



Government  
Actuary's  
Department

# Local Government Pension Scheme (LGPS)

## Actuarial valuation as at 31 March 2016 Report on Membership data

8 July 2020

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## 1 Introduction

- 1.1 This report is addressed to the Ministry of Housing, Communities and Local Government (MHCLG). It is also being made available to the Local Government Pension Scheme ('LGPS' or 'the Scheme') Scheme Advisory Board (SAB) as part of the consultation process relating to the actuarial valuation of the LGPS which is being carried out as at 31 March 2016. It is expected the membership data which is described in this report will also be used for the Scheme's cost control process described in regulation 116 of the Local Government Pension Scheme Regulations 2013.
- 1.2 Membership data for the Scheme is required for the actuarial valuation of the Scheme as at 31 March 2016, carried out in accordance with HM Treasury's Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 as amended ('HMT Directions').
- 1.3 The membership data is used for the following:
- > To calculate valuation results<sup>1</sup> (all valuation data)
  - > To assess the initial cost cap fund (membership data as at 31 March 2014)
  - > To assess elements of the Scheme's demographic experience in order to recommend assumptions for the valuation (movements data 1 April 2013 to 31 March 2016).
- 1.4 The results of the valuation critically depend on the quality and correctness of the data used. The data provided was not fully correct and complete for all members and approximations have been made to enable valuation calculations to be undertaken.
- 1.5 The purposes of this report are:
- > to discuss and summarise the membership data provided, and any adjustments made to the data;
  - > to enable users of the valuation report to understand the underlying membership data used in the valuation and any issues relating to it; particularly those issues that may impact on the valuation results; and
  - > to discuss and summarise the movements data provided and to be used to inform decisions around scheme specific assumptions to be used for the valuation.

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<sup>1</sup> Actual employer contributions will be paid in accordance with each administering authority's rates and adjustments certificate issued under Regulation 62 of the Local Government Pension Scheme Regulations 2013.



- 1.6 The 2016 valuation is currently paused, following the Court of Appeal judgment that found the transition protections provided to firefighters and members of the Judiciary give rise to unlawful age discrimination. Government has confirmed that they expect that the difference in treatment will also need to be remedied for LGPS, and other public service pension schemes<sup>2</sup>. However the form of remedy is unclear at this stage.
- 1.7 All member data and supplementary accounting information provided and discussed in this report were supplied by the administering authorities and their actuarial advisors. The data requested by GAD was intended to be not materially different from the data that the respective local authority funds would be using for their own local funding actuarial valuations as at 31 March 2016. GAD is grateful to the administering authorities and their actuarial advisors for the prompt provision of data, and their responses to follow-up queries.
- 1.8 In preparing this report, GAD has relied on the completeness and accuracy of the data and other information supplied by or on behalf of administering authorities, as described in this report. Our checks on this data and information are limited to those described in this report, including any checks on the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied and do not by themselves confirm or guarantee the overall quality or accuracy of the data. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.
- 1.9 Summaries of the membership and movements data used for the valuation are provided in section 2 of this report with further information in Appendices A and B of this report respectively.
- 1.10 We have concluded the data provided is adequate for the purposes set out in 1.3 above, after consultation with MHCLG. However, there are some risks and uncertainties resulting from some missing data, which we have set out in this report.
- 1.11 Throughout this report the totals given for summed data may not be exactly the same as the sum of the components shown due to rounding effects.
- 1.12 We are content for the Secretary of State for Housing, Communities and Local Government to release this report to third parties, provided that:
- > it is released in full;
  - > the advice is not quoted selectively or partially;
  - > GAD is identified as the source of the report, and;
  - > GAD is notified of such release.

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<sup>2</sup> <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2019-07-15/HCWS1725/>



- 1.13 Third parties whose interests may differ from those of the Secretary of State for Housing, Communities and Local Government should be encouraged to seek their own actuarial advice where appropriate. GAD has no liability to any person or third party for any act or omission taken, either in whole or in part, on the basis of this report.
- 1.14 This work has been carried out in accordance with the applicable Technical Actuarial Standards: TAS 100 and TAS 300 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.

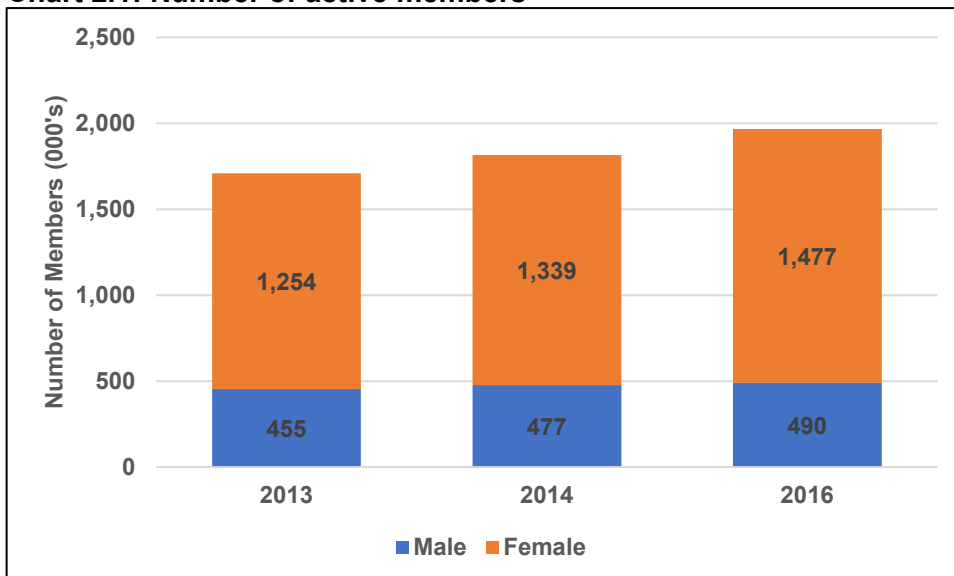


## 2 Summary of data used for the valuation

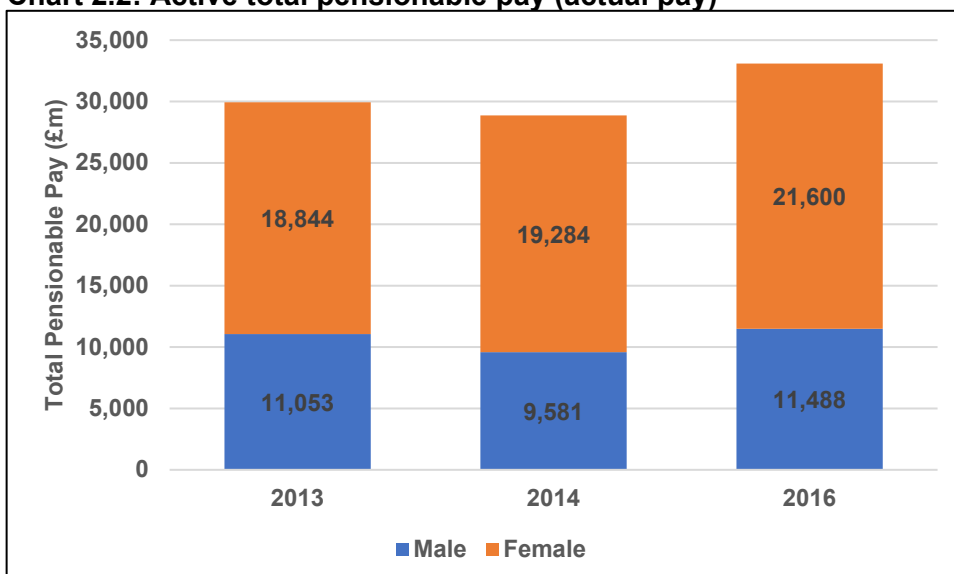
### Membership data at 31 March 2016

- 2.1 The membership data to be used for the purposes of the 2016 valuation is summarised below together with comparative data as used for the 2013 valuation. The summaries below reflect the membership allowed for in the valuation calculations which is based on the data supplied with adjustments as explained further in this report. Detailed tables are set out in Appendix A. The 2013 figures in these charts include adjustments that were made to scale up the 2013 membership data for missing funds.

**Chart 2.1: Number of active members**

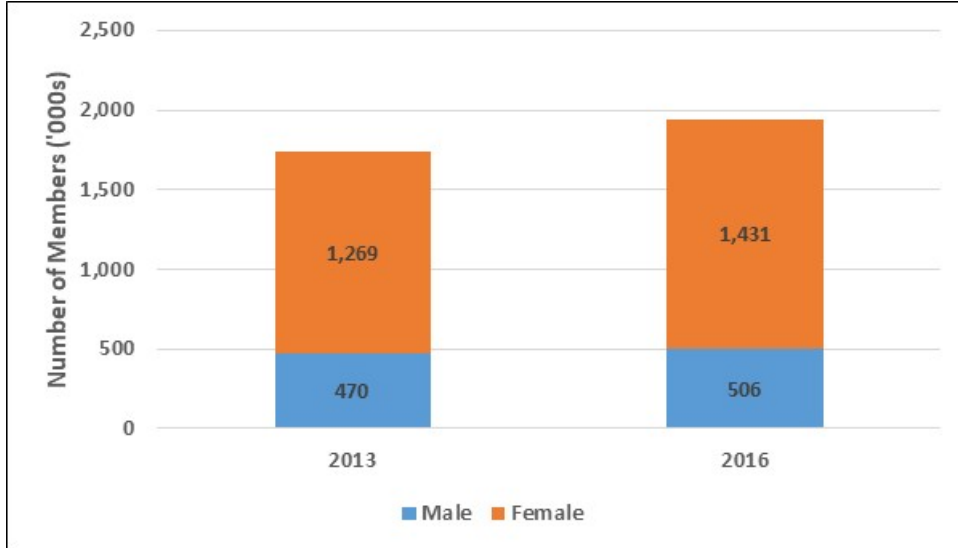


**Chart 2.2: Active total pensionable pay (actual pay)**

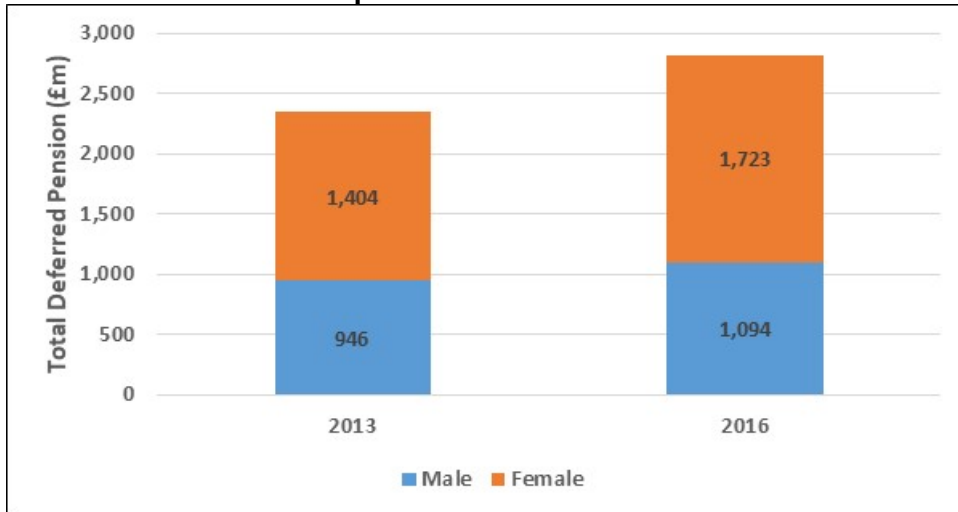




**Chart 2.3: Number of deferred members**

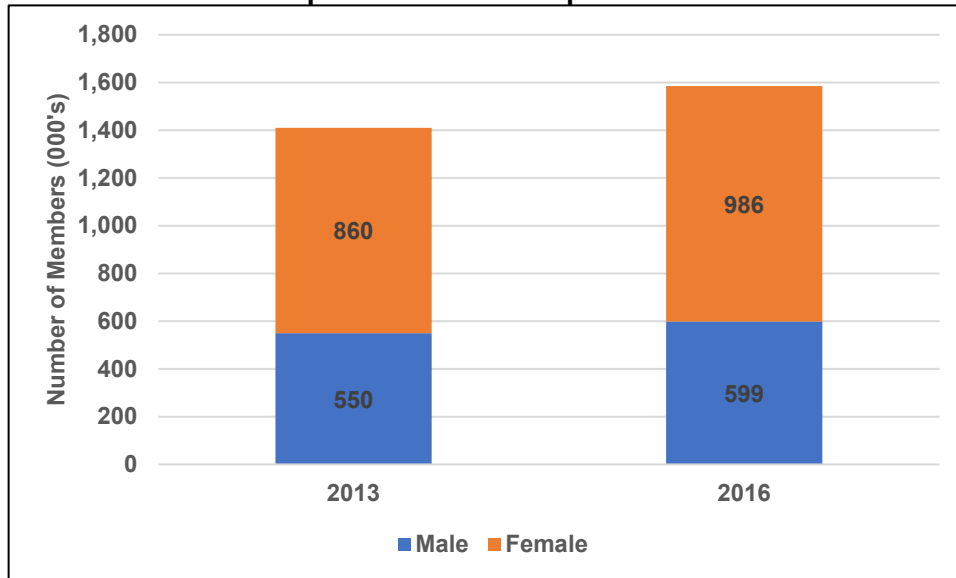


**Chart 2.4: Total deferred pension**

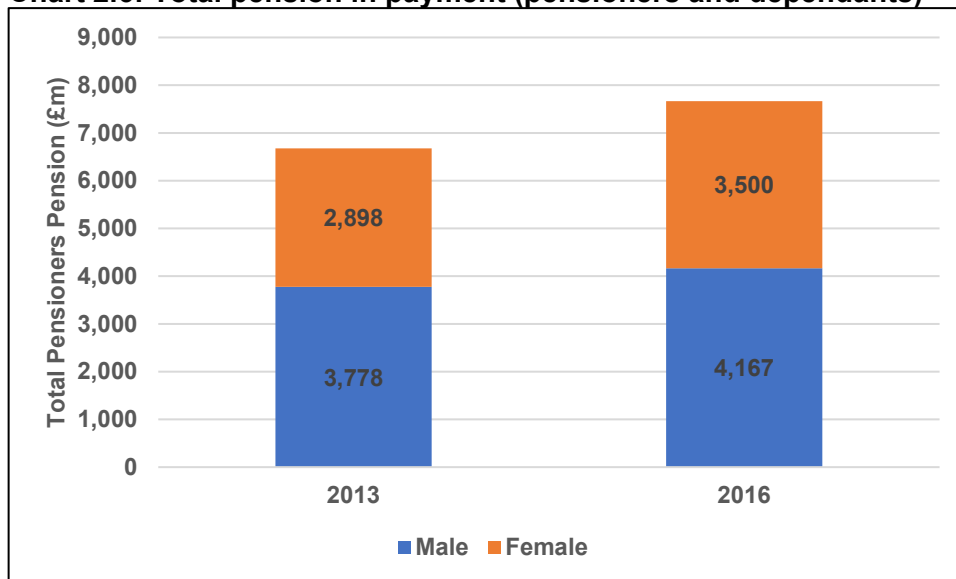




**Chart 2.5: Number of pensioners and dependants**



**Chart 2.6: Total pension in payment (pensioners and dependants)**



2.2 The charts above show an increase between 2013 and 2016 in the active, deferred and pensioner membership by both headcount and total salary/pension roll.

2.3 Data as at 31 March 2016 was supplied for 88 of the 91 funds. The exceptions were:

- > 2016 data: 3 funds did not provide data
- > 2014 data: 4 funds did not provide useable data. Data from a further 12 funds was excluded as many members had FTE salary data that was either unfeasibly small or unfeasibly large.





- 2.4 The 2014 data is therefore substantially incomplete. Although we have made efforts to rate up data to allow for missing funds, there remain significant concerns about this data. For example, it can be seen in chart 2.2 above that pay at 2014 appears to be out of line with that at 2013 and 2016. Due to these concerns about the 2014 data, in preparing valuation results we would propose to independently estimate gains and losses rather than relying on the 2014 data (see appendix C of the Assumptions Report for further details). A risk of this approach is that any upward or downward cost pressure that has occurred but we have not identified will not be reflected in the results. However, it would not be expected that there would be significant unidentified cost pressures given the relatively short period of experience from 2014 to 2016, although such unidentified cost pressure could certainly change the result as quoted to 0.1% pay.
- 2.5 The key adjustments made to the data were.
- > To remove records with incomplete or unreliable data and then apply a rating up factor to the remaining records to implicitly include the excluded members within the calculations as though they had the characteristics of an average member.
  - > To apply a further rating factor to the resultant datasets to allow for the missing funds (again on the assumption the members of those funds had the characteristics of an average member).
- 2.6 The adjustment factors applied are set out in table 2.1 below. The derivation of these factors and the checks and adjustments applied to the data are explained further in the next section of this report.

**Table 2.1: Uprating factors**

<b>31 March 2016</b>	<b>Uprating factor excluded data (A)</b>	<b>Uprating factor missing funds (B)</b>	<b>Uprating factor aggregate (A×B)</b>
Active members	1.034	1.021	1.056
Deferred members	1.007	1.010	1.017
Pensioners	1.006	1.021	1.028
Total membership	1.017	1.016	1.033

<b>31 March 2014</b>	<b>Uprating factor excluded data (A)</b>	<b>Uprating factor missing funds (B)</b>	<b>Uprating factor aggregate (A×B)</b>
Active members	1.134	1.318	1.494

- 2.7 Making assumptions about missing data and allowing for known members with unusable data by uprating introduces uncertainty into the valuation results. Appendix F gives an indication of the potential level of uncertainty introduced.

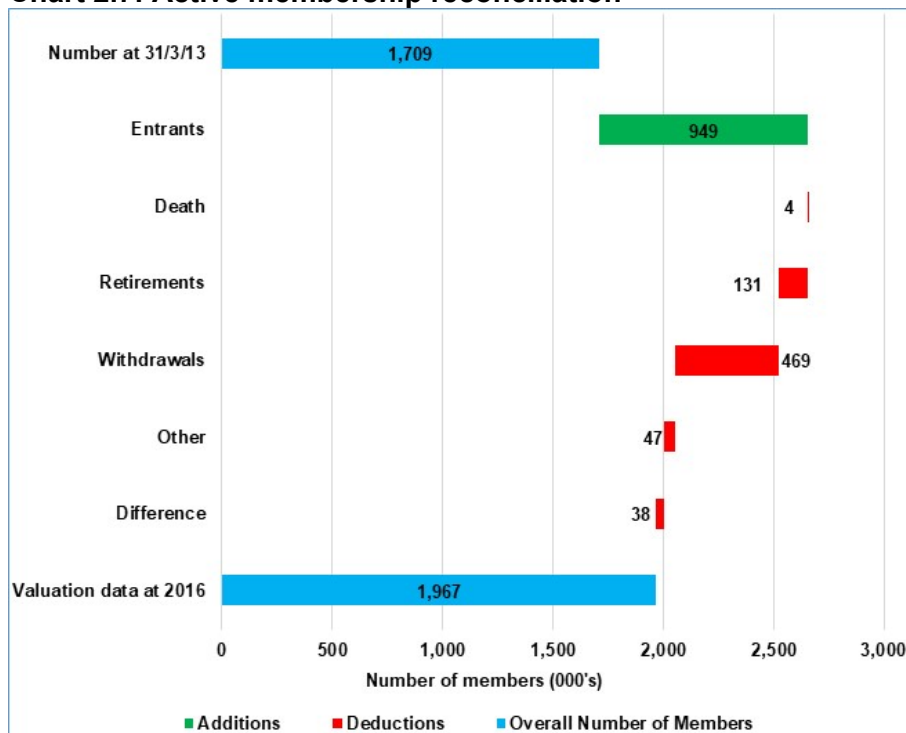


2.8 Despite lengthy discussions aimed at improving the data, particularly that as at 31 March 2014, no further improvements could be achieved. In consultation with MHCLG we concluded the data provided was adequate for the purposes set out in paragraph 1.3. The principal risk with the data is that any upward or downward cost pressure that has occurred but we have not identified will not be reflected in the results. However, it would not be expected that there would be significant unidentified cost pressures given the relatively short period of experience from 2014 to 2016. This is the basis on which the conclusion of data adequacy is based. However the short period over which the cost cap process has been tested for this valuation is helpful in this regard and this approach would be less satisfactory at subsequent valuation where the full four years of experience would be considered.

### Movements data 1 April 2013 to 31 March 2016

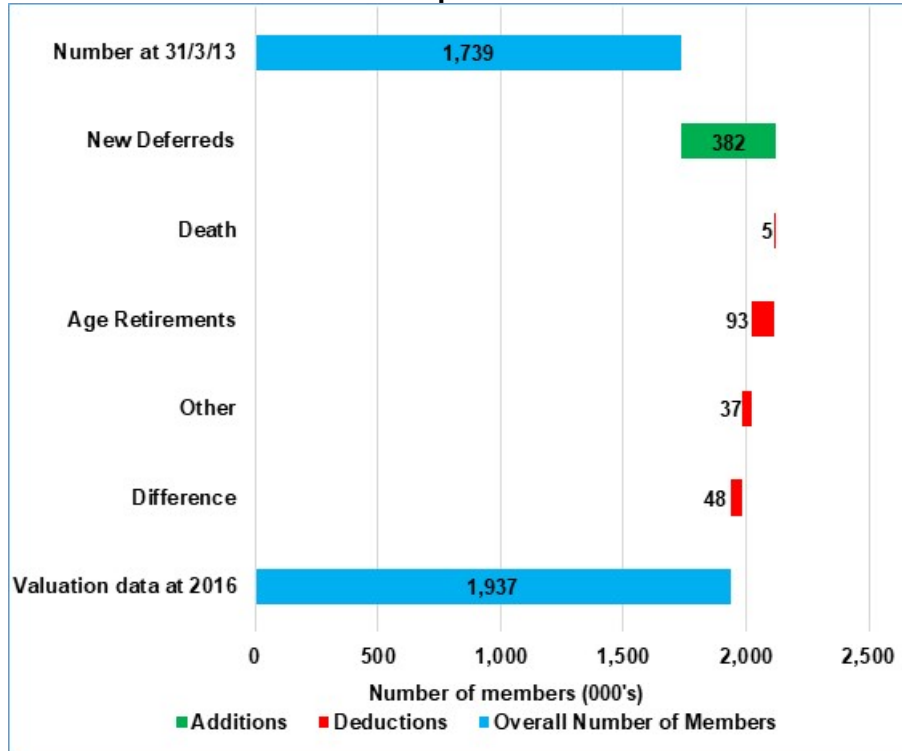
2.9 The movements data provided is to be used for the purposes of informing the demographic assumptions to be used for the 2016 valuation. It is also used in conjunction with the membership data at both 2016 and 2014 to determine an element of the cost cap calculation termed the Cost Cap Net Leavers Liability ('CCNLL'). The charts below show a reconciliation of the movements between 2013 and 2016. Further detail is given in Appendix B. Appendix F gives an indication of the potential level of uncertainty introduced into the valuation results owing to missing or unreliable movements data.

**Chart 2.7: Active membership reconciliation**

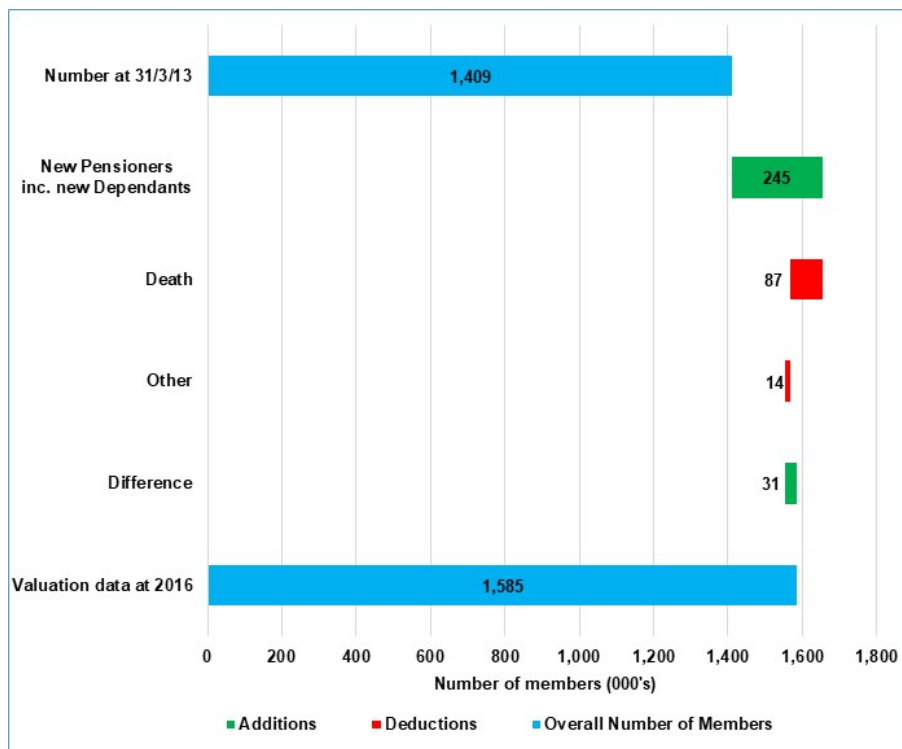




**Chart 2.8: Deferred membership reconciliation**



**Chart 2.9: Pensioner membership reconciliation**



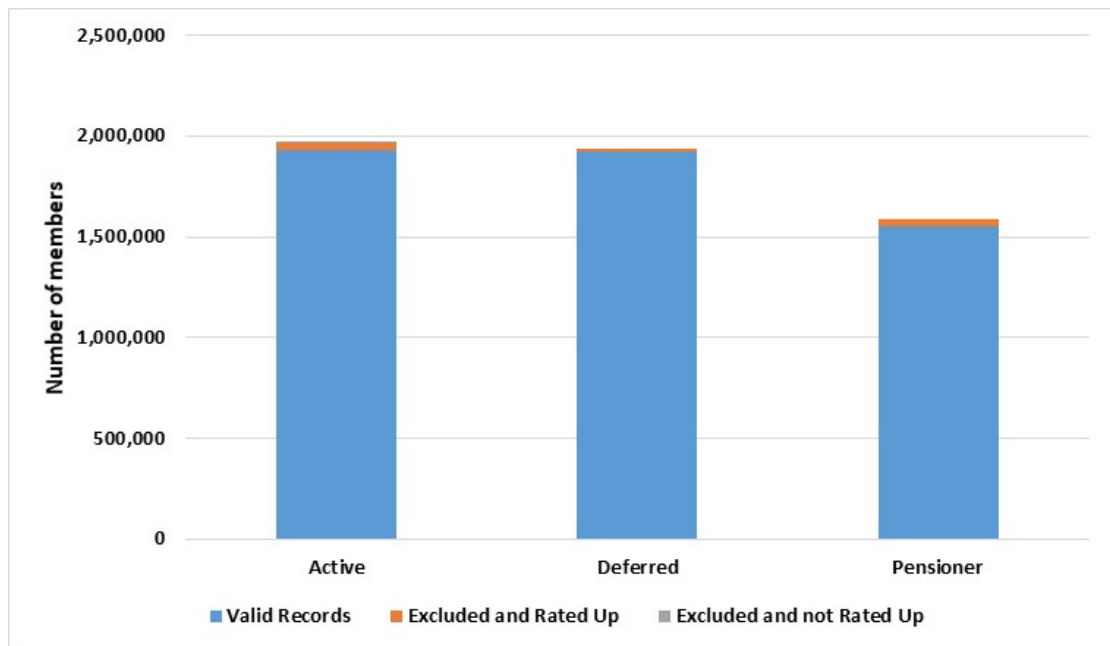


### 3 Data provided and checks and adjustments made

#### Membership data as at 31 March 2016 and 31 March 2014

- 3.1 Individual member data was supplied for active members, deferred members and current beneficiaries of the Scheme at the valuation date. Data as at 31 March 2016 was supplied for 88 of the 91 funds (89 local funds plus Environment Agency Closed and Active funds). Four funds did not provide useable data as at 31 March 2014, and data from a further 12 funds was excluded as many members had FTE salary data that was either unfeasibly small or unfeasibly large. The individual data items supplied which are critical to the valuation calculations are summarised in Appendix C. The graph below shows the total number of records received before amendments, before and after exclusions and after the global rate up. Further details are set out in Appendix E.

**Chart 3.1: Summary of data provided and excluded**



#### Checks made and adjustments applied

- 3.2 All key data items were checked against the specification requested for both completeness and consistency.
- 3.3 Checks were carried out to determine which records would need to be excluded by applying reasonableness tests. The checks and adjustments applied are summarised in Appendix E.



3.4 Based on the checks applied some records were excluded from the dataset for valuation purposes. Uprating factors were determined for each membership category equal to the ratio of known valid records and the number of records with adequate data. Implicitly this uprating approach assumes that excluded records have the same average profile (i.e. age, sex, pay, service) as included records. Table 3.1 shows the derivation of the uprating factors for excluded members.

3.5 Not all of the 91 funds supplied data, 3 funds did not provide any data and 16 funds did not provide usable data as at 31 March 2014. A further uprating factor has been determined for these missing funds based on SF3 data (statistics published by MHCLG) and fund accounts. This uprating again assumes that the missing records have the same average profile as included records. Table 3.1 shows the uprating factors for missing funds.

**Table 3.1: Derivation of uprating factors (31 March 2016)**

31 March 2016	Number of valid records (000's) (A)	Number of exclusions (000's)	Number of members after exclusions (000's) (B)	Uprating factor for excluded members (A/B)	Uprating factor for missing funds (C)	Number of members after rate up (D)	Uprating factor (including global rating) (A/B)*(C)
Active members	1,927	63	1,864	1.034	1.021	1,967	1.056
Deferred members	1,919	14	1,904	1.007	1.010	1,937	1.017
Pensioners	1,552	11	1,542	1.006	1.021	1,585	1.028
<b>Total membership</b>	<b>5,398</b>	<b>88</b>	<b>5,310</b>	<b>1.017</b>	<b>1.016</b>	<b>5,489</b>	<b>1.033</b>

31 March 2014	Number of valid records (000's) (A)	Number of exclusions (000's)	Number of members after exclusions (000's) (B)	Uprating factor for excluded members (A/B)	Uprating factor for missing funds (C) (D)	Number of members after rate up <sup>1</sup> (A/B)*(C)	Uprating factor (including global rating)
Active members	1,378	163	1,215	1.134	1.318	1,816	1.495

3.6 The main issues with the 2016 data were as follows:

- > Three funds did not provide any data at all (at least by the relevant “cut-off” date). This is in line with the 2013 valuation. Data is rated-up accordingly.
- > A large number of deferred members have not been fully processed. These are largely short service members with low liabilities, and membership reconciliations with external sources of data indicate most of the remainder are deferred pensioners and we propose to value them as such.



- > The CRA data for deferred members was inconsistent with the 2013 data; it is not clear whether this is an issue with the 2016 data or the 2013 data

### **Movements data**

- 3.7 Individual member movement records were supplied for all members who changed category of membership (ie active, deferred or pensioner) between the previous and current valuation dates. The movements data is analysed and used to inform how assumptions of future members' behaviours should be set for the valuation. The key data items provided for member movements are set out in Appendix D.
- 3.8 Limited checks were applied to movements data and records were excluded if key missing data materially impacted the analysis being undertaken. The checks and exclusions are summarised in Appendix G.
- 3.9 Overall we concluded the movements data supplied is appropriate for use in valuation calculations, and hence the movements data supplied (adjusted as described in this report) would be sufficient to allow us to analyse the majority of experience items.

### **Comparison with SF3 Data**

- 3.10 As a check on the final valuation data, we compared total pensionable pay and total pensions in payment from the adjusted valuation data with statistics published by MHCLG, known as SF3 data. Only headcount comparisons are possible for deferred members because pension amount is not available.
- 3.11 For active members, we compared total pensionable pay with estimated figures deduced from the primary contributions and primary contribution rate information supplied in the SF3 data (plus from the Environment Agency accounts).
- 3.12 The SF3 data implies total pensionable pay of £32.7bn. This is compared with the valuation pensionable pay of £33.2bn. There are a number of reasons why we would expect these figures to differ, for example the valuation data shows the rate of actual pay at 31 March 2016 for active members at that date, but the SF3 data covers the pay received during 2015/16 by individuals who were active members between 1 April 2015 and 31 March 2016. The difference of 1.2% between the two pay figures offers reasonable assurance on the adjustments applied to the data supplied for the valuation.
- 3.13 For pensioners, the total pension outgo in 2015/16 shown in SF3 plus Environment Agency fund accounts was £7.6bn, which compares with total pensions in payment from the adjusted valuation data of £7.7bn. The difference of around 1% offers reasonable assurance on the adjustments applied to the data supplied for the valuation.



### **Benefit information**

- 3.14 A summary of the benefits provided to members of the Scheme is given in Appendix H. The only benefit uncertainty that GAD are aware of is in the form of benefits that the scheme is liable to provide to provide for equalisation of GMPs. No allowance has been made for this in the valuation calculations.



## Appendix A: Summary of membership data

### Active data

- A.1 Data is summarised by reference to a members' Critical retirement age (CRA) – the earliest age that a member can take unreduced benefits in relation to certain periods of service (including some future service for certain categories of membership) .
- A.2 CRA has been taken as either 60 (where that is the nearest whole year of CRA), 62 (where CRA is between 61 and 64 to the nearest whole year) or 65 (where that is the nearest whole year of CRA, or where the member does not have a CRA).

**Table A1: Active data as at 31 March 2016**

	Number of records (000's)	Actual pensionable salary £m	FTE pensionable salary £m	Average Actual salary £	Average age weighted by Actual Pensionable Salary	Average Reckonable service <sup>1</sup>	CARE pension £m
CRA 60	383	9,574	10,630	24,994	47.6	15.9	377
CRA 62	178	3,211	4,009	18,021	54.7	9.4	126
CRA 65	1,406	20,302	28,444	14,438	43.7	2.2	642
<b>Total</b>	<b>1,967</b>	<b>33,088</b>	<b>43,083</b>	<b>16,818</b>	<b>45.9</b>	<b>5.5</b>	<b>1,146</b>

<sup>1</sup> Includes only pre-2014 service in the earlier final salary schemes

**Table A2: Active data as at 31 March 2014**

	Number of records (000's)	Actual pensionable salary £m	FTE pensionable salary £m	Average Actual salary £	Average age weighted by Actual Pensionable Salary	Average Reckonable service	CARE pension £m
CRA 60	501	9,972	13,764	19,894	45.9	18.1	-
CRA 62	234	3,550	5,181	15,183	53.2	13.3	-
CRA 65	1,081	15,343	21,759	14,194	43.8	3.9	-
<b>Total</b>	<b>1,816</b>	<b>28,865</b>	<b>40,703</b>	<b>15,895</b>	<b>45.7</b>	<b>9.1</b>	<b>-</b>





**Table A3: Active data as at 31 March 2013 before rating-up \***

	Number of members (000's)	Actual pensionable salary £m	FTE pensionable salary £m	Average Actual pay £	Average age weighted by pay	Average Reckon-able Service	CARE pension £m
CRA 60	496	11,807	13,223	23,788	45.7	16.9	-
CRA 62	244	4,168	5,286	17,054	52.6	12.7	-
CRA 65	920	13,075	18,429	14,220	44.4	4.1	-
<b>Total</b>	<b>1,660</b>	<b>29,050</b>	<b>36,938</b>	<b>17,497</b>	<b>46.1</b>	<b>9.2</b>	<b>-</b>

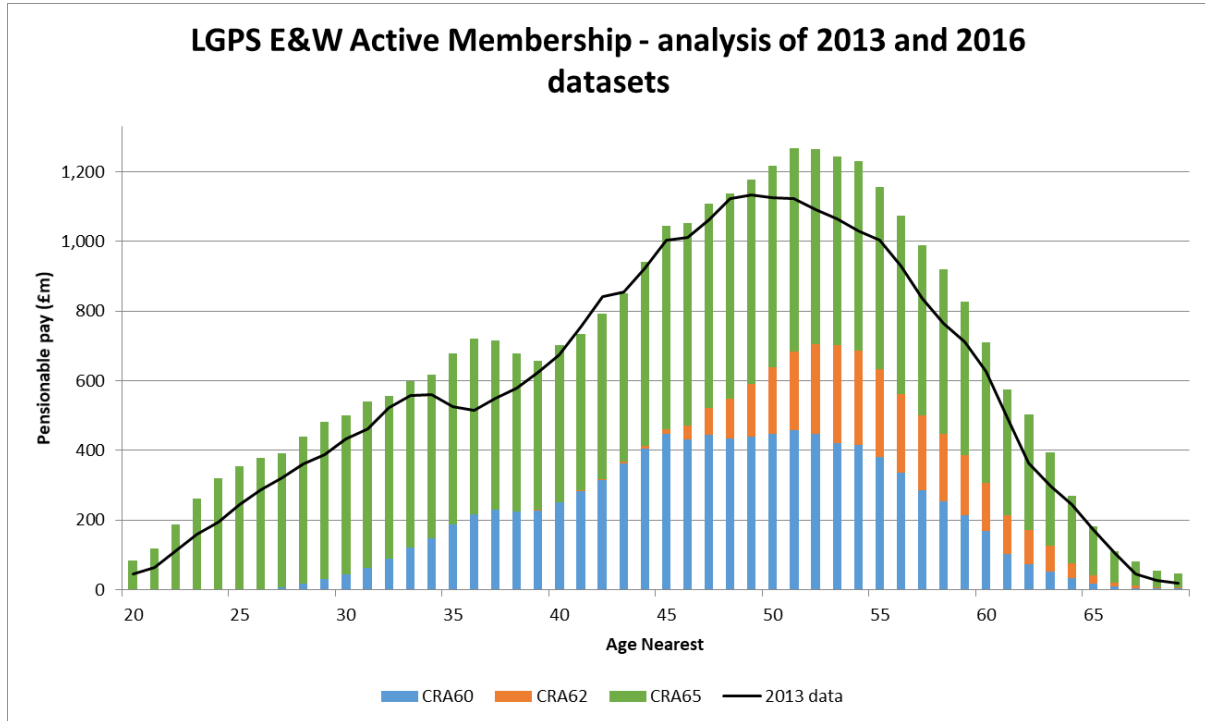
\* An adjustment (~2.9%) was made to scale up the active membership data for three missing funds. The resulting membership after rating up (as set out in the 2013 valuation report) is as follows:

**Table A4: Active data as at 2013 after rating-up**

	Number of Members (000's)	Actual pensionable salary (£m)	Average pensionable salary (£)	Average age weighted by actual salary (years)
<b>Total</b>	<b>1,709</b>	<b>29,897</b>	<b>17,497</b>	<b>46.1</b>



**Chart A1: Breakdown of Active Members pensionable salary by age**



**Deferred data**

**Table A5: Summary of Deferred pensioner data as at 31 March 2016:**

Category	Number of records (000's)	Total deferred pension <sup>1</sup> £m	Average pension <sup>1</sup> £	Average age <sup>2</sup>
CRA 60	767	1,786	2,328	49.4
CRA 62	292	445	1,524	54.6
CRA 65	878	587	668	46.5
<b>Total</b>	<b>1,937</b>	<b>2,818</b>	<b>1,455</b>	<b>49.6</b>

<sup>1</sup> Includes pension increase payable in April 2016

<sup>2</sup> Weighted by deferred pension



**Table A6: Summary of Deferred pensioner data as at 31 March 2013\*:**

Category	Number of members (000')	Total deferred pension <sup>1</sup> £m	Average pension <sup>1</sup> £	Average age <sup>2</sup>
CRA 60	790	1,262	1,597	49.7
CRA 62	233	258	1,106	50.0
CRA 65	673	772	1,148	47.2
<b>Total</b>	<b>1,696</b>	<b>2,292</b>	<b>1,351</b>	<b>48.9</b>

<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by deferred pension

\* An adjustment was made to scale up the deferred membership data for three missing funds. The resulting membership after rating up (as set out in the 2013 valuation report) is as follows:

**Table A7: Summary of Deferred pensioner data as at 2013 after rating up**

	Number of members (000's)	Total deferred pension (£m)	Average pension <sup>1</sup> (£)	Average age <sup>2</sup>
<b>Total</b>	<b>1,739</b>	<b>2,350</b>	<b>1,351</b>	<b>48.9</b>

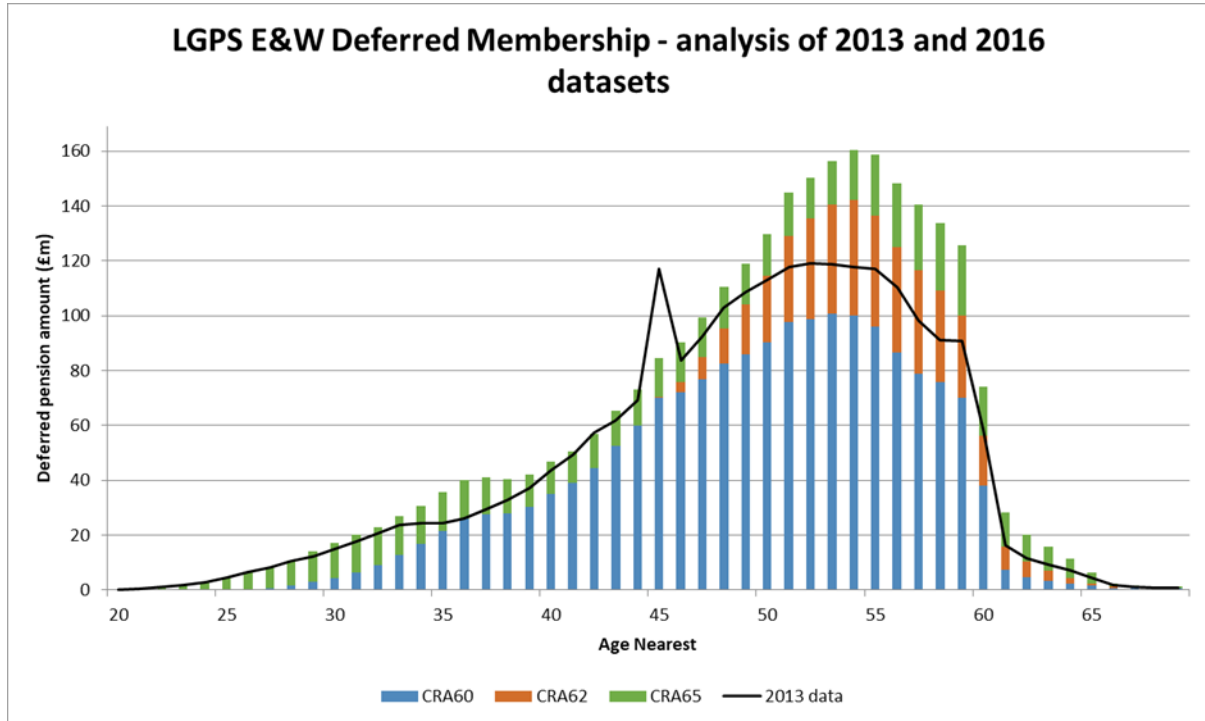
<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by deferred pension

- A.3 Some CRA data appeared inconsistent with the member joining dates. We took this data at face value in 2013, but used a formula to derive CRA for 2016 data. This has led to some differences in category for some members, as implied by the chart below.



Chart A2: Deferred pension data by age



A.4 The anomaly shown in the 2013 data around age 45 is not considered material to this valuation.



## Pensioner data

**Table A8: Summary of Pensioner data as at 31 March 2016:**

	Number of records (000's)	Total pension <sup>1</sup> (£m)	Average pension <sup>1</sup> (£)	Average age <sup>2</sup> (years)
Age Retirement	1,144	5,845	5,108	70.1
Ill-Health Retirement	222	1,181	5,323	69.4
<b>Total</b>	<b>1,366</b>	<b>7,026</b>	<b>5,143</b>	<b>70.0</b>

<sup>1</sup> Includes pension increase payable in April 2016

<sup>2</sup> Weighted by current pension in payment

**Table A9: Summary of pensioner data as at 2013\*:**

	Number of members (000's)	Total pension <sup>1</sup> £m	Average pension <sup>1</sup> £	Average age <sup>2</sup>
Age Retirement	962	4,884	5,075	69.5
Ill-Health Retirement	210	1,077	5,138	67.9
<b>Total</b>	<b>1,172</b>	<b>5,961</b>	<b>5,086</b>	<b>69.1</b>

<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by current pension in payment

\* An adjustment (~2.7%) was made to scale up the pensioner membership data for three missing funds. The resulting membership after rating up (as set out in the 2013 valuation report) is as follows:

**Table A10: Summary of Pensioner data as at 2013 after rating up**

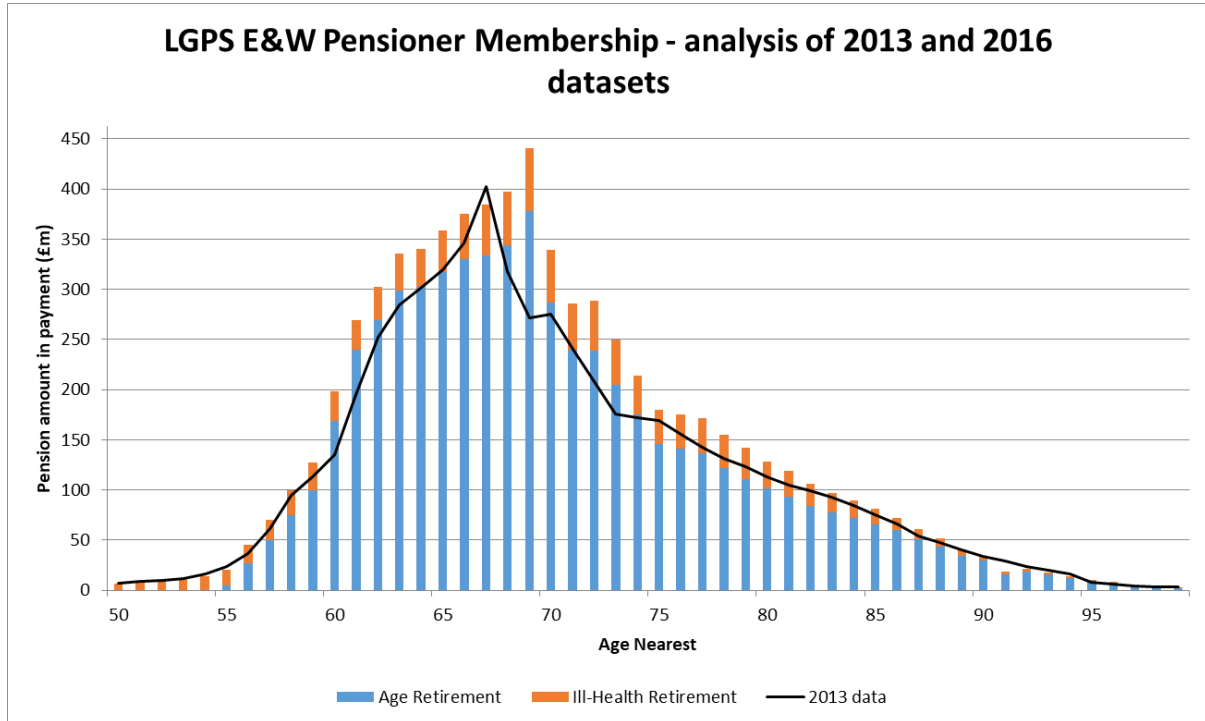
	Number (000's)	Total pension <sup>1</sup> (£m)	Average pension (£) <sup>1</sup>	Average age <sup>2</sup> (years)
<b>Total</b>	<b>1,204</b>	<b>6,124</b>	<b>5,086</b>	<b>69.1</b>

<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by current pension in payment



**Chart A3: Summary of pension amount by age\***



\* The 2013 dataset in Chart A3 is based on membership before uprating (i.e., it is based on data summarised in Table A9.)

### Dependant data

**Table A11: Summary of Dependant data as at 2016:**

	Number of members (000's)	Total pension <sup>1</sup> £m	Average pension <sup>1</sup> £	Average age <sup>2</sup>
Spouse	206	619	3,012	76.5
Children	13	21	1,583	19.5
<b>Total</b>	<b>219</b>	<b>640</b>	<b>2,925</b>	<b>74.6</b>

<sup>1</sup> Includes pension increase payable in April 2016

<sup>2</sup> Weighted by current pension in payment



**Table A12: Summary of Dependant data as at 2013\*:**

	Number of members (000)	Total pension <sup>1</sup> £m	Average pension <sup>1</sup> £	Average age <sup>2</sup>
Spouse	189	520	2,759	76.4
Children	12	17	1,434	18.6
<b>Total</b>	<b>201</b>	<b>537</b>	<b>2,680</b>	<b>74.6</b>

<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by current pension in payment

\* An adjustment (~2.7%) was made to scale up the dependant membership data for three missing funds. The resulting membership after rating up (as set out in the 2013 valuation report) is as follows:

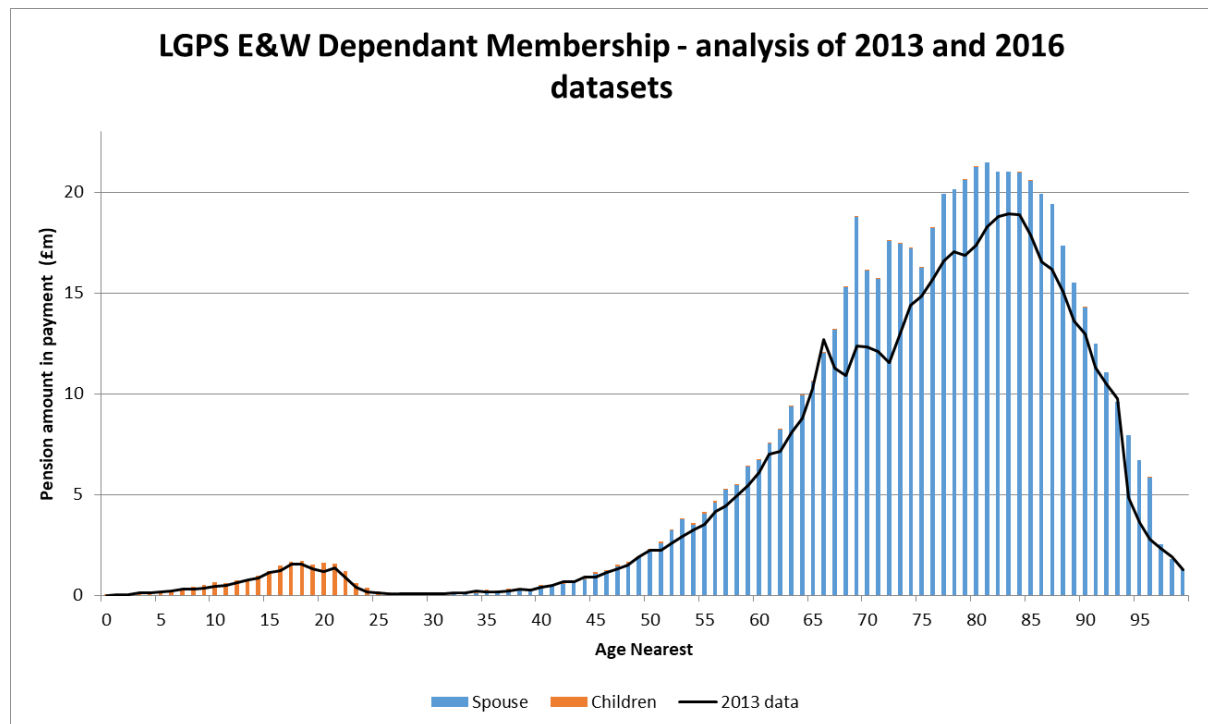
**Table A13: Summary of Dependant data as at 2013 after rating up**

	Number (000s)	Total pension (£m) <sup>1</sup>	Average pension <sup>1</sup> (£)	Average age <sup>2</sup> (years)
<b>Total</b>	<b>206</b>	<b>552</b>	<b>2,680</b>	<b>74.6</b>

<sup>1</sup> Includes pension increase payable in April 2013

<sup>2</sup> Weighted by current pension in payment

**Chart A4: Summary of Dependant pension amount by age\***



\* The 2013 dataset in Chart A4 is based on membership before uprating (i.e., it is based on data summarised in Table A12.)



## Appendix B: Summary of movements data 2013-2016

**Table B1: Reconciliation of active membership over the intervaluation period (2013-2016)**

<b>Reconciliation of membership over intervaluation period 2013-2016</b>	
<b>Actives</b>	
<b>Number at 31/3/13</b>	1,708,700
<b>Additions</b>	
• Entrants	948,713
<b>Deductions:</b>	
• Death	4,413
• Retirements	131,087
• Withdrawals	469,307
• Other	47,403
<b>Number expected at 31/3/16</b>	2,005,203
<b>Valuation data at 2016</b>	1,967,400
<b>Deferreds</b>	
<b>Number at 31/3/13</b>	1,738,900
<b>Additions</b>	
• New deferreds	381,838
<b>Deductions:</b>	
• Death	5,280
• Age retirements	93,480
• Other exits	37,203
<b>Number expected at 31/3/16</b>	1,984,775
<b>Valuation data at 2016</b>	1,936,800
<b>Pensioners</b>	
<b>Number at 31/3/13</b>	1,409,100
<b>Additions</b>	
• New pensioners including new dependants	245,229
<b>Deductions:</b>	
• Death	86,604
• Other	14,138
<b>Number expected at 31/3/16</b>	1,553,587
<b>Valuation data at 2016</b>	1,585,000





## Appendix C: Data items – membership data

### Actives

- > Identifier;
- > Date of birth;
- > Gender;
- > Date of joining LGPS ;
- > Date of Transfer to 2014 Scheme;
- > Part time Percentage;
- > Pensionable Pay (LGPS CARE Definition);
- > Pensionable Pay 50:50 (LGPS CARE Definition);
- > Full Time Equivalent Pay (LGPS final salary Definition);
- > Critical retirement ("rule of 85") date. May be before age 60.
- > Calculation Service - 80ths (Years)
- > Calculation Service - 80ths (Days)
- > Calculation Service - 60ths (Years)
- > Calculation Service - 60ths (Days)
- > Revalued CRA Accrued main section CARE Pension Pot (£);
- > Revalued tapered Accrued main section CARE Pension Pot (£);
- > Revalued NPD Accrued main section CARE Pension Pot (£);
- > Revalued NPD Accrued 50:50 CARE Pension Pot (£);
- > Revalued Armed Forces' scheme CARE pension transferred in;
- > Revalued Civil Service scheme CARE pension transferred in;
- > Revalued Firefighters' scheme CARE pension transferred in;
- > Revalued NHS scheme CARE pension transferred in;
- > Revalued Police scheme CARE pension transferred in;
- > Revalued Teachers' scheme CARE pension transferred in;
- > Revalued CRA Accrued 50:50 CARE Pension Pot (£);
- > Revalued tapered Accrued 50:50 CARE Pension Pot (£).

### Pensioners and Dependants

- > Identifier;
- > Date of birth;
- > Gender;
- > Pensioner type;
- > Main section Pension Amount (£ p.a.) at valuation date;
- > 50:50 Pension Amount (£ p.a.) at valuation date;
- > Date Pension Commenced;
- > Tax Free Cash as a Right (£);
- > Total Tax Free Cash Sum (£);
- > Pension Amount (£ p.a.) at valuation date;
- > Initial Pension Amount (final salary linked) (£ p.a.).



## Deferred

- > Identifier;
- > Date of birth;
- > Gender;
- > Critical retirement ("rule of 85") date. May be before age 60;
- > Total Revalued Deferred Lump Sum (£);
- > Date Joined Fund.
- > Revalued post 14 main section deferred pension (£ p.a.);
- > Revalued post 14 50:50 deferred pension (£ p.a.);
- > Revalued age 65 (final salary linked) deferred pension (£ p.a.);
- > Total Revalued Deferred Pension (£ p.a.);
- > Calculation Service - 80ths (Years);
- > Calculation Service - 80ths (Days);
- > Calculation Service - 60ths (Years);
- > Calculation Service - 60ths (Days).



## Appendix D: Data items – movements data

### Actives

- > Identifier;
- > Date of birth;
- > Gender;
- > Date of joining LGPS ;
- > Date of Transfer to 2014 Scheme;
- > Date of Exit;
- > Exit Mode;
- > Exit Payment;
- > Survivor Beneficiary type;
- > Date of Birth of Partner;
- > Gender of Partner.

### Pensioners and Dependants

- > Identifier;
- > Date of birth;
- > Gender;
- > Date Pension Commenced;
- > Pensioner/dependant type;
- > Date left pensioner/dependant status;
- > Pensioner/dependant exit mode;
- > Survivor Beneficiary type (pensioner only);
- > Pension Amount (£ p.a.);
- > Date of Birth of Partner (pensioner only);
- > Gender of Partner (pensioner only).

### Deferred

- > Identifier;
- > Date of birth;
- > Gender;
- > Date Joined Fund;
- > Date of Deferment;
- > Date left deferred status;
- > Deferred Exit Mode;
- > Survivor Beneficiary type;
- > Date of Birth of Partner;
- > Gender of Partner.



## Appendix E: Checks and adjustments applied to the membership data

### Summary of validation and review process applied to the data

- E.1 First, all data provided was reviewed against the data specification for both completeness and consistency. In a number of cases this led to requests for revised data sets to be submitted, especially where significant items of data were initially omitted.
- E.2 Detailed individual member checks were not undertaken. Our reviews were focused on the presence and consistency of the specified data items and especially those that are most significant for the valuation exercise.
- E.3 We reviewed the totals and averages of certain key data elements by authority, to identify any obvious inconsistencies in data provision between authorities. For example, average age, gender distribution and full-time equivalent pensionable pay might be expected to be reasonably similar from one authority to another, so that a comparison of these items against the average across all authorities could reveal a difference that either had a plausible explanation or else indicated an issue with the data. A number of such comparisons were undertaken, and where these identified an inconsistency, the point was raised with the data provider and in a number of cases the explanation led to a correction being made.
- E.4 Records with unreliable or missing key data items were removed from the data with an uprating approach then applied to allow for an appropriate liability. This approach implicitly assumes those members with missing or unreliable data have the same average characteristics as members with reliable data.
- E.5 We compared the data received against MHCLG's Local Government Finance Statistical Release (SF3) dated 26 October 2016, which sets out Scheme cash flow and other details gathered for the 2015-16 financial year. This comparison did not raise any concerns about the data received.

### Adjustments made to records

- E.6 Missing CARE pension: We estimated the CARE pension (earned over 2014-16) for around 3% of active records where other information was available/reliable.
- E.7 Critical Retirement Age (CRA): CRA provided in the 2016 data appeared to be inconsistent with dates of joining; we therefore derived CRA from the data provided.
- E.8 Dependants' pensions: The data provided for contingent spouse pension for pensioners was unreliable and therefore we've excluded all contingent spouse data and estimated the value using 40% of pension for all pensioners.
- E.9 Guaranteed minimum pensions (GMPs): GMP data was incomplete. An adjustment was applied to the overall liabilities to allow for GMPs on an approximate basis.



## Appendix F: Uncertainty in valuation results arising from data deficiencies

- F.1 The table below gives an indication of the scale of uncertainty introduced into the valuation results as a result of missing data and assuming that the liabilities calculated are 10% different from the actual liabilities.

**Table F1: Uncertainty in data at 31 March 2016**

31 March 2016	Employer contribution correction cost
Active members (uprating applied: 5%)	±0.1%
Deferred members (uprating applied: 2%)	Nil
Pensioners (uprating applied: 3%)	Nil

**Table F2: Uncertainty in data at 31 March 2014**

31 March 2014	Employer contribution correction cost
Active members (uprating applied: 49%)	±0.9%

### Cost Cap Net Leavers Liabilities (CCNLL)

- F.2 The CCNLL is a component part of the cost cap calculation and is a quantification of the amount of pre-reformed liabilities which fall out of the cost cap fund at a valuation owing to members which have left service since the previous valuation (or since the initial cost cap fund was set in the case of the 2016 valuation), net of the additional liabilities in respect of members with pre-reformed service who rejoined active membership during 2014-16.
- F.3 To accurately calculate CCNLL in accordance with the directions requires full movement data for all members who were active in 2014 and are no longer active at the 2016 valuation.
- F.4 There have been some difficulties for all schemes in using the valuation data to determine the CCNLL, and these difficulties are particularly acute for LGPS where members may have multiple employments of re-joining and aggregation of benefits occur. Further details on the approach taken to determining the CCNLL in the absence of complete data is provided in the Assumptions Report.



- F.5 We expect the uncertainty introduced by the approach above could amount to around 1% of pay. Although it should be noted that the deficiencies in the membership data discussed above could compound this scale of uncertainty.



## Appendix G: Checks and exclusions applied to the movements data

- G.1 Checks were undertaken to ensure all records with sufficient information to assign the movement to the correct category for analysis were taken into account. Minimal exclusions were made based on these checks. No further checks were undertaken other than to confirm the overall number of movements compared reasonably with the comparable figures shown in the SF3 data.



## Appendix H: Summary of benefits

- H.1 The Directions require the 2014 Scheme and the Earlier Schemes as defined in the Local Government Pension Scheme (Transitional Provisions, Savings and Amendment) Regulations 2014 to be taken into account in aggregate for the purposes of the current valuation. A summary of benefits provided by the Scheme is shown below, covering benefit levels for service immediately prior to 1 April 2014, and from 1 April 2014.
- H.2 The main benefit provisions of the Scheme, for service from 1 April 2008 to 31 March 2014 and for service from 1 April 2014, are shown in Table H1.

**Table H1: Main benefit provisions of LGPS**

	<b>From 1 April 2008 to 31 March 2014</b>	<b>From 1 April 2014</b>
<b>Basis of provision</b>	Final salary	Career average with revaluation of CPI
<b>Contracted out/in</b>	Contracted out	Contracted out
<b>Normal Pension Age (NPA)</b>	65	State Pension Age, or 65 if higher
<b>Early retirement</b>	Transitional Rule of 85 for some members	Transitional Rule of 85 for some members
<b>Pension accrual rate</b>	1/60	1/49
<b>Retirement lump sum accrual rate</b>	By commutation (at 12:1)	By commutation (at 12:1)
<b>Final pensionable pay</b>	Pay in last 12 months prior to retirement or earlier exit, or in either of the previous two years if higher	N/A
<b>Pay</b>	Pay excluding non-contractual overtime and non-pensionable additional hours	Pay including non-contractual overtime and additional hours
<b>Dependant benefits</b>	1/160 (on death in service, full prospective service is included)	1/160 (on death in service, full prospective service is included)
<b>Ill health pension</b>	3-Tier system with benefit tier depending on prospect of return to gainful employment. Tier 1 (no reasonable expectation of return to gainful employment before NPA) – service enhanced by full prospective service to NPA. Tier 2 (expectation of return to gainful employment between 3 years after leaving and NPA) – service enhanced by 25% of prospective service to NPA. Tier 3 (expectation of return to gainful employment within 3 years after leaving) – no enhancement to service: benefit payable for 3 years or until return to gainful employment if earlier, with review after 18 months.	
<b>Pension increases</b>	Governed by the Pensions (Increase) Act 1971	Governed by the Pensions (Increase) Act 1971
<b>Statutory underpin</b>		For members meeting age and service criteria, pension is at least as high as under 2008 Scheme