or Scotland





# Access to the 2011 Flow Data

Type	Channel
<b>Public</b>	<b>Disseminated via NOMIS (and WICID) under Open Government Licence in late July</b> <b>Also from ONS on optical media</b>
<b>Safeguarded</b>	<b>Disseminated via an End User Licence</b>
<b>Secure</b>	<b>Produced for July but dissemination is dependent on a VML solution. ONS has constructed a VML at Titchfield as an interim measure from November 2014.</b>

## Timetable for further releases on the Flow Data:

November 2014: Remaining Secure files

December 2014: Remaining Safeguarded files



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# Release priorities and batches

- **Priority 1: UK SWS**  
Batch 1 (37 Tables) and Batch 2 (54 Tables):
- **Priority 2: UK SMS**  
Batch 1 (52 Tables) and Batch 2 (54 Tables)
- **Priority 3: UK SSS**  
Batch 1 (26 Tables)
- **Priority 4: EW SWS**  
Batch 1 (44 Tables) and Batch 2 (52 Tables)
- **Priority 5: EW SMS**  
Batch 1 (32 Tables) and Batch 2 (32 Tables)
- **Priority 6: EW SSS**  
Batch 1 (8 Tables)
- **Priority 7: EW SRS**  
Batch 1 (33 Tables), Batch 2 (44 Tables) and Batch 3 (32 Tables)



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## Aggregate statistics for UK Migration

- Counts of Inflows, outflows and overall net migration by area disaggregated by age, ethnic group, economic activity, etc.
- Geography down to MSOA and Merged ward level and to OA level with less detail
- Available through *InFuse*



# UK Data Service website: <http://ukdataservice.ac.uk/>

UK Data Service



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Get data

Use data

Manage data

Deposit data

News and Events



## Welcome to the UK Data Service

Your resource for quality social research data

A unified point of access to data from ESDS, Census Programme, Secure Data Service and others



START

This website will be offline between 07:00 and 09:00 on Tuesday 18 June 2013 due to planned enhancements.

LOGIN / REGISTER

DISCOVER UK DATA SERVICE

Search and browse our data collection, support guides, case studies and related publications.

GO

Data Website

### LATEST TWEETS

UKDataService See our presentations from IASSIST 2013 <http://t.co/2ovz9rhaAL> ... #iassist2013

UKDataService RT @TheSRAOrg: Do we need another UK Census? Come to our Summer Event on 26 June and hear the debate: <http://t.co/EswCDISL9Z>

UKDataService Join our workshop on 1958 National Child Development Study (NCDS) and the 1970

### LATEST NEWS



Bookings now open for workshop on NCDS and BCS70

Book now for workshop on understanding and accessing 2011 Census aggregate data

### GET TO KNOW US



Check it out! There are now several ways to get to know our service

[Videos](#) - hear from data professionals including the Office for National Statistics and the Royal Statistical Society

### QUICK ACCESS TO

Key data

Census Support

Information for new users

Frequently asked questions



# UKDS Census Support website: <http://census.ukdataservice.ac.uk/>

UK Data Service  
Census Support



About Census Support

Get census data

Use census data

Census news and events

## Census Support

**Who we are**

We provide access to and user support for 1971, 1981, 1991, 2001 and 2011 UK census data  
[Read more](#)

START

This website will be offline between 07:00 and 09:00 on Tuesday 18 June 2013 due to planned enhancements.

LOGIN / REGISTER

DISCOVER UK DATA SERVICE

Search and browse the UK Data Service Census Support data collection:

GO

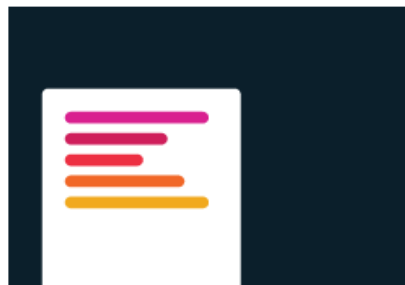
Census Data  Website

Want to search wider? [Search the whole of the UK Data Service](#)

LATEST TWEETS

LATEST NEWS

UK DATA SERVICE CENSUS SUPPORT



Book now for workshop on understanding and accessing 2011 Census aggregate data

Bookings now open for 2011 Census update webinar



We are the UK Data Service Census Support. This site replaces the old ESRC Census Portal and provides access to a range of census-related resources.

We do not hold the census longitudinal

QUICK ACCESS TO

UK Data Service

Aggregate data

Flow data

Microdata

Boundary data

e

# Accessing Flow Data through WICID

UK Data Service  
Census Support



## Flow data links

- Flow data home
- Information and Publications
- Available Data
- Contact us
- News
- FAQs
- Credits

## Support

- Accessibility statement
- Feedback
- Help



## Census Support: Flow Data

Flow Data is part of UK Data Service

Census flow data (also referred to as - moves such as migration to a new

Flow data differ from other Census d

### Getting the data

There are three principal ways of gett

WICID - the flexible query build

WICID Downloads - flow data

WICID Flow Summaries - a qu

### New data for un-registered users

Un-registered users and intereste  
- for more information about the d

### About the data

Currently migration and commuting data from the 1981, 1991 and 2001 Censuses are available through WICID. Soon additional non-census datasets will also be available from the system.

[Detailed information](#) about our data sets  
[Tutorial information](#) is available describing how to use the interface

## Getting the data

There are three principal ways of getting to the data. In order to use most of the data

**WICID - the flexible query builder**

**WICID Downloads - flow data tables ready to be downloaded**



- Flow data links
- Flow data home
- Information and Publications
- Available Data
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- Feedback
- Help



## FlowData downloads page

In this page you can find various files to download. Click on the category titles to expand the available files.

2011 Census					
Public tables from 2011 Census					
				Release date	2014-07-25 09:30:00
				Publisher	ONS
				Release	OD 1
Table name	Table title	Table population	Geographic coverage	Geographic breakdown	Download
MF02EW	Origin and destination of international migrants (expanded country origin)	All usual residents who were living outside the UK one year ago	England and Wales	2011 Census Merged local authority districts	
MF02NI	Origin and destination of international migrants (expanded country origin)	All usual residents who were living outside the UK one year ago	Northern Ireland	Local government district	
MM01CEW_all	Origin and destination of migrants by age (broad grouped) by sex	All usual residents who were living at a different address one year ago	England and Wales	2011 Census Merged local authority districts	
MM01CEW_non_UK	Origin and destination of international migrants by age (broad grouped) by sex	All usual residents who were living outside the UK one year ago	England and Wales	2011 Census Merged local authority districts	
MM01CNI_all	Origin and destination of migrants by age (broad	All usual residents who were living at a different	Northern	Local government district	

WICID Data Geography Finalise Run Output

Data Status: 8 data items currently selected [Unselect all](#)

Select individual cells or totals and then click 'Add selected cells'. Checking the checkbox next to row or column labels will lead to all cells in that row or column being selected

**Ethnic group by sex (GB destinations) (2001 SMS Level 1 Table 3)**

[Add Selected Cells](#) [Select All](#) [Clear All](#)

	<input type="checkbox"/> Total	<input type="checkbox"/> Male	<input type="checkbox"/> Female
<input type="checkbox"/> Total	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
<input type="checkbox"/> White	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<input type="checkbox"/> Indian	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
<input type="checkbox"/> Pakistani and other South Asian	<input type="checkbox"/> 10	<input type="checkbox"/> 11	<input type="checkbox"/> 12
<input type="checkbox"/> Chinese	<input type="checkbox"/> 13	<input type="checkbox"/> 14	<input type="checkbox"/> 15
<input type="checkbox"/> Caribbean, African, Black British and other Black	<input type="checkbox"/> 16	<input type="checkbox"/> 17	<input type="checkbox"/> 18
<input type="checkbox"/> Mixed	<input type="checkbox"/> 19	<input type="checkbox"/> 20	<input type="checkbox"/> 21
<input type="checkbox"/> Other	<input type="checkbox"/> 22	<input type="checkbox"/> 23	<input type="checkbox"/> 24

### Alternative options

One or more data items correctly selected

- You have not yet selected any origins
- You have not yet selected any destinations
- You have successfully selected some data

Service  
support



# WICID: Data selection page



Status: 8 data items currently selected  
[\[Unselect all\]](#)

Select individual cells or totals and then click "Add selected cells". Checking the checkbox next to row or column labels will lead to all cells in that row or column being selected

## Ethnic group by sex (GB destinations) (2001 SMS Level 1 Table 3)

[Add Selected Cells](#) [Select All](#) [Clear All](#)

	<input type="checkbox"/> Total	<input type="checkbox"/> Male	<input type="checkbox"/> Female
<input type="checkbox"/> Total	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
<input type="checkbox"/> White	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<input type="checkbox"/> Indian	<input checked="" type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
<input type="checkbox"/> Pakistani and other South Asian	<input checked="" type="checkbox"/> 10	<input type="checkbox"/> 11	<input type="checkbox"/> 12
<input type="checkbox"/> Chinese	<input checked="" type="checkbox"/> 13	<input type="checkbox"/> 14	<input type="checkbox"/> 15
<input type="checkbox"/> Caribbean, African, Black British and other Black	<input checked="" type="checkbox"/> 16	<input type="checkbox"/> 17	<input type="checkbox"/> 18
<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> 19	<input type="checkbox"/> 20	<input type="checkbox"/> 21
<input type="checkbox"/> Other	<input checked="" type="checkbox"/> 22	<input type="checkbox"/> 23	<input type="checkbox"/> 24

## Alternative options

### One or more data items correctly selected

You have not yet selected any origins  
You have not yet selected any destinations  
You have successfully selected some data

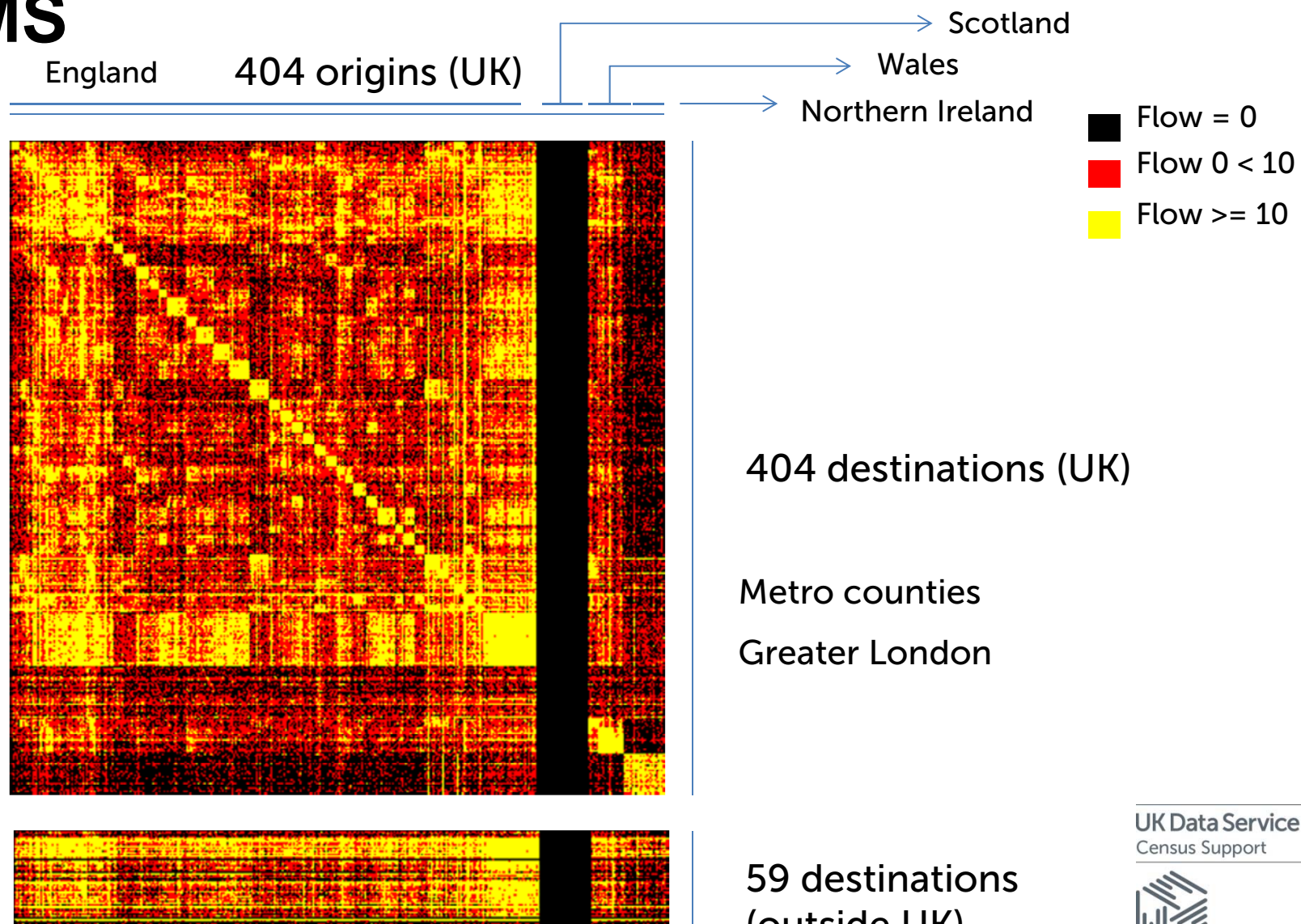
User has begun to build a query by selecting counts of persons by each of the different ethnic groups .....

... and will go on to select origins and destinations





# Summary of ODS through visualisation: SMS

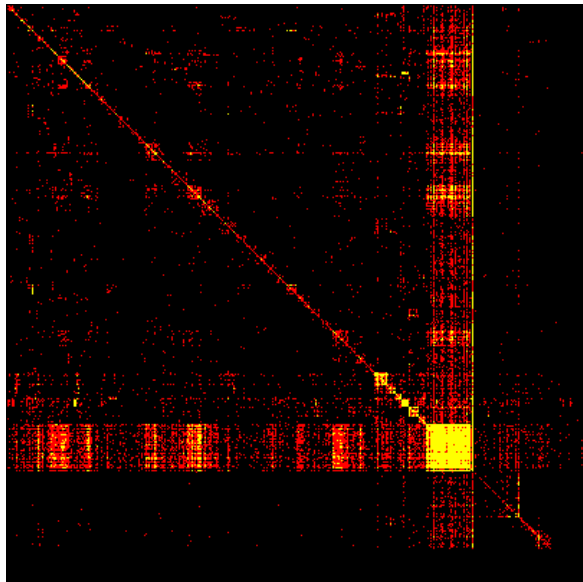


UK Data Service  
Census Support

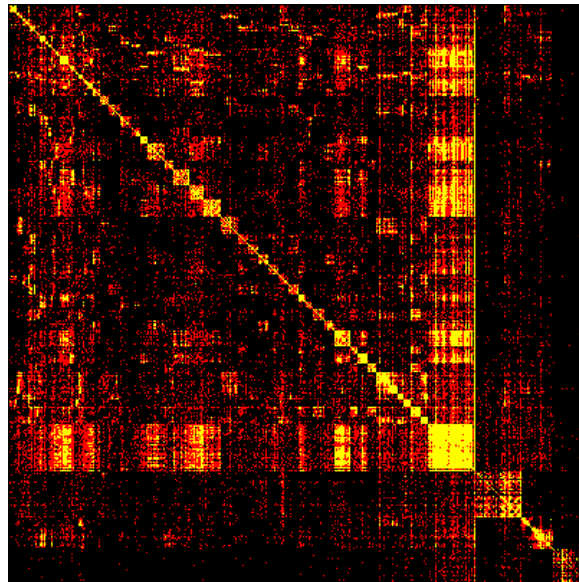




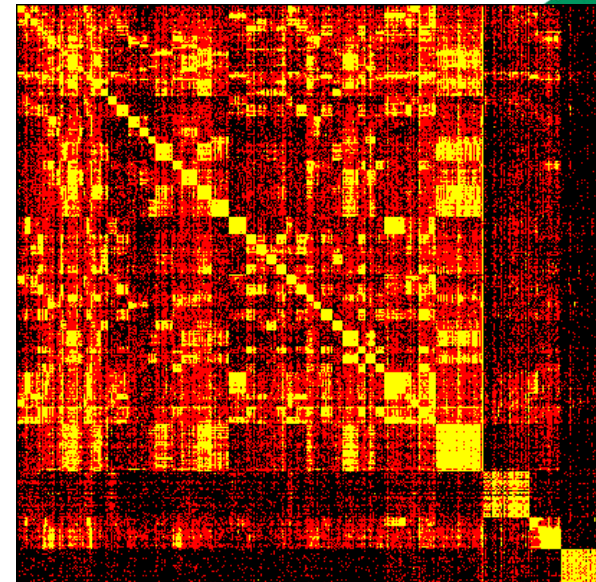
# Summarising 2011 SWS: transport modes



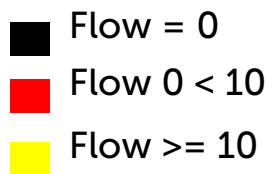
Tube / light train etc



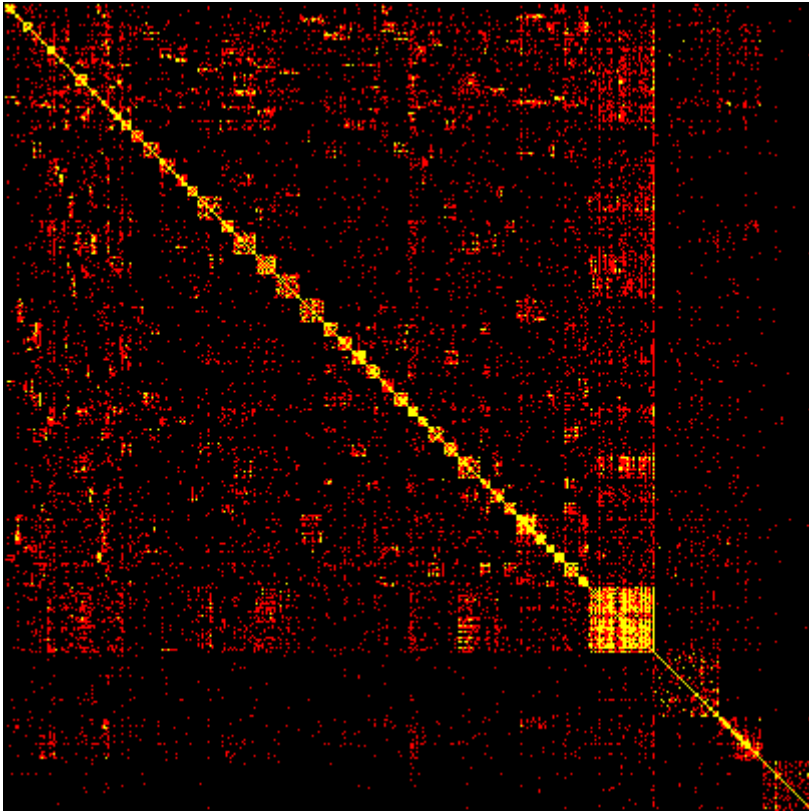
Train



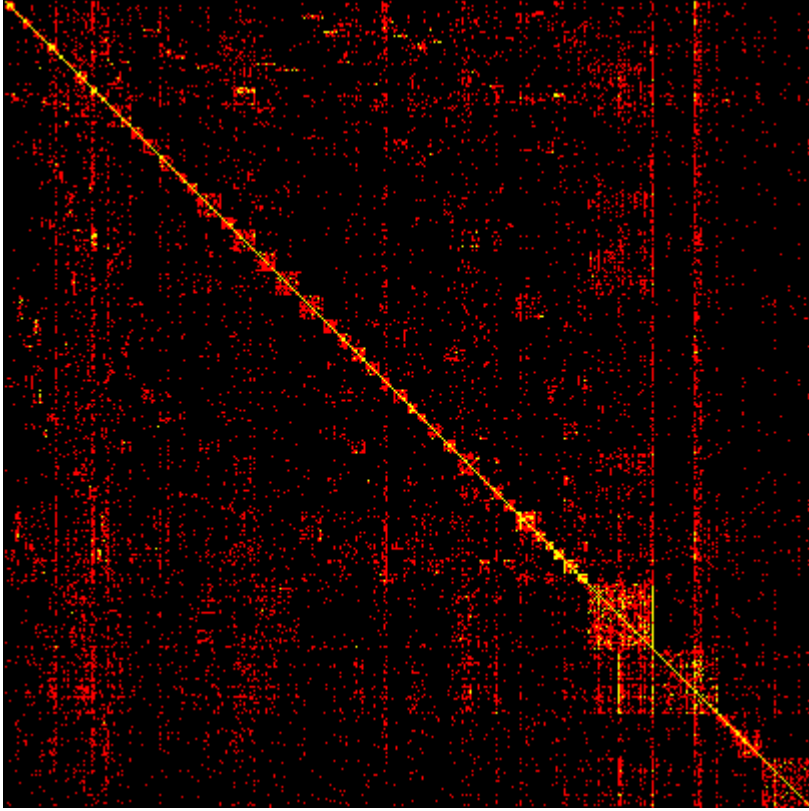
Car driver



# Summarising 2011 SWS: transport modes



Bicycle



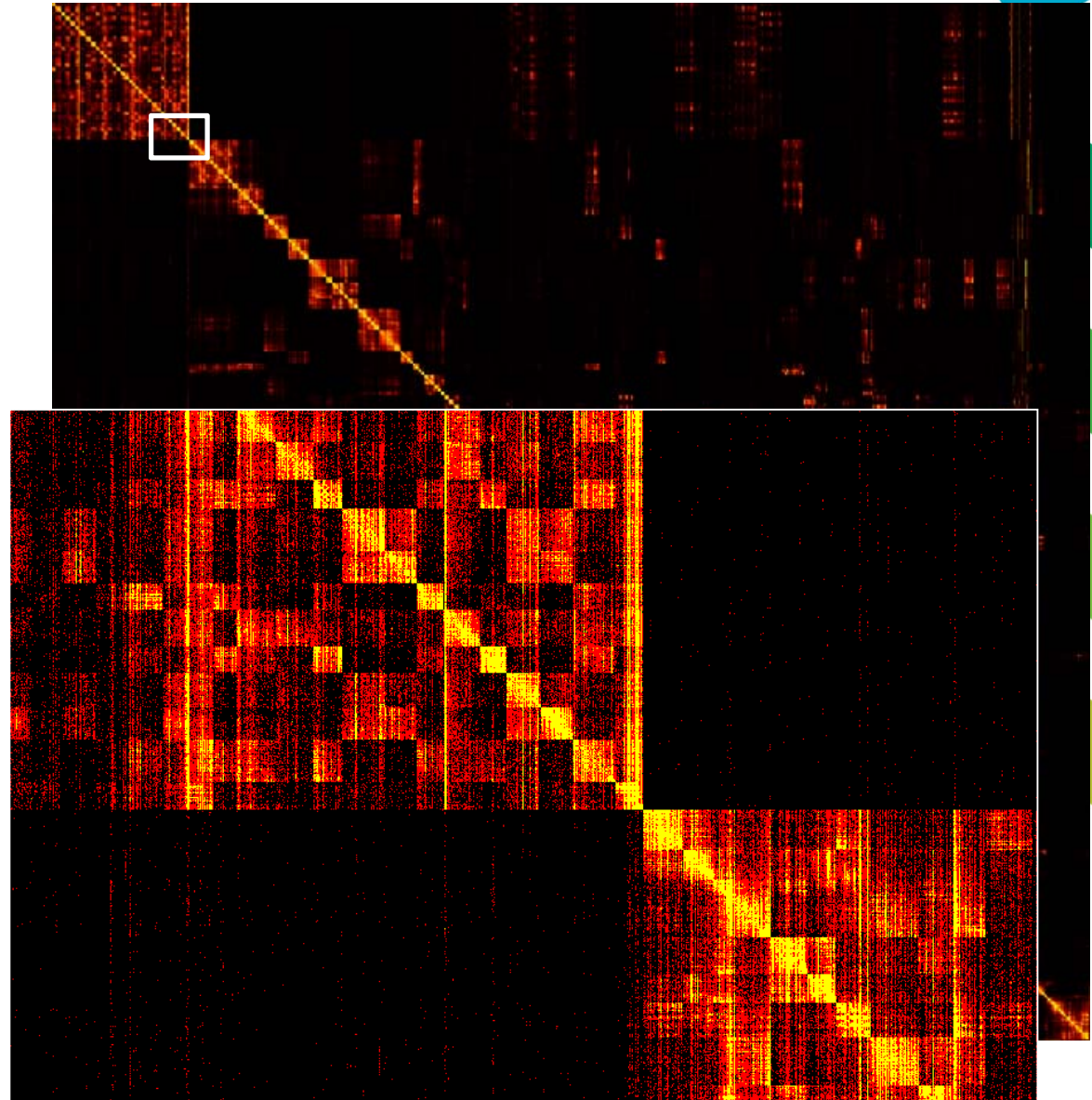
Other

- Flow = 0
- Flow 0 < 10
- Flow >= 10



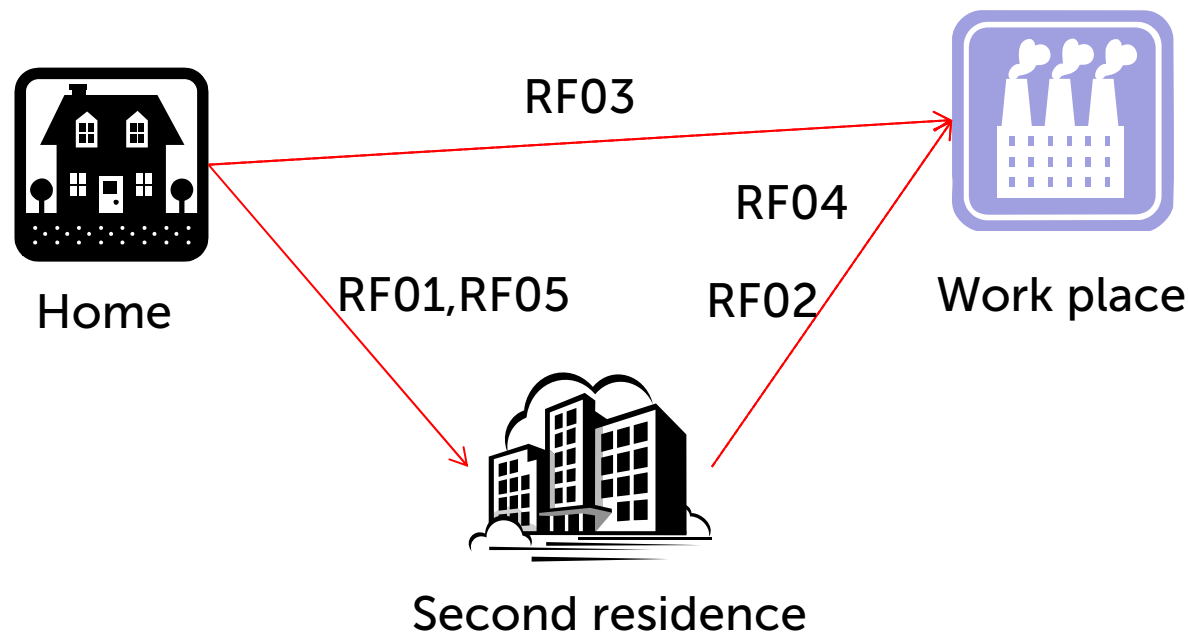
# 2011 SWS: MSOA level data (England and Wales)

- Order of MSOAs does not reflect order of LADs
- MSOA data highlights sparsity of matrices



# Second residence data

- Multiple locations and relationships identified

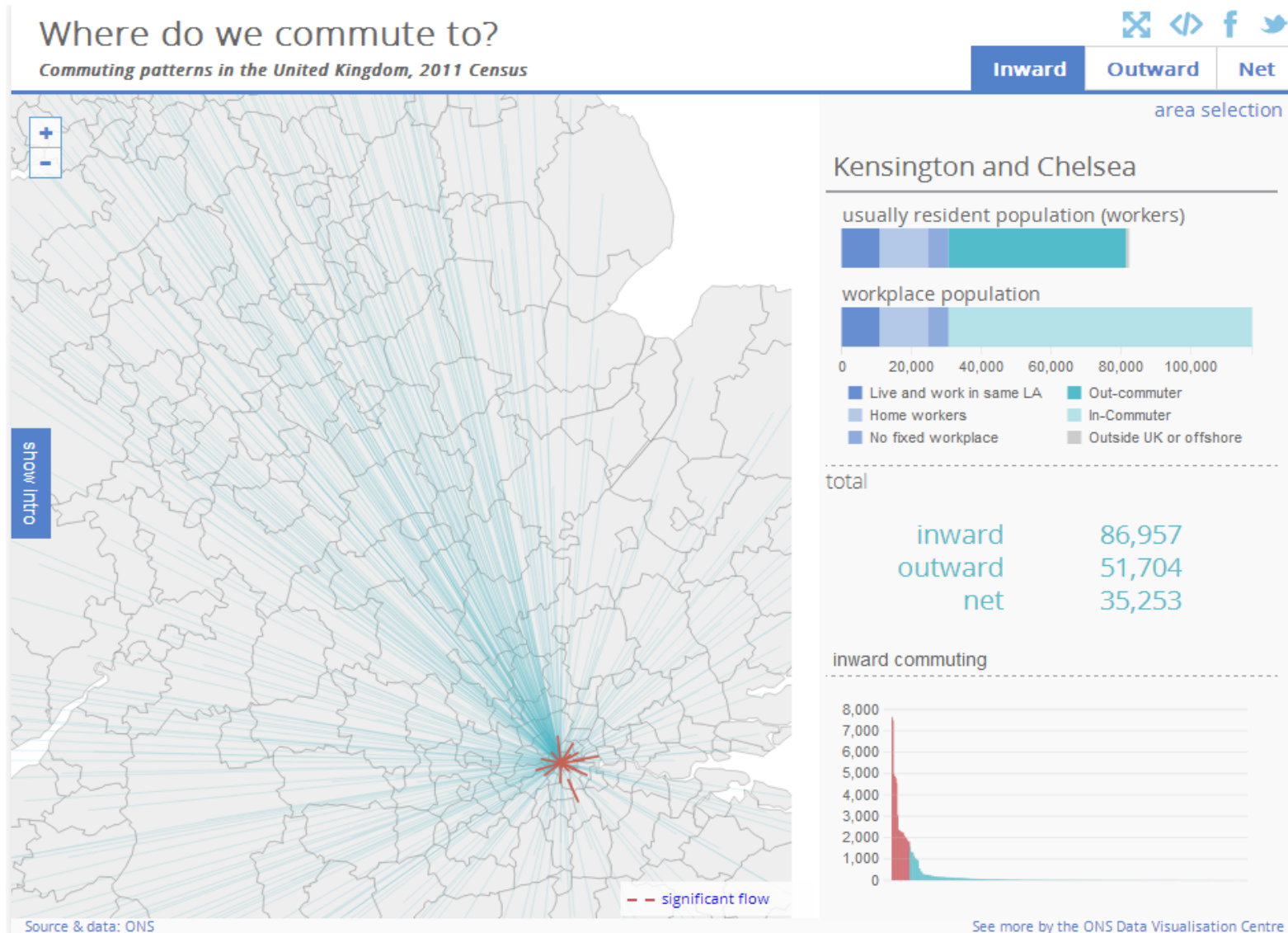


RF01: All persons  
RF05: Dependent children  
RF02,03,04: Workers



# Visualisation tools for commuting patterns

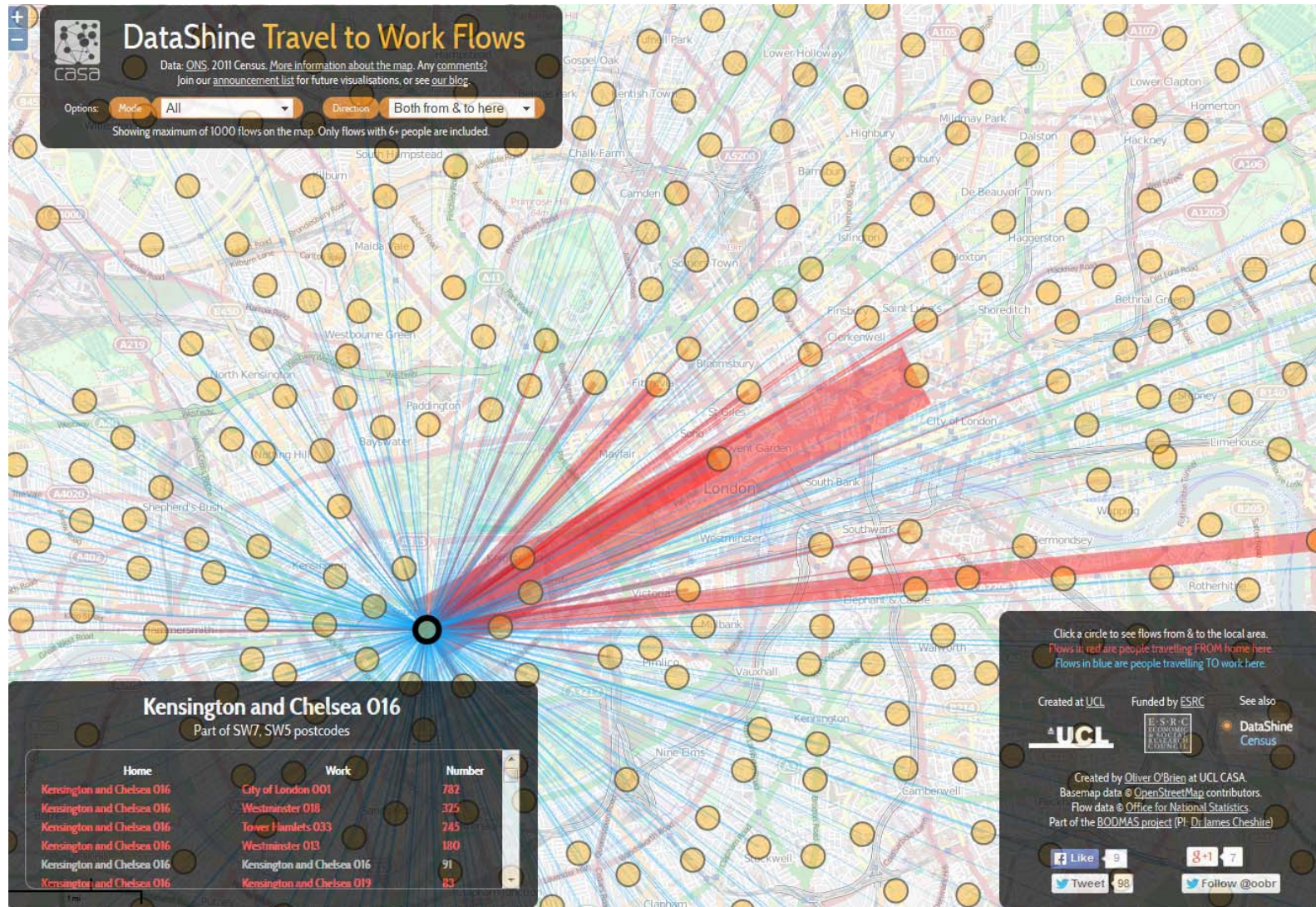
## ONS' Where do we commute to?



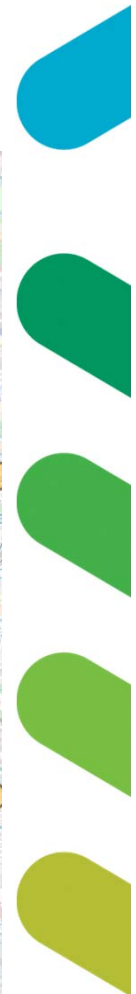
<http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc193/index.html>



# DataShine Travel to Work Flows



<http://commute.datashine.org.uk>



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# Summary/Conclusions

- ODS continued to evolve from previous censuses – more extensive than ever before and not adjusted using SCAM as in 2001
- BUT.... new security classification (public, safeguarded, secure) will mean that detailed tables (for smallest areas in most cases) will only be available from a secure setting
- Remaining tables of safeguarded and secure data will be released by the end of 2014
- All the public and safeguarded data will be available through WICID via the UK Data Service- census Support web site



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## Link to ODS pages in ONS prospectus

- <http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-prospectus/release-plans-for-2011-census-statistics/subsequent-releases-of-specialist-products/flow-data/index.html>

## Link to WICID on UK Data Service Census Support

- <https://wicid.ukdataservice.ac.uk/cider/wicid/query.php>





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# Acknowledgements

- The UK Data Service: Census Support is funded by the Economic and Social Research Council with contributions from
- the University of Essex,
- the University of Leeds,
- the University of Manchester,
- the University of Edinburgh and
- University College London



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# Questions

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UK Data Service  
Census Support

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