



Actuarial valuation as at 31 March 2016

Teesside Pension Fund

Prepared for Middlesbrough Borough Council as Administering Authority of
the Teesside Pension Fund
Prepared by Becky Durran FIA
Joel Duckham FIA
Date 31 March 2017

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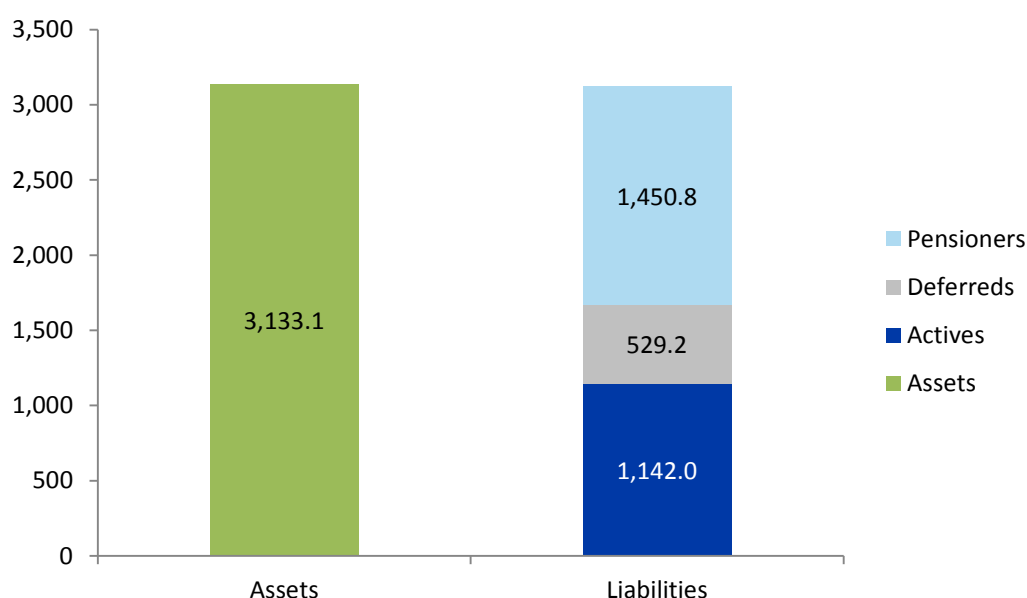
No decisions should be taken on the basis of this report by any party other than our client, Middlesbrough Borough Council, and nothing in this report removes the need for readers to take proper advice in relation to their specific circumstances.

Executive Summary

The key results of the valuation as at 31 March 2016 are set out below.

There was a surplus of £11.1M relative to the past service liabilities of £3,122.0M which corresponded to a funding ratio of 100%.

The past service liabilities is the amount of assets agreed with the Administering Authority as being required to meet members' benefits, assuming the Fund continues as a going concern.



The aggregate Employer future service contribution rate (the primary contribution rate, a weighted average of all Employers' primary rates) is 15.7% of Pensionable Pay.

The aggregate Employer total contribution rate (primary plus secondary) required to restore the funding ratio to 100% using a recovery period of 20 years from 1 April 2017, is 15.6% of Pensionable Pay (if the membership remains broadly stable and pay increases are in line with our assumptions). The comparable figure at the previous valuation was 13.5% of Pensionable Pay using a recovery period of 11 years from 1 April 2014.

The contributions payable by each Employer or group of Employers may differ because they allow for each Employer's or group's particular membership profile and funding ratio, and assumptions and recovery periods appropriate to their circumstances.

Actuarial valuation as at 31 March 2016

Teesside Pension Fund

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Introduction

This report has been prepared for the Administering Authority. It sets out the results and conclusions of the funding valuation of the Teesside Pension Fund as at 31 March 2016.

This is our actuarial valuation report. It draws together other pieces of work and advice from throughout the valuation process. Appendix 1 sets out the legal framework within which the valuation has been completed.

Throughout this report, assets and liabilities in respect of defined contribution additional voluntary contributions (or AVCs) have been excluded.

Some shorthand used in this report is explained opposite. Some technical pensions terms are explained in the Glossary.

Shorthand

Fund

Teesside Pension Fund

Administering Authority

The Middlesbrough Borough Council, in its role as the Administering Authority of the Fund

Employers

Middlesbrough Borough Council, and other employers with employees participating in the Fund

Regulations

The Local Government Pension Scheme Regulations 2013 (and other Regulations as referenced in the Glossary)

Pensionable Pay

As defined in the Regulations in relation to post-2014 membership

Pensionable Service

Periods of membership, as defined in the Regulations

Snapshot view

The report concentrates on the Fund's financial position at the valuation date. As time moves on, the Fund's finances will fluctuate. If you are reading this report some time after the valuation date, the Fund's financial position could have changed significantly.

Update since the previous valuation

The key results from the previous valuation as at 31 March 2013 were:

The Fund's assets were £2,956.3M and the past service liabilities were £2,919.3M, which corresponded to a surplus of £37.0M and a funding ratio of 101%.

The aggregate Employer future service contribution rate was 13.5% of Pensionable Pay.

The Administering Authority agreed Employer contributions from 1 April 2014 over a range of recovery periods designed to restore the funding ratio to 100% over a period not exceeding 11 years.

The resulting aggregate Employer contributions were

- The Employer future service contribution rate of 14.4% of Pensionable Pay; and
- Additional monetary amounts giving total contributions as follows

Year from 1 April	% of Pensionable Pay	Aggregate contribution amounts (£M)
2014	14.6	1.94
2015	14.5	1.93
2016	14.5	1.80

At the end of the period shown above, the annual monetary amounts are anticipated to continue at their existing rate till the end of relevant recovery period. Thereafter, the contributions are anticipated to be in line with the future service contribution rate of 14.4% of Pensionable Pay.

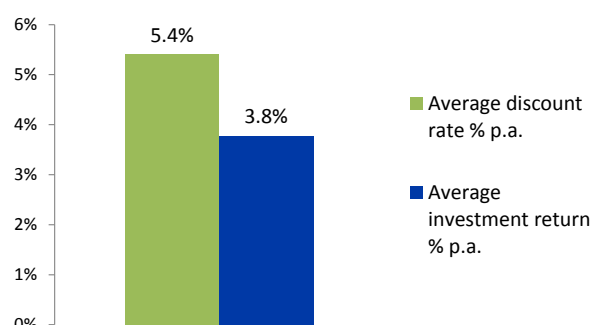
In addition the Employers paid contributions in respect of any additional strains arising on non-ill health early retirement or due to increases in benefits. Members also paid contributions required by the Regulations.

Financial development

To illustrate the Fund's financial development since the previous valuation, we compare below key financial assumptions made at the previous valuation with what actually happened.

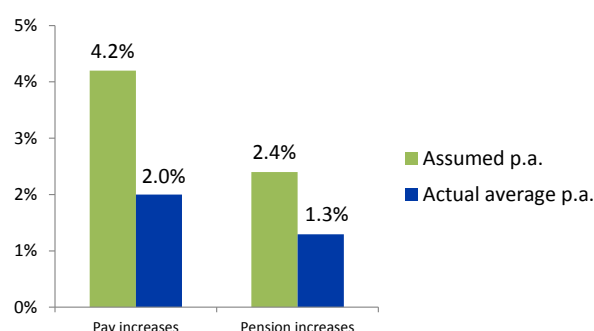
Investment return (or discount rate)

The investment return has been lower than the average discount rate assumed.



Inflationary pay and pension increases

Increases to pay were lower than assumed, and increases to pensions in payment were on average lower than assumed.



Note that the assumed pay increases above include approximate allowance for the effect of the promotional salary scale.

Where material we show the financial impact of the above developments later in this report.

Other key developments since the previous valuation

As well as the contributions paid to the Fund since the previous valuation and the returns achieved on the Fund's assets, there have been the following material developments since the previous valuation date:

▪ **2014 Scheme**

A new benefit structure was introduced for Pensionable Service from 1 April 2014. The key features are:

- Career average structure
- Accrual rate of 49ths
- Pensions revalued by CPI before retirement
- Normal Pension Age linked to State Pension Age
- Changes to member contribution rates
- Member contribution rates based on actual (previously full time equivalent) pay
- Introduction of a 50:50 option, with member contribution rate and pension accrual rate both half rate
- An underpin to pensions for members within 10 years of age 65 in April 2012.

Benefits for Pensionable Service before 1 April 2014 are protected, and calculated by reference to retirement ages in force before the 2014 Scheme was introduced. The link to final pay, (where pay is calculated using the 2008 Scheme definition), for pre 2014 benefits remains for active members.

The introduction of the 2014 Scheme was fully reflected in our previous valuation.

▪ **Auto-enrolment**

Between 2012 and 2018 all UK employers will have a duty to commence automatically enrolling employees who satisfy certain criteria into the National Employment Savings Trust (NEST) or, if it satisfies certain requirements, their own pension scheme. The "staging date", from which the auto-enrolment duty applies, varies between individual employers. Over the period since the previous valuation, a number of the Fund's employers have been impacted and this has led to an increase in new members joining the Fund.

▪ **Probation transfer**

With effect from 1 April 2014, responsibility for all liabilities in the Fund in relation to Durham and Tees Valley Probation Trust transferred to the Greater Manchester Pension Fund. A bulk transfer of assets notionally held by the Fund to back the transferring liabilities was agreed and has been paid to the Greater Manchester Pension Fund.

▪ **Indexation of GMPs**

On 6 April 2016 the Government introduced the new State Pension. A consequence of the legislation was that the mechanism which previously provided fully indexed pension payments to public servants ceased to apply in relation to the GMP element of pension.

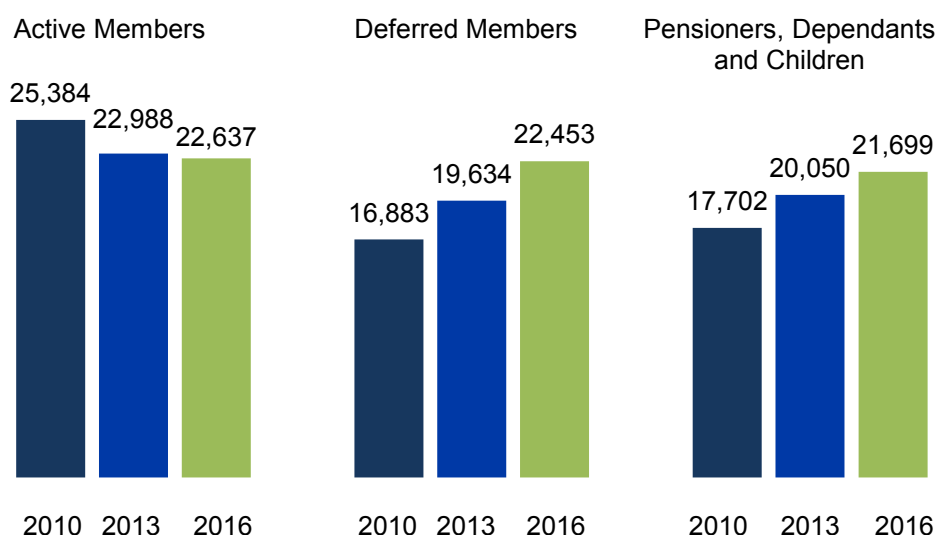
On 1 March 2016 HM Treasury announced an interim solution to the indexation of GMPs in public service pension schemes, including the Local Government Pension Scheme. The implications of this are that the Fund became responsible for paying full pension increases on the GMP for members who reach their State Pension Age between 6 April 2016 and 5 December 2018 inclusive. The results of this valuation allows for this change.

Membership data

This valuation is based on membership data as at 31 March 2016 supplied to us by the Administering Authority.

A summary of the membership data is included in Appendix 2.

The chart below shows how the membership profile of the Fund has changed over the last three valuations. During this period, the Fund has matured with the proportion of actives falling from 42% of the Fund's membership at 31 March 2010 to 34% at 31 March 2016.



Note: The deferred membership numbers above excludes members who had yet to decide whether to take transfer payments.

We have carried out some general checks to satisfy ourselves that:

- The information used for this valuation is broadly consistent compared with the information used for the previous valuation and also with that shown in the Fund's Annual Report and Accounts.
- The numbers of members included in this valuation can be reconciled against those included in the previous valuation.

However, the results in this report rely entirely on the accuracy of the information supplied. The Administering Authority should notify us if the data we have used is incomplete or inaccurate.

Benefits valued

Members are entitled to benefits defined in the Regulations. Different benefits apply to Pensionable Service before 1 April 2008, between 1 April 2008 and 31 March 2014, and after 31 March 2014. A summary of the benefits valued is given in Appendix 3.

Discretionary benefits

Employers have discretion over payment of certain benefits and it is not practical to allow for the policies of each Employer. Most discretionary benefits are financed as they occur, so the financial impact on this valuation is minimal. No specific allowance has therefore been made for benefits which are granted at the discretion of the Employer.

State Pension Age changes

Normal Pension Age for Pensionable Service on or after 1 April 2014 is State Pension Age (SPA) or, if higher, age 65. SPA is currently transitioning from age 65 (60 for women) to age 68 by 2046.

On 1 March 2016 the Department for Work and Pensions published the Terms of Reference for a review of SPA. The Government is expected to reach a decision arising from its review later this year. As the outcome of the review is not yet known, no allowance has been made within the valuation for any changes in SPA beyond those which have already been announced.

Local Government Pension Scheme Regulations and the cost management mechanism

Our valuation reflects our understanding of the Regulations in force at the valuation date. Any future changes may affect the conclusions in this report.

We have made no allowance in this valuation for any future potential changes to member contributions or benefits resulting from the cost management mechanism under the Regulations. The first valuation for the purposes of calculating the Scheme cost under the cost

management mechanism will be carried out by the Government Actuary's Department as at 1 April 2016, but any changes to members' contributions or benefits that may arise will not be known for some time and we do not expect any changes to be implemented before 1 April 2019.

GMP equalisation and indexation

On 28 November 2016 HM Treasury commenced a consultation process on the indexation and equalisation of GMP in public service pension schemes. The outcome of this consultation process is unknown and so this valuation does not allow for any funding of full indexation or equalisation of GMPs beyond those already announced. The results of this valuation do allow for the changes which have already been implemented to the indexation of GMPs for members who reach their State Pension Age between 6 April 2016 and 5 December 2018 inclusive.

Inflation measure

The Consumer Prices Index (CPI) is currently used to index pensions in payment and deferment, and to revalue members' CARE accounts for service after 31 March 2014.

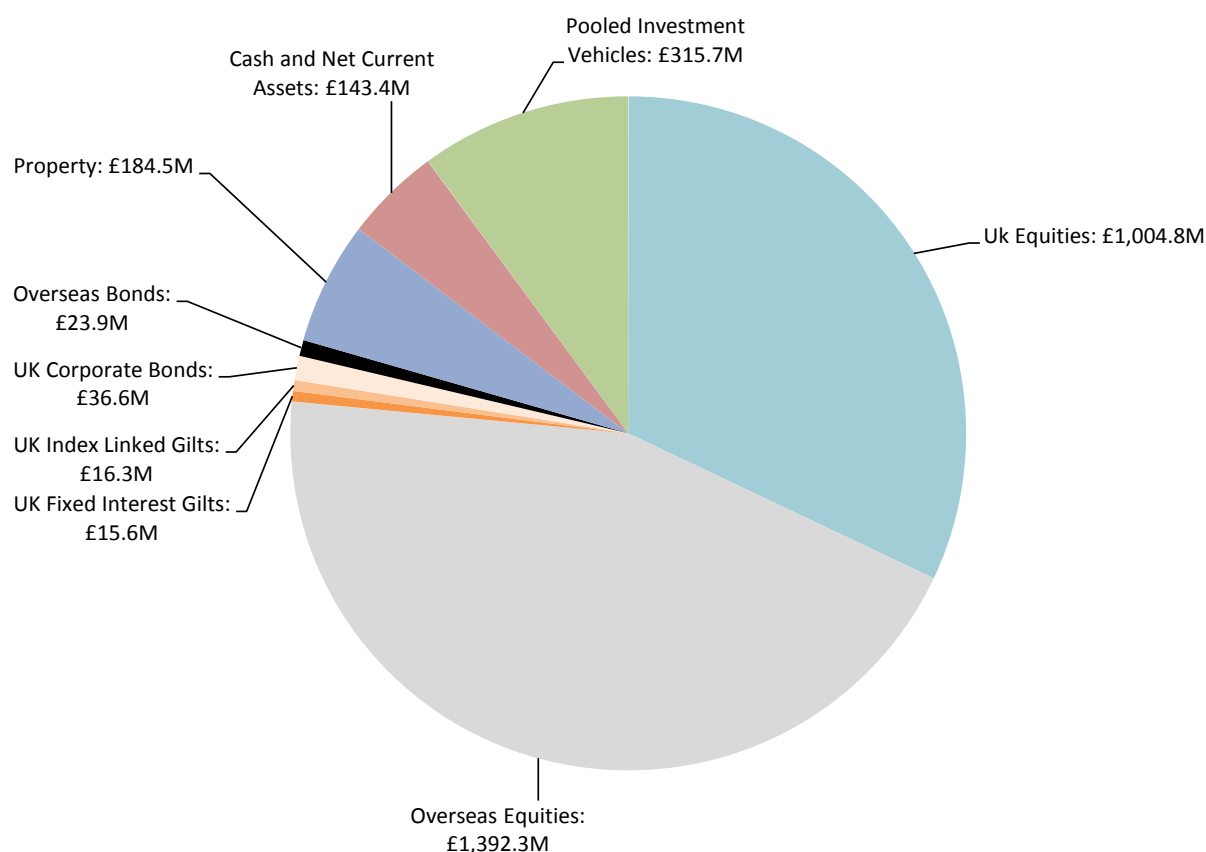
In November 2016 the Office for National Statistics announced that a different index "CPIH" which also makes allowance for owner-occupier housing costs, is to be its preferred inflation measure in future.

The Government has not yet announced whether CPIH will replace CPI as the measure for indexing public service pensions. This valuation therefore continues to make allowance for indexation and revaluation to be based on CPI.

Asset data

The audited accounts for the Fund for the year ended 31 March 2016 show the value of the assets to be £3,133.1M at the valuation date.

The assets of £3,133.1M were invested as follows:



- This summary excludes assets for defined contribution AVC accounts.

The Statement of Investment Principles 2015 sets out the range of permitted investment in each asset class, expressed as a % of the Fund and describes the Fund's investment strategy as follows:

The LGPS Regulations require that administering authorities should "have regard to the need for diversification of investments" in order to reduce the risk of over concentration in one class of investment, which performs badly.

The Asset / Liability Study, carried out every 3 years, establishes a Benchmark asset mix against which actual Fund performance can be measured. It is recognised that the Teesside Fund is a UK based Fund with the majority of its liabilities in the UK. As part of this process a maximum / minimum range of % of the Fund to be held in the various categories of investment is determined and will be reviewed as part of the Asset/Liability Study process.

Funding objective

Terminology

Past service liabilities

This is the present value of the benefits to which members are entitled based on benefits accrued to the valuation date, assessed using the assumptions agreed between the Administering Authority and the Actuary.

Funding objective

To hold sufficient and appropriate assets to meet the past service liabilities.

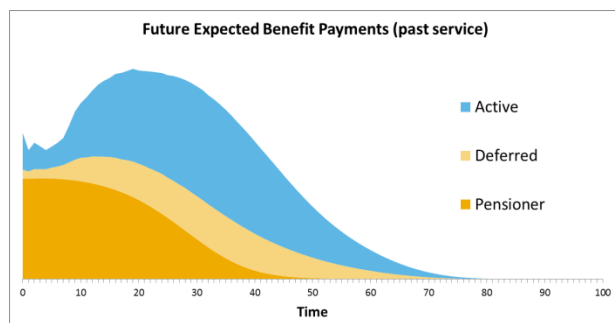
Funding strategy statement

Sets out the Administering Authority's strategy for meeting the funding objective

The Administering Authority's funding objective is to hold assets which are at least equal to the past service liabilities i.e. to meet the funding objective.

In order to calculate the past service liabilities and the cost to the Employers of future benefit accrual, the benefits paid out by the Fund are estimated for each year into the future. The estimated benefit payments are then 'discounted back' to the valuation date using an agreed rate of interest known as the discount rate.

The benefit payments from the Fund are expected to be made for a very long period – the chart below shows the cashflow pattern for the current membership of a typical LGPS Fund (based on past service benefits). Some cashflows will be fixed but others will be linked to future levels of salary growth and inflation.



Source: 2016 valuation for a "typical" LGPS Fund

The discount rate

The funding strategy statement describes the risk based approach used to set the funding strategy and hence the discount rate. Under this risk based approach:

- The discount rate assumes indefinite future investment in assets similar to the Fund's holdings at the valuation date (allowing for any known or planned changes to the long term investment strategy as appropriate).
- This valuation has been undertaken on a prudent basis. Prudence is achieved through the use of discount rates (expected return assumptions) which have a better than evens chance of being achieved by the Fund's assets. Information on the level of prudence (or risk) in the funding strategy is contained in the Fund's Funding Strategy Statement.

Summary of method and assumptions

The Administering Authority agreed the assumptions used to calculate the past service liabilities and the cost of future benefit accrual. The table below summarises the key assumptions, together with those used for the previous valuation, and the reasons for any change. Further details of all of the assumptions are set out in Appendix 5.

Assumption	This valuation	Previous valuation	Rationale for change
Discount rate	4.7% pa*	5.4% pa	Updated to reflect the Administering Authority's attitude to risk and financial conditions at 31 March 2016.
Rate of revaluation of pension accounts	2.0% pa	2.4% pa	Updated to reflect the outlook for CPI inflation at 31 March 2016.
Pension increases (on pension in excess of GMPs)	2.0% pa	2.4% pa	
Pensionable Pay Increases	3.0% pa	3.9% pa	Updated to reflect financial expectations at 31 March 2016.
Post-retirement mortality assumption – base table	Standard SAPS S2P tables with scaling factors of: Men: 100% Women: 100%	Standard SAPS S1N tables with scaling factors of: Men: 100% Women: 100%	Updated to reflect recent research and the Fund's pensioner mortality experience since the last valuation
Post-retirement mortality assumption – future improvements	CMI 2014 core projections with long-term improvement rate of 1.5% pa	CMI 2012 core projections with long-term improvement rate of 1.5% pa	Updated to reflect more recent CMI publications and our view of best estimate improvements

*Note: The Discount rate used for Durham and Tees Valley Airport was 3.9%.

We show below the assumed life expectancies for current members resulting from these mortality assumptions

Assumed Life expectancy at age 65	Member currently aged 65		Member currently aged 45	
	This valuation	Previous valuation	This valuation	Previous valuation
Men	22.7	22.8	24.9	25.0
Women	24.8	25.3	27.1	27.6

Please note that the 2013 life expectancy figures are those set out in the 2013 valuation report and do not allow for improvements in mortality between 2013 and 2016. Allowance for such improvements would increase the life expectancy by around 0.3 years.

In our view these assumptions are appropriate for the purposes of the valuation, and setting Employer contributions to the Fund.

As for the previous valuation, the past service liabilities have been calculated using the projected unit method. This method, with a one year control period, has also been used to calculate the cost of future benefits building up for most Employers. The attained age method has been used for some Employers who do not admit new employees to the Fund.

Shared risks

Funding gains or losses arising from the following risks are pooled across all Employers in the Fund:

Risk	Method
Cash sum on death in service	Shared in proportion to the payroll of active members

Past service results

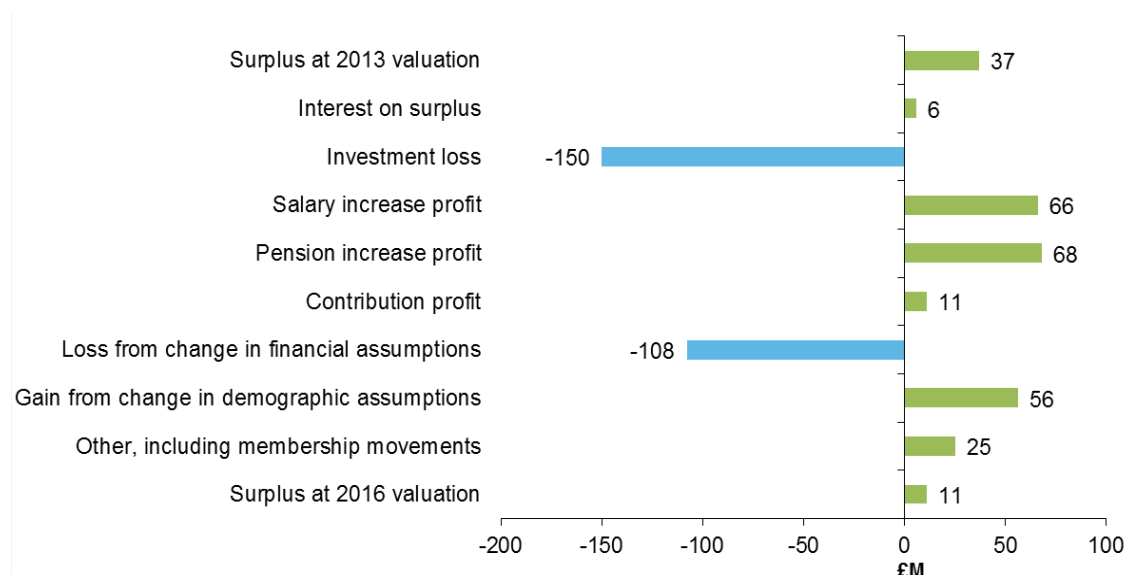
A comparison of the Fund's past service liabilities with the assets is shown below. The past service liabilities have been calculated using the assumptions described in the previous section.

	£M
Value of past service benefits for	
Actives	1,142.0
Deferred members	529.2
Pensioners	1,450.8
Total past service liabilities	3,122.0
Value of assets	3,133.1
Past service surplus / (shortfall)	11.1
Funding ratio	100%

Reasons for change in past service position

At the previous valuation the Fund had a surplus of £37.0M. The funding position has therefore deteriorated by £25.9M over the period.

The chart below shows the key reasons for the change in funding position.



As the chart shows, the main factors which have led to a deterioration of the funding position are:

- Investment returns below the discount rate adopted at the 2013 valuation
- The change in the financial assumptions (principally the fall in the discount rate relative to inflation)

These have been partially offset by the following main factors which on their own have improved the funding position:

- Lower than assumed pay growth and pension increases
- Contributions paid by employers towards paying off any deficit disclosed at the 2013 valuation
- Changes to the demographic assumptions, and
- Membership experience and other items.

Addressing the shortfall / surplus

Employers' contributions may need to be adjusted in light of any surplus or shortfall.

There is an aggregate surplus in the Fund at the valuation date.

If this surplus were to be run off through a reduction to the contribution rates, expressed as a percentage of the total Pensionable Payroll of the Employers in the Fund, the aggregate percentage reduction would be 0.1% of Pensionable Payroll over 20 years from 1 April 2017.

The assumptions used to calculate the recovery plan are the same as those used to calculate the past service liabilities.

Any Employers in surplus may be permitted to reduce their contributions below the cost of accruing benefits, by spreading the surplus element over the maximum recovery period. We have only reduced employer rates below the cost of accruing benefits where instructed to do so by the Administering Authority.

Employers with a shortfall will need to pay additional contributions to remove their shortfall over an appropriate period.

In practice, different recovery periods apply to individual Employers or groups of Employers in the Fund. The actual contributions to be paid by each Employer or group are set out in the Rates and Adjustments Certificate and reflect each Employer's specific recovery period and funding position.

For some Employers, contribution increases will be phased in over a number of years (or 'steps') as permitted by the Funding Strategy Statement.

Terminology

Recovery plan

A plan for making good any shortfall (or reducing any surplus) relative to the past service liabilities.

Recovery period

The period for which contributions are adjusted to remove the shortfall (or surplus).

Shortfall contributions

The additional contributions to remove the shortfall by the end of the recovery period.

Cost to the Employers of future benefits

The table below shows the aggregate calculated cost to Employers at the valuation date of benefits that members will earn in future (the aggregate primary contribution rate). Contributions at the aggregate primary rate would be appropriate if the Fund had no surplus or shortfall.

These rates have been calculated using the same assumptions as used to calculate the past service liabilities.

	% of Pensionable Pay
Value of benefits building up	21.5
Death in service cash sum	0.3
Administration expenses	0.4
Less member contributions	(6.5)
Net cost to the Employers (primary contribution rate)	15.7

The aggregate Employer future service contribution rate (the weighted average, by payroll, of the individual employers' primary rates) is 15.7% of Pensionable Pay.

Employers will also pay additional contributions to remove the shortfall for past service liabilities, or, where individual employers are in surplus, may pay lower contributions to reflect this surplus.

The main factor which has led to an increase in the primary contribution rate is the change in the financial assumptions (principally the fall in the discount rate relative to inflation).

The rate has also increased as a consequence of the take up of the 50:50 scheme being lower than assumed in the 2013 valuation. In practice the take up rate has been extremely low.

These factors have been partially offset by the change in demographic assumptions.

Risks and uncertainties

The Fund faces a number of key risks which could affect its funding position.

These risks include:

- Funding risk – the risk that the value placed on the past service liabilities is set too low and contributions paid into the Fund prove insufficient to meet the payments as they fall due.
- Employer risk – the risk that an Employer is no longer able to meet its liabilities in the Fund. For example, due to the insolvency of an Employer.
- Investment risks – the risk that investment returns are lower than allowed for in the valuation, and also that the assets are volatile and move out of line with the liabilities, so the funding position is not stable.
- Longevity risk – the risk that Fund members live for longer than expected and that pensions would therefore need to be paid for longer resulting in a higher cost for the Fund.
- Inflation risk – the risk that inflation is higher than expected, resulting in higher pension increases (and payments to pensioners) than allowed for in the valuation.
- Options for members (or other parties) – the risk that members exercise options resulting in unanticipated extra costs. For example, members could exchange less of their pension for a cash lump sum than allowed for in the valuation.
- Legislative/Regulatory risk – the risk that changes to general and LGPS specific regulations, taxation, national changes to pension requirements, or employment law result in an increased cost of administration, investment or funding for benefits.

To quantify some of these risks, the chart on the following page shows the approximate impact of the following one-off step changes on the Fund's funding position (all other elements of the valuation basis being unchanged):

- Life expectancy at age 65 is two years longer than anticipated (with corresponding increases at other ages).
- A 1% pa fall in long term expected investment returns (the discount rate) with no change in asset values.
- A 1% p.a. increase in expected price inflation (measured by CPI) with no change to expected Pensionable Pay increases.
- A 25% fall in the market value of equities (with no change in expectations of future returns / the discount rate).
- A 1% p.a. increase in expected Pensionable Pay increases.

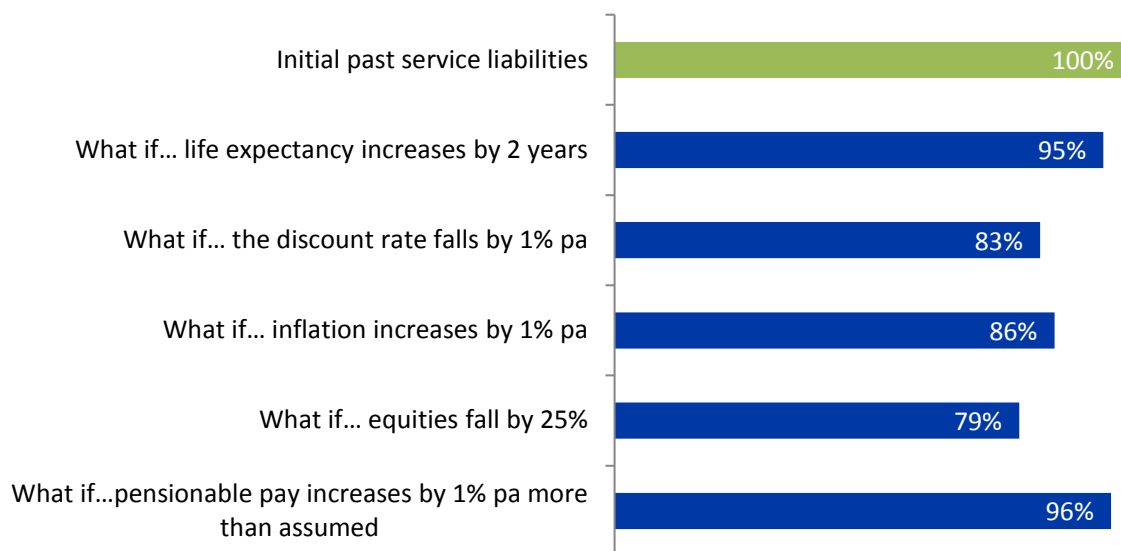
In practice, some of these changes may be partially offset by other changes in the values of the assets or the liabilities. For example, a reduction in the expected investment return or inflation might lead to a compensating change in asset values, or a change in asset values might lead to a compensating change in expected investment returns.

These potential effects are not shown in the chart on the next page.

Further information on the risks and actions taken by the Fund to mitigate them can be found in the Fund's Funding Strategy Statement.

Risks and uncertainties

The chart below shows the approximate impact on the funding ratio of the Fund under a number of different scenarios.



The analysis demonstrates that on the approach used the Fund is susceptible to:

- Falls in expected investment returns (the discount rate) to the extent not matched by higher asset values
- Falls in the market value of equities to the extent not offset by higher expected future returns
- Rising inflation and pay increase expectations
- Members living longer than expected

The scenarios considered are not 'worst case' scenarios, and could occur in combination (rather than in isolation).

The future service contribution rate (primary contribution rate) is also highly sensitive to a number of the above factors: falls in expected investment returns, rising inflation expectations and increases in life expectancy.

All the risks considered have a negative impact on the funding ratio. Opposite movements could also apply for each scenario which would result in an increase in the funding ratio.

Individual Employer contribution rates

Employers, or groups of Employers, are set their own contribution rate which reflects their specific circumstances.

The Employer contribution rates are set by the Actuary taking into account a number of factors including:

- Regulation 62 – which requires the Actuary to have regard to
 - The existing and prospective liabilities
 - The desirability of maintaining as nearly a constant a primary contribution rate as possible
 - The Administering Authority's Funding Strategy Statement, and
 - The requirement to secure the solvency of the Fund and the long-term cost efficiency of the Scheme, so far as relating to the Fund.
- The results of the valuation.
- Discussions between the Actuary, the Administering Authority and Employers.

Contribution rates for Employers which contribute to the Fund are set out in the Rates and Adjustments Certificate in Appendix 7.

Rates of contribution payable by individual Employers, or groups of Employers, differ because they take into account Employers' particular membership profiles and funding ratios and, in some cases, the assumptions and recovery periods are specific to the Employer's circumstances. We have agreed with the Administering Authority that increases in contribution rates for some Employers can be phased in over periods not exceeding 3 years as set out in the Funding Strategy Statement.

For certain Employers who are in surplus, it has been agreed with the Administering Authority that the Employer can use the surplus to support the payment of contributions to the Fund at a rate below the future service contribution rate.

Terminology

Rates and Adjustments Certificate

Specifies the contributions payable by the Employers until March 2020.

The contributions payable by individual Employers are set out in Appendix 7.

The aggregate Employer contributions certified for the 3 years from 1 April 2017 can be summarised as follows:

Year from 1 April	% of Pensionable Pay	Plus aggregate contribution amount (£M)
2017	15.5	0.79
2018	15.7	0.81
2019	15.9	0.83

- The annual contribution amounts above are the aggregate of the additional contribution amounts certified for individual Employers in each year.
- Payments to meet additional costs arising from early retirements and other increases in benefits are payable in addition.
- At the end of the period shown above, the annual contribution amounts for each employer or group are anticipated to increase by 3.0% pa until the end of the relevant recovery period. Thereafter, aggregate contributions are anticipated to be in line with the future service contribution rate of that employer. These contributions will be subject to review at future actuarial valuations.

Individual Employer contribution rates cont.

- Member contributions are payable in addition to the Employers' contribution rates set out above and in Appendix 7. The member contributions are set out in the Regulations. AVCs may be payable in addition.
- Contributions by active members and Employers should be paid to the Fund at such time and at such frequency as required by the Regulations and the Administering Authority's Pension Administration Strategy. Any monetary shortfall contributions have been calculated on the basis that they are payable in regular instalments over the relevant year.

Final comments

The key results from this valuation are:

The Fund's assets were £3,133.1M and the past service liabilities were £3,122.0M which correspond to:

- a surplus of £11.1M and
- a funding ratio of 100%.

The cost to the Employers of future benefits building up is 15.7% of Pensionable Pay.

If the surplus is removed over 20 years from 1 April 2017, the aggregate Employer contributions needed would be equivalent to 15.6%* of Pensionable Pay until 31 March 2037, reverting to 15.7% of Pensionable Pay thereafter.

** if the membership remains broadly stable and pay increases in line with our assumptions.*

Developments since the valuation date

- Market movements since 31 March 2016

Since 31 March 2016, equity markets have generally risen, although the impact of this has been partially offset by falls in the risk-based discount rate that would be used if the valuation were being carried out at a more recent date.

Overall, we believe that market movements since the valuation date are likely to have increased the future service (primary) contribution rate but are likely to have had a positive impact on the funding ratio in the period to 31 December 2016. Taking these two offsetting factors together, and bearing in mind the long-term nature of the Fund, our opinion is that certifying contributions based on market conditions as at the valuation date remains appropriate.

- Employers joining or exiting since the valuation date

Contributions for employers joining since 31 March 2016 will be advised separately. Similarly, a revised Rates and Adjustments will have been prepared as necessary for any employers exiting the Fund since 31 March 2016.

Monitoring the Fund

In the light of the volatility inherent in situations where investments do not match liabilities, the Administering Authority monitors the financial position in an appropriate manner on a regular basis.

The Administering Authority will also consider monitoring the position of individual employers, particularly those which may exit the Fund before 1 April 2020. Where permitted by the Regulations and appropriate, contributions for those employers may be amended before the next valuation.

Next actuarial valuation

The next formal actuarial valuation is due to take place as at 31 March 2019.

If actual experience before the next actuarial valuation is in line with the assumptions in this report, we expect the Fund's funding ratio to remain at approximately 100%.

Appendix 1: Legal framework

It is a legal requirement to carry out a full valuation at least once every three years.

This report was commissioned by and is produced solely for the use of the Administering Authority.

It is produced in compliance with:

- Regulation 62 of the Local Government Pension Scheme Regulations 2013.
- The terms of the agreement between the Administering Authority and Aon Hewitt Limited, on the understanding that it is solely for the benefit of the addressee.

Unless prior written consent has been given by Aon Hewitt Limited, this report should not be disclosed to or discussed with anyone else unless they have a statutory right to see it.

We permit the Administering Authority to release copies of this report to the following parties only:

- Any Employer which contributes to the Fund.
- The Department for Communities and Local Government.

We also permit the Department for Communities and Local Government to pass our report to the Government Actuary's Department in connection with their statutory duties. None of the above bodies has our permission to pass our report on to any other parties.

Notwithstanding such consent, Aon Hewitt Limited does not assume responsibility to anyone other than the addressee of this report.

Appendix 2: Membership data

Membership data was provided by the Administering Authority.

Active members		Number	Average age	Total pensionable pay (£M pa)	Average pensionable pay (£000 pa)	Average service (years)	Average post 2014 pension (£)
Men	2016	5,833	45.6	134,245	23,015	10.2	5,123
	2013	6,044	45.5	142,113	23,513	12.8	N/A
Women	2016	16,804	45.5	244,401	14,544	6.3	9,293
	2013	16,944	45.3	256,924	15,163	8.1	N/A
Total	2016	22,637	45.5	378,646	16,727	7.3	14,416
	2013	22,988	45.4	399,036	17,358	9.4	N/A

Notes:

Pensionable Pay is over the year to the valuation date, and includes annualised pay for new entrants during the year. Actual part-time pay is included for part-timers. It is based on the 2014 scheme definition of pensionable pay.

The average ages shown in these tables are unweighted.

Average service at the 2016 valuation is to 31 March 2014.

Deferred members		Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
Men	2016	5,684	44.8	12,986	2,285
	2013	5,115	44.4	11,477	2,244
Women	2016	16,769	46.3	22,195	1,324
	2013	14,519	45.0	17,852	1,230
Total	2016	22,453	45.9	35,181	1,567
	2013	19,634	44.8	29,329	1,494

Notes:

The deferred pension amounts shown above include increases up to and including April 2016 (2013: April 2013). There were also 2,018 (2013: 1,189) members who had yet to decide whether to take transfer payments and suitable allowance has been made in our calculations.

Pensioners		Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
Men	2016	6,486	70.1	46,020	7,095
	2013	6,123	69.4	42,512	6,943
Women	2016	12,435	70.3	42,452	3,414
	2013	11,340	69.6	36,797	3,245
Dependants	2016	2,778	71.1	7,118	2,562
	2013	2,587	71.4	6,126	2,368
Total	2016	21,699	70.3	95,589	4,405
	2013	20,050	69.8	85,435	4,261

Notes:

The pension amounts shown above include the increase awarded in April 2016 (2013: April 2013). The figures include 177 children in receipt of pensions (2013: 144). Suitable allowance has been made for these in our calculations.

Appendix 3: Benefits

The benefits of the Local Government Pension Scheme are set out in Regulations, the principal Regulations currently being:

- the Local Government Pension Scheme Regulations 2013 (as subsequently amended)
- the Local Government Pension Scheme (Transitional Provisions, Savings and Amendment) Regulations 2014 (as subsequently amended)

A broad summary of the benefits payable to active members as at 31 March 2016 is given below. This reflects our understanding of the Regulations at the time of writing. This may however be subject to change and readers should refer to the Regulations for further details.

	Benefits accrued before 1 April 2014	Benefits accrued after 31 March 2014
Type of scheme	Final salary	Career average revalued earnings (CARE)
Normal Retirement / Pension Age	65	Linked to State Pension Age (or age 65 if higher)
Member contributions	No longer applicable	Between 5.5% of pay and 12.5% of actual Pensionable Pay dependent on contribution band the member is in
50:50 option	Not applicable	Members can opt to pay 50% contributions for 50% of member's pension benefit (dependants' benefits not affected)
Pensionable Pay	Generally total pay (excluding non-contractual overtime)	Generally total pay (including non-contractual overtime)
Final Pay	Generally Pensionable Pay over the 12 months prior to retirement or earlier exit or, if higher, in one of the preceding two years.	Not applicable
Pensionable service	Membership of Fund (years and days), plus periods of credited service	Not applicable

	Benefits accrued before 1 April 2014	Benefits accrued after 31 March 2014
Normal retirement pension	<p>1/60 of Final Pay for each year of Pensionable Service on or after 1 April 2008.</p> <p>For each year of Pensionable Service before 1 April 2008:</p> <ul style="list-style-type: none"> ▪ a pension of 1/80 of Final Pay, plus ▪ a cash sum of 3/80 of Final Pay 	<p>1/49 of Pensionable Pay received during each year of membership from 1 April 2014, revalued.</p> <p>The resulting accumulated pension is called the 'pension account'.</p>
Retirement cash sum	<p>Pension can be surrendered for additional cash sum to a maximum cash sum of one quarter of the total capital value of benefits.</p> <p>Conversion rate is £12 for each £1 pa of pension given up</p>	
Early retirement pension	<p>Reduced pension payable on retirement after age 60, or after age 55 with Employer consent.</p> <p>Pension calculated as for normal retirement but based on Pensionable Service to early retirement date, and reduced for early payment.</p> <p>Certain categories of member eligible for protection can retire on unreduced pension if their age plus Pensionable Service is greater than or equal to 85 years, with Employer consent required if under age 60.</p>	<p>Reduced pension payable on retirement after age 55.</p> <p>Pension calculated as for normal retirement but based on revalued Pensionable Pay up to early retirement date (and final Pensionable Pay at early retirement in relation to final salary benefits), and reduced for early payment.</p> <p>Certain categories of member eligible for protection can retire on unreduced pension if their age plus Pensionable Service is greater than or equal to 85 years, with employer agreement required if under age 60.</p>
Incapacity and ill-health pensions	<p>In each case members must</p> <ul style="list-style-type: none"> ▪ be permanently incapable of efficiently discharging the duties of the employment they were engaged in to qualify and ▪ be incapable of immediately undertaking any gainful employment 	

	Benefits accrued before 1 April 2014	Benefits accrued after 31 March 2014
Incapacity and ill-health pensions (continued)	<p>Tier 1</p> <ul style="list-style-type: none"> Payable to members with more than 2 years of Pensionable Service. Immediate payment of accrued pension, plus an enhancement equal to the amount of earned pension the member would have accrued between the date of leaving and Normal Pension Age, based on Assumed Pensionable Pay. <p>To qualify for this benefit the member must be unlikely to be capable of undertaking any gainful employment before Normal Pension Age.</p> <p>Tier 2</p> <ul style="list-style-type: none"> Payable to members with more than 2 years of Pensionable Service. Immediate payment of accrued pension, plus an enhancement equal to 25% of the Tier 1 enhancement. <p>To qualify for this benefit the member must be expected to be capable of undertaking gainful employment at some point after 3 years, but before Normal Pension Age.</p> <p>Tier 3</p> <p>Subject to members having qualifying service of 2 years or more:</p> <ul style="list-style-type: none"> Payable to members with more than 3 months' Pensionable Service based on Final Pay at exit and Pensionable Service completed to date of exit. To qualify for this benefit the member must be expected to be capable of undertaking gainful employment at some point within 3 years of date of exit. Payable for 3 years or until gainful employment obtained, if earlier. 	
Leaving Pensionable Service	<p>Pension payable on retirement at Normal Retirement Age based on Final Pay at exit and Pensionable Service to date of exit.</p> <p>Certain categories of member can retire early on unreduced pension if aged 60 or over and their age plus service is greater than or equal to 85 years. Service in this case includes the period between date of exit and date pension commences.</p>	<p>Pension payable on retirement at Normal Pension Age calculated as for normal retirement based on revalued Pensionable Pay during period of membership.</p>

	Benefits accrued before 1 April 2014	Benefits accrued after 31 March 2014
CARE revaluation in service	Not applicable	In line with increases in the Consumer Prices Index (CPI)
Deferred pension revaluation after leaving	<ul style="list-style-type: none"> Guaranteed Minimum Pensions (GMPs) increase in deferment in line with State revaluation factors. Deferred pensions in excess of GMPs increase in line with CPI 	In line with CPI (subject to a minimum of zero)
Pension increases in payment	<ul style="list-style-type: none"> GMPs accrued after 6 April 1988 increase at the lower of 3% pa and CPI, with the exception of members who reach State Pension Age between 6 April 2016 and 5 December 2018. Pensions in payment in excess of GMPs, and GMPs accrued after 6 April 1988 for members who reach State Pension Age between 6 April 2016 and 5 December 2018, increase in line with CPI. 	In line with CPI (subject to a minimum of zero)
Death benefits	<ul style="list-style-type: none"> A cash sum of 3 x Assumed Pensionable Pay at exit. 	
	A partner's pension of 1/160 of Final Pay for each year of Pensionable Service before 1 April 2014.	A partner's pension of 1/160 of revalued Pensionable Pay received during membership from 1 April 2014 plus an enhancement to pension of 1/160 of Assumed Pensionable Pay at death for each year between death and Normal Pension Age.
	<ul style="list-style-type: none"> Partners are spouses, civil partners and cohabitants Children's pensions may be payable 	
State pension scheme	The Scheme was contracted out of the State Second Pension Scheme until contracting-out was abolished in April 2016.	

	Benefits accrued before 1 April 2014	Benefits accrued after 31 March 2014
Protections / underpins	<p>Pre 2014 benefits protected (including link to eventual Final Pay).</p> <p>Underpin of benefits on 2008 Scheme structure for members aged over 55 in April 2012.</p> <p>Rule of 85 retained for members aged over 60 on 31 March 2016. Tapered protection of Rule of 85 for members aged over 60 on 31 March 2020.</p> <p>Rule of 85 retained for service before 31 March 2008 for those with scheme membership before 1 October 2006.</p>	
Vesting period	A refund of member contributions is paid for members leaving membership with qualifying service of less than 2 years.	

Appendix 4: Consolidated revenue account

We show a summary of the revenue and outgo of the Fund since the previous valuation below, taken from the Fund's Report and Accounts.

	Total £000s
Fund as at 31 March 2013	2,929,601
Income	
Contributions	
Employer normal	175,992
Employer additional	5,837
Employer special	12,591
Employee	76,597
Transfers-in	38,598
Investment income	267,910
Other	3,583
Total income	581,108
Outgo	
Pensions paid	282,856
Retirement cash sums	61,748
Transfers-out	93,076
Death benefits paid out	7,046
Refunds of contributions on leaving	291
Expenses	
Investment	8,023
Administration	6,281
State scheme premiums	139
Total outgo	459,460
Change in market value	81,869
Fund as at 31 March 2016	3,133,118

Appendix 5: Assumptions used to value the liabilities

The assumptions used for calculating the past service liabilities and the cost of future benefit accrual are summarised below.

Financial assumptions

Discount rate	4.7% pa*
Rate of Pensionable Pay increases (service up to 31 March 2014 only) (in addition to promotional increases)	3.0% pa
Rate of CPI price inflation	2.0% pa
Rate of revaluation of pension accounts	2.0% pa
Rate of pension increases on non GMPs on post 88 GMPs (where capped at 3% pa)	2.0% pa 1.8% pa
Rate of deferred pension increases non GMP GMP	2.0% pa 3.0% pa
Administration expenses	0.4% of Pensionable Pay

**Note: The Discount rate used for Durham and Tees Valley Airport was 3.9% pa, and the discount rate used for already orphaned liabilities was 2.1% pa.*

Demographic assumptions

Pre-retirement base mortality	Males: 50% of Standard SAPS S2P tables Females: 50% of Standard SAPS S2P tables	
Post-retirement base mortality	Males: 100% of Standard SAPS S2P tables Females: 100% of Standard SAPS S2P tables	
Ill-health retirement base mortality	Males: 110% of Standard SAPS S2 Ill Health tables Females: 110% of Standard SAPS S2 Ill Health tables	
Improvements to mortality	An allowance for improvements in line with the CMI 2014 improvements (subject to confirmation) (for men or women as appropriate) with a long-term annual rate of improvement of 1.5% pa.	
Promotional salary increases	Allowance has been made for age-related promotional increases (see sample rates below).	
Withdrawals	Allowance has been made for withdrawals from service (see sample rates below). On withdrawal, members are assumed to leave a deferred pension in the Fund.	
Retirement age	Members were assumed to retire at the following ages:	
	Member group	Assumed age at retirement
	Active members with protected Rule of 85 age (joined LGPS before 1 October 2006 and attained age 60 before 1 April 2020)	Rule of 85 age (or age 60 if higher). Any part of their pension payable from a later age will be reduced.
	Active members who joined before 1 April 2014 and not included in the above group	Age 65. Post 2014 pensions will be reduced if the member's State Pension Age is projected to be over age 65 at that point.
	Deferred members who joined the Fund before 1 April 2014 with protected Rule of 85 age	Rule of 85 age (or age 60 if higher). Any part of their pension payable from a later age will be reduced.
	Deferred members who joined the Fund before 1 April 2014 with no protected Rule of 85 age	Age 65.
	All other active and deferred members	State Pension Age (or age 65 if higher)
Retirement cash sum	Each member is assumed to surrender pension on retirement, such that the total cash received is 80% of the permitted maximum.	

<p>Family details</p>	<p>Each man was assumed to be three years older than his wife/partner.</p> <p>80% of non-pensioners were assumed to be married or have a spouse, civil partner or co-habitee ('partner') at retirement or earlier death.</p> <p>80% of pensioners were assumed to be married or have a partner at age 65.</p> <p>Partners were assumed to exhibit the same mortality as pensioners of the same sex who retired in normal health.</p> <p>No allowance for children's pensions.</p>						
<p>Retirement due to ill-health</p>	<p>Allowance has been made for retirements due to ill-health (see below). Proportions assumed to fall into the different benefit tiers are:</p> <table data-bbox="638 660 957 795"> <tr> <td>Tier 1</td> <td>80%</td> </tr> <tr> <td>Tier 2</td> <td>10%</td> </tr> <tr> <td>Tier 3</td> <td>10%</td> </tr> </table>	Tier 1	80%	Tier 2	10%	Tier 3	10%
Tier 1	80%						
Tier 2	10%						
Tier 3	10%						
<p>Take up of 50:50 scheme</p>	<p>All members are assumed to remain in the scheme they are in at the date of the valuation.</p>						

Sample rates

The table below illustrates the allowances made for withdrawals from service and ill-health retirement at various ages. Also shown is the allowance included for promotional pay increases, which is shown as the percentage increase over the next year.

Current age	Percentage promotional pay increase over year	Percentage leaving the Fund each year as a result of withdrawal from service		Percentage leaving the Fund each year as a result of ill-health retirement
		Male	Female	
20	2.9	13.9	13.2	0.00
25	2.0	9.2	8.9	0.00
30	1.2	6.5	7.4	0.02
35	0.5	5.1	6.4	0.02
40	0.0	4.1	5.3	0.04
45	0.0	3.3	4.4	0.09
50	0.0	2.6	3.3	0.17
55	0.0	2.3	2.6	0.34
60	0.0	1.4	1.2	0.75
65	0.0	1.4	1.2	0.89

Appendix 6: Membership experience

We have compared the actual numbers of deaths, retirements and other exits since the previous valuation with the numbers expected on the assumptions used for the 2016 valuation:

Type of exit	Men	Women
Death after retirement in normal health		
Actual	386	458
Expected	317	427
Death after retirement in ill health		
Actual	199	338
Expected	190	318
Death in service		
Actual	17	36
Expected	19	49
Withdrawals (excluding refunds)		
Actual	1,025	3,148
Expected	764	2,424
Ill-health retirements		
Actual	26	65
Expected	36	93

Appendix 7: Rates and Adjustments Certificate

Actuarial certificate given for the purposes of Regulation 62 of the Local Government Pension Scheme Regulations 2013.

In accordance with Regulation 62 of the Local Government Pension Scheme Regulations 2013 ('the 2013 Regulations'), we certify that contributions should be paid by Employers at the following rates for the period 1 April 2017 to 31 March 2020.

- Primary contribution rates for individual employers as shown below. The primary rate for the whole Fund, after applying a weighted average of the employers' individual rates, is 15.3% pa of Pensionable Pay.
- Individual adjustments (i.e. secondary contribution rates) which, when added to or subtracted from the primary rate for that employer, produce the following minimum Employer contribution rates.

Employer	Primary Contribution rate % Pensionable Pay	Secondary contributions (% Pensionable Pay and £s) Year commencing 1 April			Total contributions (% Pensionable Pay and £s) Year commencing 1 April		
		2017	2018	2019	2017	2018	2019
4Children	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Academy Pool ⁽¹⁾	15.50%	0.1%	1.1%	2.0%	15.6%	16.6%	17.5%
Beamish Museum	15.70%	(1.4%)	(0.4%)	0.0%	14.3%	15.3%	15.7%
Business and Enterprise North East	12.70%	(2.0%) plus £58,000	(1.0%) plus £60,000	£62,100	10.7% plus £58,000	11.7% plus £60,000	12.7% plus £62,100
Capita Managed IT Solutions LTD	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Care Quality Commission	17.90%	0.0%	0.0%	0.0%	17.9%	17.9%	17.9%
Carillion JM Ltd	22.00%	(3.6%)	(1.8%)	0.0%	18.4%	20.2%	22.0%
Cleveland Fire Brigade	16.10%	£52,500	£54,100	£55,700	16.1% plus £52,500	16.1% plus £54,100	16.1% plus £55,700
Cleveland Fire Support Network	16.10%	0.0%	0.0%	0.0%	16.1%	16.1%	16.1%

Employer	Primary Contribution rate % Pensionable Pay	Secondary contributions (% Pensionable Pay and £s) Year commencing 1 April			Total contributions (% Pensionable Pay and £s) Year commencing 1 April		
		2017	2018	2019	2017	2018	2019
Coast and Country Housing	17.20%	0.0%	0.0%	0.0%	17.2%	17.2%	17.2%
College Pool ⁽²⁾	15.10%	0.1%	0.1%	0.1%	15.2%	15.2%	15.2%
Community Integrated Care	22.70%	0.3%	0.3%	0.3%	23.0%	23.0%	23.0%
Creative Management Services Ltd	20.70%	(3.7%)	(1.8%)	0.0%	17.0%	18.9%	20.7%
Diocese of Middlesbrough Trust	19.60%	4.0%	2.0%	0.0%	23.6%	21.6%	19.6%
Durham Tees Valley Airport	20.60%	0.6% plus £191,700	0.6% plus £198,400	0.6% plus £205,400	21.2% plus £191,700	21.2% plus £198,400	21.2% plus £205,400
Ecocleen Services Limited	28.90%	(8.9%) plus £300	(3.9%) plus £300	£300	20.0% plus £300	25.0% plus £300	28.9% plus £300
Erimus Housing	19.00%	(3.0%)	(3.0%)	(3.0%)	16.0%	16.0%	16.0%
Fabrick Housing Group	18.20%	(2.2%)	(2.2%)	(2.2%)	16.0%	16.0%	16.0%
Fleet Factors (MBC)	21.90%	(0.5%)	(0.2%)	0.0%	21.4%	21.7%	21.9%
Fleet Factors (RCBC)	16.00%	0.0%	0.0%	0.0%	16.0%	16.0%	16.0%
Forward Swindon	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Future Regeneration of Grangetown	22.20%	(2.6%) plus £700	(1.3%) plus £700	£700	19.6% plus £700	20.9% plus £700	22.2% plus £700
Hartlepool Borough Council	15.50%	(0.3%)	(0.1%)	0.0%	15.2%	15.4%	15.5%
Hartlepool Care Services Ltd	22.50%	(3.7%)	(1.9%)	0.0%	18.8%	20.6%	22.5%
Housing Hartlepool	14.50%	1.5%	1.5%	1.5%	16.0%	16.0%	16.0%
KGB Cleaning & Supp Servs Ltd	14.60%	0.4%	0.4%	0.4%	15.0%	15.0%	15.0%
KGB Cleaning Ltd - LJS	14.80%	0.0%	0.0%	0.0%	14.8%	14.8%	14.8%

Employer	Primary Contribution rate % Pensionable Pay	Secondary contributions (% Pensionable Pay and £s) Year commencing 1 April			Total contributions (% Pensionable Pay and £s) Year commencing 1 April		
		2017	2018	2019	2017	2018	2019
KGB Cleaning Ltd - SSFC	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kier Business Services Ltd.	15.30%	0.0%	0.0%	0.0%	15.3%	15.3%	15.3%
Liberata	19.70%	(19.7%)	(19.7%)	(19.7%)	0.0%	0.0%	0.0%
Mellors Catering - CENTRAL	21.20%	(4.0%)	(2.0%)	0.0%	17.2%	19.2%	21.2%
Mellors Catering - Dormanstown	21.20%	(4.0%)	(2.0%)	0.0%	17.2%	19.2%	21.2%
Mellors Catering Ltd - Eston	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mellors Catering Services Ltd (Normanby)	21.50%	(4.3%)	(2.3%)	(0.3%)	17.2%	19.2%	21.2%
Middlesbrough Borough Council	15.30%	0.0%	0.0%	0.0%	15.3%	15.3%	15.3%
OCS Limited	16.10%	0.0%	0.0%	0.0%	16.1%	16.1%	16.1%
One Awards Limited	15.90%	(1.3%) plus £8,000	(0.6%) plus £8,300	£8,600	14.6% plus £8,000	15.3% plus £8,300	15.9% plus £8,600
One IT Solutions Ltd	15.10%	0.1%	0.1%	0.1%	15.2%	15.2%	15.2%
Other Scheduled Bodies Pool ⁽³⁾	17.30%	(2.1%)	(1.1%)	0.0%	15.2%	16.2%	17.3%
Police & Crime Commissioner for Cleveland	14.90%	(1.3%)	(0.3%)	0.7%	13.6%	14.6%	15.6%
Redcar and Cleveland BC	16.00%	0.0%	0.0%	0.0%	16.0%	16.0%	16.0%
SLM Charitable Trust (MBC)	15.30%	0.0%	0.0%	0.0%	15.3%	15.3%	15.3%
SLM Community Leisure Charitable Trust (RCBC)	18.50%	(0.9%) plus £5,400	(0.9%) plus £5,400	£5,400	17.6% plus £5,400	17.6% plus £5,400	18.5% plus £5,400
SLM Fitness & Health Ltd. (MBC)	15.30%	0.0%	0.0%	0.0%	15.3%	15.3%	15.3%
SLM Fitness and Health Ltd (RCBC)	18.50%	0.0%	0.0%	0.0%	17.6%	17.6%	18.5%
SLM Food & Beverage Ltd. (MBC)	15.30%	0.0%	0.0%	0.0%	15.3%	15.3%	15.3%

Employer	Primary Contribution rate % Pensionable Pay	Secondary contributions (% Pensionable Pay and £s) Year commencing 1 April			Total contributions (% Pensionable Pay and £s) Year commencing 1 April		
		2017	2018	2019	2017	2018	2019
SLM Food and Beverage Ltd (RCBC)	18.50%	0.0%	0.0%	0.0%	17.6%	17.6%	18.5%
Sopra Steria Ltd	14.90%	(1.3%)	(0.3%)	0.7%	13.6%	14.6%	15.6%
Stagecoach Transit	23.90%	3.3% plus £163,000	3.3% plus £163,000	3.3% plus £163,000	27.2% plus £163,000	27.2% plus £163,000	27.2% plus £163,000
Stockton on Tees Borough Council	15.70%	(0.4%)	(0.1%)	0.0%	15.3%	15.6%	15.7%
Tascor Services Limited - Custody	18.00%	(0.6%)	(0.3%)	0.0%	17.4%	17.7%	18.0%
Tascor Services Limited - PFI	18.00%	(0.6%)	(0.3%)	0.0%	17.4%	17.7%	18.0%
Taylor Shaw - Holy Rosary	20.40%	(3.6%)	(1.8%)	0.0%	16.8%	18.6%	20.4%
Taylor Shaw - Riverdale	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taylor Shaw - St Peters	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tees Active Limited	18.20%	(3.4%)	(1.7%)	0.0%	14.8%	16.5%	18.2%
Tees Valley Combined Authority	15.90%	0.0%	0.0%	0.0%	15.9%	15.9%	15.9%
The Big Life Company Ltd	17.80%	0.0%	0.0%	0.0%	17.8%	17.8%	17.8%
The Chief Constable of Cleveland	14.90%	(1.3%)	(0.3%)	0.7%	13.6%	14.6%	15.6%
Thirteen Housing	16.00%	0.0%	0.0%	0.0%	16.0%	16.0%	16.0%
Tristar Homes Ltd	15.50%	0.5%	0.5%	0.5%	16.0%	16.0%	16.0%
University of Teesside	14.40%	(0.1%) plus £310,000	£320,900	£332,100	14.3% plus £310,000	14.4% plus £320,900	14.4% plus £332,100
Wolseley UK Ltd	0.00%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Notes:

(1) The **Academy Pool** consists of the following employers:

63: Unity City Academy, 64: Kings Academy, 181: Macmillan Academy, 206: Freebrough Academy, 207: North Shore Academy, 208: Thornaby Academy, 224: Eston Park Academy, 225: Brambles Academy, 226: Pennyman Primary Academy, 227: Chandlers Ridge Academy, 228: Nunthorpe Academy Limited, 229: Ormesby School, 230: KTS Academy, 231: All Saints Academy, 232: GILBROOK Academy, 233: North Ormesby Primary Academy, 234: Redcar Academy, 238: Conyers School, 239: St Gregory's Catholic Academy, 244: Dyke House Academy, 245: Caldicotes Primary Academy, 249: Hardwick Green Primary Academy, 251: Extol Ac Trust (Eldon Grove), 252: Stranton Ac Trust (Stranton), 253: Eskdale Academy, 254: Catcote Academy, 255: Horizons Specialist Academy, 256: St Michael's Catholic Academy, 260: Fredrick Natrass Primary Academy, 261: Oak Tree Primary Academy, 262: Outwood Academy Acklam, 263: Dormanstown Primary Academy, 264: Skelton Primary School, 265: St Bede's Catholic Academy, 267: Sunnyside Academy, 268: Rose Wood Academy, 269: Viewley Hill Academy Trust, 270: Hemlington Hall Academy, 271: Norton Primary Academy, 272: Yarm Primary School, 273: Grangefield Academy, 276: English Martyrs Ed Trust, 277: Easterside Academy, 278: St Margaret Clitherow's CVPA, 279: St Gabriel's Catholic Academy, 280: St Mary's Catholic Academy, 281: St Peter's Academy M and C, 282: Green Lane Primary Academy, 283: Kader Academy, 284: Normanby Primary School, 285: Nunthorpe Primary Academy, 286: Ingleby Manor Free School, 287: Hillsview Academy, 289: Harrow Gate Primary Academy, 290: Ian Ramsey C of E Academy, 291: Ash Trees Academy, 292: St Bede's Primary CV Academy, 293: St. Joseph's Primary Academy, 294: St Paulinus P C V Academy, 296: WEST VIEW ACADEMY, 297: Outwood Academy Bydales, 298: West Park Primary School, 299: Our Lady & St Bede Academy, 312: Manor Community Academy, 316: Saint Benedicts PCV Academy, 317: Our Lady - Christ the King, 318: Our Lady - St Patricks College, 319: Our Lady - St Patrick Primary, 320: Our Lady St Therese of Lisieux, 321: Wynyard C o E Primary School, 322: Outwood Academy - Ormesby, 323: Sacred Heart SCV Academy, 324: Tees Valley Education Trust, 325: Enquire Learning Trust Central, 327: St Hilda's Catholic Academy, 333: River Tees Multi Academy Trust, 334: St_Thomas of Canterbury MAT, 338: Brougham Primary School, 339: Vision Academy Learning Trust, 340: Jesmond Gardens Primary School, 342: Rosebrook Primary School, 344: Teesside Learning Trust, 345: Ormesby Primary School, 346: Zetland Primary School, 347: Outwood Academy Bishopsgarth

(2) The **College Pool** consists of the following employers:

27: Hartlepool College OF FE, 33: Hartlepool 6th Form College, 38: Cleve College of Art Design, 51: Redcar and Cleveland College, 54: Middlesbrough College, 61: Middlesbrough College, 194: Stockton Riverside College, 332: Prior and Stockton 6th Form

(3) The **Other Scheduled Bodies Pool** consists of the following employers:

6: Guisborough Town Council, 7: Saltburn and Marske Parish Council, 20: Loftus Town Council, 191: Ingleby Barwick Town Council, 200: Yarm Town Council, 214: Skelton & Brotton Parish Council, 215: Billingham Town Council, 274: Lockwood Parish Council

The contributions shown above represent the minimum contributions to be paid by each Employer. Employers may choose to pay additional contributions from time to time subject to the Administering Authority's agreement.

Where payments due from an Employer are expressed as monetary amounts, the amounts payable by that Employer may be adjusted to take account of any amounts payable, in respect of a surplus or shortfall to which those monetary payments relate, by new employers created after the valuation date which have been credited with proportions of the assets and liabilities of the relevant Employer.

Additional contributions may be required in respect of any additional liabilities that arise under the provisions of Regulations 30, 31, 35 and 38 of the 2013 Regulations and Employers will be notified of such contributions separately by the Administering Authority.

Additional contributions may be payable by any Employers which have ceased to participate in the Fund since 31 March 2016 and these will be certified separately.

Contribution rates for Employers commencing participation in the Fund after 31 March 2016 will be advised separately.

This certificate should be read in conjunction with the notes overleaf.

Signed on behalf of Aon Hewitt Limited



Becky Durran FIA
Fellow of the Institute and Faculty of Actuaries

31 March 2017

Aon Hewitt Limited
25 Marsh Street
Bristol BS1 4AQ



Joel Duckham FIA
Fellow of the Institute and Faculty of Actuaries

Notes to Actuary's certificate

The contribution rates certified have been assessed using the actuarial methods and assumptions detailed in our actuarial valuation report dated 31 March 2017. In particular the following assumptions have been made regarding retirement liabilities from active membership status:

Normal, late and voluntary retirement under Regulations 30(1), 30(3) and 30(5) of the 2013 Regulations

The assumptions regarding retirement at each age are as summarised in Appendix 5 of our valuation report.

Where some or all benefits are drawn before the assumed retirement age, but no reduction for early payment applies or members elect to draw their benefits after the assumed retirement age there may be a funding strain or loss respectively. This will come through as an item of experience at the next actuarial valuation.

Additional funding would not normally be required if actual retirements exceed the number anticipated, unless retirements occur before Normal Pension Age and the employer waives the reduction for early payment as permitted by Regulation 30(8). The Administering Authority requires separate funding of any additional liabilities arising from such retirements and, as such, the financial impact of these retirements is broadly neutral.

Ill-health under Regulation 35 of the 2013 Regulations

The assumptions regarding ill health retirement at each age are as summarised in Appendix 5 of our valuation report.

Such retirements increase costs due to the early payment of enhanced benefits. If actual retirements exceed the number anticipated, and no action is taken before the next valuation, this would be identified as a source of loss at the next valuation.

Severance and redundancy under Regulation 30(7) of the 2013 Regulations

No allowance is made in the valuation for retirements in these circumstances.

Such retirements increase costs due to the early payment of benefits. Any enhancement of benefits through the Fund would increase costs further. If actual retirements exceed the number anticipated, and no action is taken before the next valuation, this would be identified as a source of loss at the next valuation. The Administering Authority requires separate funding of liabilities arising from such retirements and, as such, the financial impact of these retirements is broadly neutral.

Flexible retirement under Regulation 30(6) of the 2013 Regulations

No allowance is made in the valuation for retirements in these circumstances.

Such retirements are generally 'cost neutral' (although there may be a small gain or loss to the extent that the actuarial reduction factors are based on different assumptions to those adopted for funding purposes). Additional funding would not normally be required if actual retirements exceed the number anticipated, unless retirements occur before Normal Pension Age and no reduction for early payment applies. The Administering Authority requires separate funding of any additional liabilities arising from such retirements and, as such, the financial impact of these retirements is broadly neutral.

In this certificate, references to:

- the 2013 Regulations mean the Local Government Pension Scheme Regulations 2013.

Appendix 8: Glossary

Active member

A person who is employed by an employer participating in the Fund, and is paying (or is treated as paying) contributions to the Fund (includes certain members temporarily absent, eg due to family leave or sickness).

Actuary

The actuary to the Fund, who provides actuarial advice to the Administering Authority including carrying out the actuarial valuation contained in this report.

Admission Body

An employer admitted to the Fund under an admission agreement.

Attained age method

This is one of the methods used by actuaries to calculate a contribution rate to the Fund. This method calculates the present value of the benefits expected to accrue to members over their expected remaining membership of the Fund expressed as a percentage of their expected future pensionable pay. It allows for projected future increases to pay or revaluation as appropriate through to retirement or date of leaving service. The method is based on the current membership and takes no account of the possibility of further members joining the Fund. If there are no new members, this method would be expected to result in a stable contribution rate, once surpluses or shortfalls are taken into account, and if all the other assumptions are borne out. However, if more members join the Fund to replace older leavers, the contribution rate can be expected to fall.

Consumer Prices Index (CPI)

This is the price inflation index that increases to pensions and deferred pensions paid by the Fund are currently based on. It is published every month by the Office of National Statistics.

Deferred members

A former employee who has left active membership, but has not yet received any benefits from the Fund and is prospectively entitled to receive a deferred pension from his/her normal pension age.

Discount rate

This is used to place a present value on a future payment.

Funding objective

To hold sufficient and appropriate assets to cover the Funding Target.

Funding ratio

This is the ratio of the value of assets to the Funding Target.

Funding Strategy Statement

A document prepared by the Administering Authority in accordance with the Regulations which sets out the funding strategy adopted for the Fund. The Actuary must have regard to this statement in preparing this actuarial valuation.

Funding target

An assessment of the present value of the benefits that will be paid from the Fund in the future, normally based on pensionable service prior to the valuation date. Under the current Funding Strategy Statement the funding target is equal to the past service liabilities calculated using a prudent set of assumptions, allowing for indefinite investment in a broad range of assets of higher risk than risk free assets.

Future service contribution rate

The contribution rate (expressed as a percentage of Pensionable Pay) required to meet the cost of benefits which will accrue to members in future. This is also known as the primary contribution rate.

Guaranteed Minimum Pensions (GMPs)

Most Funds that were contracted out of the State Earnings Related Pension Scheme (SERPS) before April 1997 have to provide a pension for service before that date at least equal to the Guaranteed Minimum Pension (GMP). This is approximately equal to the SERPS pension that the member would have earned had the Fund not been contracted out. GMPs ceased to accrue on 6 April 1997 when the legislation changed.

Long-term cost efficiency

This is not defined in the Regulations but further explanation can be found in the Cipfa guidance 'Preparing and Maintaining a Funding Strategy Statement', dated September 2016:

The notes to the Public Service Pensions Act 2013 state:

Long-term cost-efficiency implies that the rate must not be set at a level that gives rise to additional costs. For example, deferring costs to the future would be likely to result in those costs being greater overall than if they were provided for at the time.

The rate of employer contributions shall be deemed to have been set at an appropriate level to ensure long-term cost efficiency if the rate of employer contributions is sufficient to make provision for the cost of current benefit accrual, with an appropriate adjustment to that rate for any surplus or deficit in the fund.

In assessing whether the above condition is met, GAD may have regard to the following considerations:

- the implied average deficit recovery period
- the investment return required to achieve full funding over different periods, e.g. the recovery period
- if there is no deficit, the extent to which contributions payable are likely to lead to a deficit arising in the future
- the extent to which the required investment return above is less than the administering authority's view of the expected future return being targeted by a fund's investment strategy, taking into account changes in maturity/strategy as appropriate

Past service liabilities

This is the present value of the benefits to which members are entitled based on benefits accrued to the valuation date, assessed using the assumptions agreed between a Fund's Administering Authority and the Actuary. It generally allows for projected future increases to pay or revaluation as appropriate through to retirement or date of leaving service.

Present value

Actuarial valuations involve projections of pay, pensions and other benefits into the future. To express the value of the projected benefits in terms of a cash amount at the valuation date, the projected amounts are discounted back to the valuation date by a discount rate. This value is known as the present value. For example, if the discount rate was 4% a year and if we had to pay a cash sum of £1,040 in one year's time the present value would be £1,000.

Primary Rate of the Employers' Contribution

This is not defined in the Regulations but further explanation can be found in the Cipfa guidance Preparing and Maintaining a Funding Strategy Statement, dated September 2016:

The primary rate for each employer is that employer's future service contribution rate, which is the contribution rate required to meet the cost of the future accrual of benefits, expressed as a percentage of pensionable pay, ignoring any past service surplus or deficit but allowing for any employer-specific circumstances, such as the membership profile of that employer, the funding strategy adopted for that employer (including any risk-sharing arrangements operated by the administering authority), the actuarial method chosen and/or the employer's covenant.

The primary rate for the whole fund is the weighted average (by payroll) of the individual employers' primary rates.

Projected unit method

One of the common methods used by actuaries to calculate a contribution rate to a Fund.

This method calculates the present value of the benefits expected to accrue to members over a control period (often one year) following the valuation date. The present value is usually expressed as a percentage of the members' pensionable pay. It allows for projected future increases to pay or revaluation as appropriate through to retirement or date of leaving service. Provided that the distribution of members remains stable with new members joining to take the place of older leavers, the contribution rate calculated can be expected to remain stable, if all the other assumptions are borne out. If there are no new members however, the average age will increase and the contribution rate can be expected to rise.

Prudent

Prudent assumptions are such that the actual outcome is considered to be more likely to overstate than understate the amount of money actually required to meet the cost of the benefits.

Rates and Adjustments Certificate

A certificate required at each actuarial valuation by the Regulations, setting out the contributions payable by employers for the 3 years from the 1 April following the valuation date.

Recovery period

The period over which any surplus or shortfall is to be eliminated.

Recovery plan

Where a valuation shows a funding shortfall against the past service liabilities, a recovery plan sets out how the Administering Authority intends to meet the funding objective.

Regulations

The statutory regulations setting out the contributions payable to, and the benefits payable from, the Local Government Pension Scheme and how the Funds are to be administered. They currently include the following sets of regulations:

- | | |
|---|--|
| ▪ 1997 Regulations | Local Government Pension Scheme Regulations 1997 |
| ▪ Administration Regulations
Regulations | Local Government Pension Scheme (Administration)
2008 |
| ▪ Benefits Regulations
and | Local Government Pension Scheme (Benefits, Membership,
Contributions) Regulations 2007 |
| ▪ Transitional Regulations
1997 | Local Government Pension Scheme (Transitional provisions) |
| ▪ 2013 Regulations | Local Government Pension Scheme Regulations 2013 |
| ▪ 2014 Transitional Regulations
Savings | Local Government Pension Scheme (Transitional Provisions,
and Amendment) Regulations 2014 |

Secondary rate of the employers' contribution

This is not defined in the Regulations but further explanation can be found in the Cipfa guidance 'Preparing and Maintaining a Funding Strategy Statement', dated September 2016:

The secondary rate is an adjustment to the primary rate to arrive at the rate each employer is required to pay. It may be expressed as a percentage adjustment to the primary rate, and/or a cash adjustment in each of the three years beginning with 1 April in the year following that in which the valuation date falls. The secondary rate is specified in the rates and adjustments certificate. For any employer, the rate they are actually required to pay is the sum of the primary and secondary rates.

The actuary is required to also disclose the secondary rates for the whole scheme in each of the three years beginning with 1 April in the year following that in which the valuation date falls. These should be calculated as a weighted average based on the whole scheme payroll in respect of percentage rates and as a total amount in respect of cash adjustments. The purpose of this is to facilitate a single net rate of contributions expected to be received over each of the three years that can be readily compared with other rates and reconciled with actual receipts.

Shortfall

Where the assets are less than the Funding Target, the shortfall is the Funding Target less the value of assets.

Shortfall contributions

Additional contributions payable by employers to remove the shortfall by the end of the recovery period.

Solvency

This is not defined in the Regulations but further explanation can be found in the Cipfa guidance 'Preparing and Maintaining a Funding Strategy Statement', dated September 2016:

The notes to the Public Service Pensions Act 2013 state that solvency means that the rate of employer contributions should be set at "such level as to ensure that the scheme's liabilities can be met as they arise". It is not regarded that this means that the pension fund should be 100% funded at all times. Rather, and for the purposes of Section 13 of the Public Service Pensions Act 2013, the rate

of employer contributions shall be deemed to have been set at an appropriate level to ensure solvency if:

- the rate of employer contributions is set to target a funding level for the whole fund (assets divided by liabilities) of 100% over an appropriate time period and using appropriate actuarial assumptions; and either
- employers collectively have the financial capacity to increase employer contributions, and/or the fund is able to realise contingent assets should future circumstances require, in order to continue to target a funding level of 100%; or
- there is an appropriate plan in place should there be, or if there is expected in future to be, no or a limited number of fund employers, or a material reduction in the capacity of fund employers to increase contributions as might be needed.

If the conditions above are met, then it is expected that the fund will be able to pay scheme benefits as they fall due.

State Pension Age (SPA)

Age at which State pensions are payable. Current legislation specifies the following ages:

- Currently age 65 for men; transitioning to age 65 for women by 2018.
- Current legislation transitions State Pension Age for both men and women to age 68 by 2046, as follows:
 - to age 66 by 2020
 - to age 67 by 2028
 - to age 68 by 2046

Strains

These represent the cost of additional benefits granted to members under a discretion of the employer or the Administering Authority. They include the cost of providing enhanced benefits on retirement or redundancy.

Surplus

Where the assets are more than the Funding Target, the surplus is the value of assets less the Funding Target.

Transfer value

Members generally have a legal right to transfer their benefits to another pension arrangement before they retire. In taking a transfer, members give up their benefits in a fund, and a sum of money (called the transfer value) is paid into another approved pension fund. This is used to provide pension benefits on the terms offered in that fund.

About Aon

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