

# **FUNDING REPORT OF THE ACTUARIAL VALUATION AS AT 31 MARCH 2013 CLWYD PENSION FUND**

MARCH 2014

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# 1

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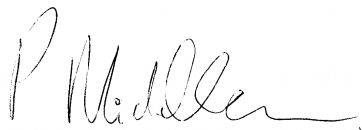
## Introduction

This report is addressed to Flintshire County Council as the Administering Authority of the Clwyd Pension Fund ("the Administering Authority") and is provided to meet the requirements of Regulation 36 of the Local Government Pension Scheme (Administration) Regulations 2008 (as amended). It describes the factors considered when carrying out the actuarial valuation as at 31 March 2013 and the decisions reached as a result.

The purpose of the actuarial valuation is for the Administering Authority to determine:

- The expected cost of providing the benefits built up by members at the valuation date (the "liabilities"), and compare this against the funds held by the Fund (the "assets").
- An appropriate plan for making up the shortfall if there are less assets than liabilities.
- The contributions needed to cover the cost of the benefits that active members will build up in the future and other costs incurred in running the Fund.

**Signature:**



**Date of signing:** 31 March 2014

**Name:**

Paul Middleman

**Qualification:**

Fellow of the Institute and Faculty of Actuaries

This report has been prepared in accordance with the version of the *Pensions Technical Actuarial Standard* current at the date this report is signed. It also complies with the relevant requirements of *Technical Actuarial Standards R: Reporting Actuarial Information, D: Data and M: Modelling*, where they apply to this report. These Standards are all issued by the Financial Reporting Council. The calculations referred to in the report use methods and assumptions appropriate for reviewing the financial position of the Fund and determining contribution rates for the future for participating employers. The funding updates referred to in this report are not as accurate as those that would arise from a full actuarial valuation as some approximations have been made and they are not based on updated individual membership data. Mercer does not accept liability to any third party in respect of this report; nor do we accept liability to the Administering Authority if the information provided in this report is used for any purpose other than that stated. The report may be disclosed to members and others who have a statutory right to see it. It may also be disclosed to any participating employer and, if the Administering Authority and Mercer consent, it may be disclosed to other third parties.

# 2

## Key results of the funding assessment

### 2.1. Past service funding position

The table on the right compares the assets and liabilities of the Fund at 31 March 2013. Figures are also shown for the last valuation as at 31 March 2010 for comparison.

The table shows that at 31 March 2013 there was a shortfall of £552m. An alternative way of expressing the position is that the Fund's assets were sufficient to cover 68% of its liabilities – this percentage is known as the funding level of the Fund.

At the previous valuation at 31 March 2010 the shortfall was £376m, equivalent to a funding level of 72%. The key reasons for the changes between the two valuations are considered in 3.2.

	£m	
	31 March 2013	31 March 2010
Total assets	1,181	956
Liabilities:		
Active members	762	633
Deferred pensioners	219	131
Pensioners	752	568
Total liabilities	1,733	1,332
Past service surplus / (shortfall)	(552)	(376)
Funding level	68%	72%

The liability value at 31 March 2013 shown in the table is known as the Fund's "funding target". The funding target is calculated using assumptions that the Administering Authority has determined are appropriate, having consulted with the actuary, and are also set out in the Administering Authority's Funding Strategy Statement (FSS).

Further details of the way in which the funding target has been calculated are set out in Appendix A.

## 2.2. Normal contribution rate

The valuation looks at the normal employer contribution rate required to cover the cost of the benefits (including death benefits and expenses) that will be built up over the year after the valuation date (the “Common Contribution Rate”). A summary of the assumptions used is provided in Appendix A.

The table on the right gives a breakdown of the Common Contribution Rate at 31 March 2013 and also shows the corresponding rate at 31 March 2010 for comparison. In calculating the average Common Contribution rate we have allowed for 5% of existing and future members to opt for the 50:50 scheme. For individual employers allowance has been made in line with the Funding Strategy Statement.

	% of Pensionable Pay	
	31 March 2013	31 March 2010
Normal contribution rate for retirement and death benefits	19.4*	17.5
Allowance for administrative expenses	0.5	0.5
Total normal contribution rate	19.9*	18.0
Average member contribution rate	6.1*	6.3
Common Contribution rate	13.8*	11.7

\*Allowing for 5% 50:50 take-up

The benefits earned under the LGPS change with effect from 1 April 2014, and the Common Contribution Rate at 31 March 2013 allows for these changes. The impact of these benefit changes on the Common Contribution Rate is given in section 3.3.

Active members pay contributions to the Fund as a condition of membership in line with the rates required under the governing Regulations (see Appendix D).

## 2.3. Correcting the shortfall

The funding objective as set out in the FSS is to achieve and maintain a funding level of 100% of liabilities (the Funding Target). In line with the FSS, where a shortfall exists at the effective date of the valuation a deficit recovery plan will be put in place which requires additional contributions to correct the shortfall (or contribution reductions to refund any surplus). The average deficit recovery period for the Fund has been set as 18 years.

Adopting the same method and assumptions as used for calculating the funding target, the deficit of £552 million could be eliminated by a contribution addition of £32.6m per annum increasing at 4.1% per annum (equivalent to 14.0% of projected Pensionable Pay at the valuation date) for 18 years. This would imply an average employer contribution rate of 13.8% plus £32.6m per annum increasing at 4.1% per annum. The average employer contribution at the previous valuation was 20.7% of Pensionable Pay over 20 years.

## **2.4. Allowance for post valuation market changes**

Since 31 March 2013 there have been significant changes in the financial market position. In particular there has been an increase in gilt yields, which underpin the assessment of the past service liability values and therefore the long term funding target. As the new contribution rates are effective from 1 April 2014, if required, it is appropriate to allow for this improvement as part of the stabilisation of contribution requirements for individual employers.

Considering changes in the major financial factors only, as at 31 August 2013 the impact of market changes had meant the funding level had increased to approximately 73% (from 68% at 31 March), equivalent to an approximate reduction at a whole Fund level of £103m in the shortfall disclosed in 2.1 above leaving a net shortfall of £449m to recover via employer contributions. As an illustration this would imply a deficit contribution of £27.4m per annum increasing at 4.1% per annum for 18 years.

This improvement has largely been maintained up to date of signing of this report, and as part of the consultation with employers, myself and the Administering Authority have agreed that the improvement can be built into the recovery plan to stabilise contribution requirements if appropriate. However as a minimum, employers would be required to continue to pay at least what they would have paid under the existing 2010 valuation plan, except in exceptional circumstances.

In practice, each employer's position is assessed separately. The Schedule to the Rates and Adjustments Certificate (attached as Appendix H) sets out the contributions for each employer over the three year period to 31 March 2017. The individual rates take into account the differing circumstances of each employer or employer group and the funding plan, as laid down in the FSS. Contribution requirements for the period from 1 April 2017 onwards will be revised as part of the next actuarial valuation as at 31 March 2016 and will be confirmed in the Rates and Adjustments Certificate and Schedule accompanying that valuation report.

# 3

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## Experience since last valuation

### 3.1. Summary of key inter-valuation experience

The last actuarial valuation was carried out with an effective date of 31 March 2010. Since the last valuation the Government announced that the benefit structure under the LGPS will change with effect from 1 April 2014. The changes do not affect benefits earned prior to 1 April 2014, and so do not directly affect the funding level or shortfall of the Fund as detailed in section 2.1, but do affect the Common Contribution Rate for the Fund as quoted in section 2.2 (the impact of the changes is given below). Details of the benefits are given in Appendix D.

The average salary increase (weighted by liability) for the Fund members who were in service for the whole of the inter-valuation period was 2.2% per annum.

Pensions in payment (in excess of Guaranteed Minimum Pensions (GMPs)) were increased as guaranteed under the Fund as follows:

- April 2011      3.1%
- April 2012      5.2%
- April 2013      2.2%

During the inter-valuation period, the gross investment return on the Fund's assets has averaged 6.7% per annum.

### 3.2. Reasons for the change in funding position since the last actuarial valuation

As noted in 2.1, the shortfall at 31 March 2010 was £376m. The table below sets out the main reasons for the change in the shortfall between 31 March 2010 and 31 March 2013.

<b>Analysis of changes in funding position</b>	<b>£m</b>
Shortfall at 31 March 2010	(376)
<i>Unwinding of interest on 2010 shortfall</i>	<i>(73)</i>
<i>Investment returns versus expectations</i>	<i>27</i>
<i>Deficit contributions paid</i>	<i>47</i>
<i>Salary increases versus expectations</i>	<i>52</i>
<i>Change in demographic assumptions</i>	<i>(39)</i>
<i>Change in financial assumptions</i>	<i>(202)</i>
<i>Member movements and other factors</i>	<i>12</i>
Shortfall at 31 March 2013	(552)

The above analysis highlights the key factors affecting the Fund since the previous valuation:

- Experience over the inter-valuation period has been largely positive, with improvements in the position due to positive investment performance, the impact of contributions paid by employers and lower than expected pay increases for active members.
- The shortfall increased significantly due to changes in underlying financial conditions, principally reductions in real gilt yields.
- Certain changes made to the underlying assumptions to reflect the current economic climate and the current state of public sector finances have also had a positive impact on the shortfall. These changes are discussed in detail in Appendix A.
- As discussed in section 2.4, the financial conditions have improved since 31 March 2013 (although not to 31 March 2010 levels), reducing the impact on shortfalls to some degree and this has been allowed for in the assessment of contribution requirements as per the FSS parameters.



### 3.3. Reasons for the change in Common Contribution Rate since the last actuarial valuation

The table below sets out the main reasons for the change in the Common Contribution Rate between 31 March 2010 and 31 March 2013.

<b>Analysis of changes in Common Contribution Rate</b>	<b>%</b>
Common Contribution Rate at 31 March 2010	11.7
<i>Change in membership profile</i>	<i>0.2</i>
<i>Change in demographic assumptions</i>	<i>0.6</i>
<i>Change in financial assumptions</i>	<i>3.5</i>
<i>Impact of LGPS changes from 1 April 2014 including allowance for 50:50 Scheme take-up</i>	<i>(2.2)</i>
Common Contribution Rate at 31 March 2013	13.8

- The change in the long-term assumptions adopted has caused a significant increase in the employer contribution requirement. This has been driven in large part by the significant fall in gilt yields over the inter-valuation period (the assumptions used to calculate the contribution rate, and their derivation, are discussed in Appendix A).
- This effect has been offset to some degree by the upcoming changes to the LGPS, which produce a significant reduction in employer costs at a Whole Fund level. At an individual employer level, the impact varies depending on profile and in some cases can result in an increased cost. Employers have been notified separately of the impact.

# 4

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## Variability and risk

The contributions for participating employers set out in the Schedule to the Rates and Adjustments Certificate (Appendix H) have been determined as described in Appendix A of this report and in line with the parameters as set out in the Funding Strategy Statement.

The funding of defined benefits is by its nature uncertain. When actual experience is not in line with the assumptions adopted a surplus or shortfall will emerge at the next actuarial assessment and will require a subsequent contribution adjustment to bring the funding back into line with the target.

It is likely, especially in the short-term, that the assumptions will not be borne out in practice. It is therefore important to consider the potential impact on the employer contribution rates of actual experience differing from what has been assumed. The details in this section do this, based on the valuation results for the Fund as a whole as at 31 March 2013. As noted in section 2.4 allowance has been made for post valuation date experience.

It should be borne in mind that the valuation results set out in Section 2 of this report, and the assumptions on which they are based, represent only one outcome, and measures which are set for funding purposes might well not be appropriate in other circumstances.

### 4.1. Projected funding position at next actuarial valuation

As part of this valuation, the Fund has agreed with the Employers to put in place a recovery plan to pay off the shortfall allowing for an updated position as set out in Section 2.4. The next actuarial valuation will take place with an effective date of 31 March 2016. If experience up to that date is in line with the assumptions made for this current actuarial valuation and the illustrative average contributions are paid assuming an 18 year recovery period, the expected funding level would be 76% at 31 March 2016.

## 4.2. Least risk basis

In assessing the value of the Fund's liabilities (the funding target), allowance has been made for asset out-performance and an Inflation Risk Premium as described in Appendix A, taking into account the investment strategy adopted by the Fund, as set out in the Fund's Statement of Investment Principles (SIP).

It is not possible to construct a portfolio of investments which produces a stream of income exactly matching the expected liability outgo. However, it is possible to construct a portfolio which closely matches the liabilities and represents the least risk investment position. Such a portfolio would consist mainly of a mixture of long-term index-linked and fixed interest gilts. Investment of the Fund's assets in line with the least risk portfolio would minimise fluctuations in the Fund's ongoing funding level between successive actuarial valuations.

If, at the valuation date, the Fund had been invested in this portfolio, then in carrying out the valuation it would not be appropriate to make any allowance for out-performance of the Fund investments or an Inflation Risk Premium. On this basis of assessment, the assessed value of the Fund's liabilities at the 2013 valuation would have been significantly higher, by approximately 38% and the declared funding level would be correspondingly reduced to approximately 49% and an equivalent deficit of £1,212 million at 31 March 2013.

## 4.3. Material risks faced by the Fund

This section provides a broad overview of the risks faced by the Fund and their potential mitigation. However, this issue is covered in greater detail in the Funding Strategy Statement.

The Fund is subject to some potentially material risks that are, to an extent, outside the Administering Authority's control, but could affect the funding level. Any material worsening of the funding level will mean more contributions are needed (either at an increased rate or at the same rate over a longer period) to be able to provide the benefits built up in the Fund – unless experience acts in other ways to improve the funding level.

Examples of such risks, and how the Administering Authority manages them, are:

- If any employer becomes unable to pay contributions or to make good deficits in the future, the Fund's assets will be lower than expected and the funding level will be worse than expected. If the reason for the employer not paying the agreed contributions is one of financial difficulties, then the Administering Authority's focus would switch to the need to secure as far as possible that any debt from the employer on it exiting the Fund can be recovered. This risk can be mitigated by regular employer covenant reviews, strengthening of covenant as appropriate, and monitoring of changes in employer covenant. In the ultimate default of an employer any shortfall would then become the responsibility of any guarantor or all other employers in the Fund. If an employer terminates participation and becomes an Exiting Employer under the Regulations then the shortfall will be determined in line with the termination policy set out in the FSS.
- If market levels and / or gilt yields change such that the liability values increase by more (or decrease by less) than the assets, the funding position would be worse than expected. An increase in employer contributions would be expected as a result. The same comments would apply if general population mortality studies and analysis of the Fund show that pensioners are living longer, or if improvements in mortality are found to be at a faster rate than allowed for. The analysis shown below illustrates the quantitative impact of such changes.
- If future investment returns on assets are lower than assumed in the valuation, the Fund's assets will be lower, and the funding level worse, than expected. The Administering Authority has a process in place to monitor investment performance, and they review the Fund's investment strategy alongside each actuarial valuation to ensure it is consistent with the funding strategy adopted.
- If members make decisions around their options such that those decisions increase the Fund's liabilities (e.g. by not commuting pensions for cash to the extent assumed), the funding position would be worse than expected. As a result, future employer contributions might then need to be increased.

#### 4.4. Sensitivity of funding position to changes in key assumptions

The value placed on the Fund's liabilities is critically dependent on the assumptions used to carry out the calculations. If future experience differs from the assumptions used, then the projected future funding level will be different from the level described above in 4.1.

To illustrate how sensitive the funding level is to experience being different from the assumptions, the table below shows how the valuation results at 31 March 2013 would have differed given small changes in the key assumptions.

	<b>Increase in shortfall at 31 March 2013 (£m)</b>	<b>Increase in the average future service contribution rate at 31 March 2013 (% of Pensionable Pay)</b>
Discount rate reduces by 0.25%	+84	+1.3
Long-term inflation is 0.25% higher than assumed	+79	+1.3
Pensionable Salary growth is 0.5% higher than assumed	+42	Nil
Members live one year longer than assumed	+38	+0.4
Growth assets fall by 25%	+227	Nil

The same changes in the opposite direction would reduce the shortfall and the average future service contribution rate.

# APPENDIX A

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## Assumptions

### A.1. How the benefits are valued

In order to calculate the liabilities, there is a need to make assumptions about various factors that affect the cost of the benefits provided by the Fund – for example, how long members will live, or the future level of inflation. The table below explains the key assumptions being made in the valuation.

Assumption	Why it is important and how it impacts on the liabilities
Discount rate	<p>The majority of benefits in a pension scheme are paid many years in the future. In the period before the benefits are paid, the Administering Authority invests the funds held by the scheme with the aim of achieving a return on those funds. When calculating how much money is needed now to make these benefit payments, it is appropriate to make allowance for the investment return that is expected to be earned on these funds. This is known as “discounting”.</p> <p>The higher the investment return achieved, the less money needs to be set aside now to pay for benefits. The calculation reflects this by placing a lower value on the liabilities if the discount rate is higher.</p> <p>The discount rate adopted to set the Funding Target is derived by mapping projected cashflows arising from accrued benefits to a yield curve (which is based on market returns on UK Government gilt stocks and other instruments of varying durations), in order to derive a market consistent gilt yield for the profile and duration of the Scheme’s accrued liabilities. To this an Asset Out-performance Assumption (“AOA”) of 1.4% per annum is added to reflect the Fund’s actual investment strategy.</p> <p>Details of the discount rate used to calculate the cost of future service are detailed in section A.3.</p>

Assumption	Why it is important and how it impacts on the liabilities
Inflation	<p>Pensions in payment increase in line with price inflation. Salary growth is also normally linked to price inflation in the long term. A higher inflation assumption will, all other things being equal, lead to a higher value being placed on the liabilities.</p> <p>The inflation assumption will be taken to be the investment market's expectation for RPI inflation based on the difference between yields derived from conventional and index-linked UK Government gilts as at 31 March 2013, reflecting the profile and duration of the Scheme's accrued liabilities but subject to the following two adjustments.</p> <ul style="list-style-type: none"> <li>• An allowance for supply/demand distortions in the bond market and</li> <li>• An adjustment due to retirement pensions being increased annually by the change in the Consumer Price Index rather than the Retail Price Index.</li> </ul> <p>The overall reduction to market implied RPI inflation at the valuation date is 1.0% per annum, compared to 0.8% per annum in 2010. The increase in this assumption reflects a general increase in expectations of the long term difference between RPI and CPI, of this 1% per annum reduction, 0.3% per annum relates to the "Inflation Risk Premium" i.e. representing the allowance for supply/demand distortions in the bond market.</p>
Pensionable Salary growth	<p>Benefits earned prior to 1 April 2014 for active members are based on their salaries immediately before retirement, so it is necessary to make an assumption about future Pensionable Salary growth. The higher this assumption, the higher the value placed on the liabilities for active members.</p> <p>The assumption for real salary increases in the long term is 1.5% p.a. over the CPI inflation assumption described above. This includes allowance for promotional increases.</p> <p>In the short term, salary increases are assumed to be lower to reflect expectations of further restraint on public sector pay, based on discussions with employers.</p> <p>For the purpose of the whole Fund results shown in this report the short term pay assumption has been taken as 1.0 % over 3 years in line with that adopted for the major public bodies. The allowance for other employers depends on information provided and this is set out in the FSS.</p>

Assumption	Why it is important and how it impacts on the liabilities
Pension increases	Increases to pensions are assumed to be in line with the inflation (CPI) assumption described above. The pension increase assumption is modified appropriately to reflect any benefits which are not fully indexed in line with inflation.
Life expectancy	<p>Pensions are paid while the member (and potentially their spouse or partner) is alive. The longer people live, the greater is the cost of providing a pension. Allowing for longer life expectancy therefore increases the liabilities.</p> <p>The mortality assumptions will be based on information in relation to self-administered pension schemes published by the Continuous Mortality Investigation CMI, making allowance for future improvements in longevity and the experience of the scheme. The mortality tables used are adjusted to reflect the Fund's membership profile and recent mortality experience, and are set out in the summary section below.</p> <p>For all members, it is assumed that the accelerated trend in longevity seen in recent years will continue in the longer term and as such, the assumptions build in an allowance for longevity 'improvement' year on year in the future in line with the 2012 CMI projections subject to a long-term improvement trend of 1.5% per annum, an increase from the 1.0% per annum assumed at the 2010 valuation.</p> <p>Members who retire on the grounds of ill health are assumed to exhibit average mortality equivalent to that for a good health retiree at an age 3 years older for current pensioners, and 4 years older for future pensioners.</p>
Commutation	It has been assumed that, on average, 50% of retiring members will take the maximum tax-free cash available at retirement and 50% will take a 3/80ths cash sum (the standard for pre April 2008 service). The members have the option to commute part of their pension at retirement in return for a lump sum at a rate of £12 cash for each £1 per annum of pension given up.



Assumption	Why it is important and how it impacts on the liabilities
Early retirements (non-ill health)	<p data-bbox="651 368 853 397"><b>Active Members</b></p> <p data-bbox="651 411 1984 507">Joiners before 1 October 2006 with an eligible retirement age of 65 for receiving unreduced benefits earned prior to 1 April 2008 and all Joiners on or after 1 October 2006: Members are assumed to retire in normal health at age 65.</p> <p data-bbox="651 555 1984 651">Joiners before 1 October 2006 with an eligible retirement age of less than 65 for receiving unreduced benefits earned prior to 1 April 2008: Each member in this category is assumed to retire in normal health prior to age 65 in the proportions shown in A.2.</p> <p data-bbox="651 699 1984 799">This assumption has changed since 2010, with members retiring at later ages on average (based on analysis of historic trends in the LGPS). The change in the assumption compared to that in 2010 is equivalent to an increase in the average assumed retirement age of around one year.</p> <p data-bbox="651 842 1984 1007">For both the liability and Common Contribution Rate calculations, early retirement factors are applied where the assumed retirement age described above is below the member's eligible retirement age for unreduced benefits for the relevant tranche of service (i.e. pre 1 April 2008 and 1 April 2008 – 31 March 2013 for calculation of the liabilities, and 1 April 2013 – 31 March 2014 and post 1 April 2014 for the calculation of the Common Contribution Rate). Factors are in line with the standard Scheme factors produced by the Government Actuary's Department.</p> <p data-bbox="651 1038 887 1067"><b>Deferred Members</b></p> <p data-bbox="651 1082 1984 1246">It has been assumed that deferred members retire at their earliest retirement age for receiving unreduced benefits. For pre 1 April 2008 service, the retirement age will be at some point between ages 60 and 65 depending on the length of a member's pensionable service and taking into account the "Rule of 85" provisions of the Regulations. For post 1 April 2008 service the retirement age will be 65, except for those members who have protected status under the transitional provisions.</p> <p data-bbox="651 1294 1984 1386">For both active and deferred members, no allowance has been made for non-ill health early retirements prior to the ages specified above. Additional capital contributions will be paid by employers in respect of the cost of these retirements.</p>

Assumption	Why it is important and how it impacts on the liabilities
Early retirements (ill-health)	<p>Members can retire before their normal retirement age due to ill-health in certain circumstances. There are three levels of ill-health retirement, with each giving rise to different levels of benefit.</p> <p>A small proportion of the active membership is assumed to retire due to ill-health, as set out in the table in A.2. In addition the proportion assumed to fall into each ill health tier is also shown.</p>
Proportions with dependants on death	<p>The Fund pays benefits to qualifying dependants (spouse/civil partner/dependent child) on the death of a member. Therefore, the proportion of members with a qualifying dependant impacts on the total cost of benefit provision, with a higher proportion of dependants meaning a higher cost. The valuation calculations assume a proportion of the active membership to retire in normal health prior to age 65, as set out in the table in A.2.</p> <p>The proportion of members assumed to have a qualifying dependant has been increased compared to the 2010 valuation. The change is based on ONS statistics with an underpin at older ages, and allows for the estimated impact of an increase in the number of members with qualifying civil partners/dependants. The impact of this change is to increase the assumption by around 10% (but with the underpin at older ages remaining unchanged).</p>
Expenses	<p>Expenses are met out of the Fund, in accordance with the Regulations. Expenses of administration are allowed for by adding 0.5% of Pensionable Pay to the contributions as required from participating employers. This addition is reassessed at each valuation. Investment expenses have been allowed for implicitly in determining the discount rates.</p>
Discretionary benefits	<p>The costs of any discretion exercised by an employer in order to enhance benefits for a member through the Fund will be subject to additional contributions from the employer as required by the Regulations as and when the event occurs. As a result, no allowance for such discretionary benefits has been made in the valuation.</p>
50:50 option	<p>From 1 April 2014 there is a 50:50 option available to members, whereby they can opt to receive 50% of the standard Fund benefits in return for paying 50% of the standard employee contributions. When calculating the average Common Contribution Rate we have assumed 5% of the total active membership will select this option. The allowance, if any, for certain individual employers is as per the Funding Strategy Statement and the individual employer rates shown in the Rates &amp; Adjustments Certificate have been adjusted accordingly.</p>

The liabilities of the Fund are calculated by projecting forward all of the future benefit cash flows and discounting them back to the effective date of the valuation, using these assumptions. For example, the liability for a single pensioner is calculated by estimating the amount of each pension payment they will receive in the future, multiplying by the probability that the member will be still be alive by the date of each payment, and then discounting each payment back to the effective date of the valuation; and then summing up all of these discounted amounts. The liabilities for the whole Fund are calculated by summing the liabilities for each of the individual members.

## A.2. Assumptions used to calculate the funding target

The tables below summarise the key assumptions used in the calculation of the Funding Target and those used for the 31 March 2010 actuarial valuation.

Financial assumptions	31 March 2013	31 March 2010
Discount rate:	4.6% p.a.	5.9% p.a.
Assumed long term CPI inflation	2.6% p.a.	3.0% p.a.
Salary increases – Long term	4.1% p.a.	4.5% p.a.
– Short term (3 years)	1.0% p.a.	N/A
Pension increases in payment	2.6% p.a.	3.0% p.a.

Demographic assumptions	31 March 2013	31 March 2010
Pre retirement mortality – base table	AC00 tables with adjustments of 73% (male) and 60% (female) to reflect the Fund's membership profile	PA92 year of birth tables adjusted by 1 year to reflect the Fund's membership profile
Pre retirement mortality – future improvements:		
Males	N/A	Medium cohort projections
Females	N/A	Medium cohort projections
Post retirement mortality – base table	CMI Self Administered Pension Schemes (SAPS) tables with scheme and member category specific adjustments (see further detail below)	CMI Self Administered Pension Schemes (SAPS) tables with scheme and member category specific adjustments (see further detail in 2010 valuation report)
Post retirement mortality – future improvements:		
Males	CMI_2012_M [1.5%]	CMI_2009_M [1%]
Females	CMI_2012_F [1.5%]	CMI_2009_F [1%]
Ill health retirement	(see further detail below)	(see 2010 valuation report)
Withdrawal	(see further detail below)	(see 2010 valuation report)
Proportions married	(see further detail below)	(see 2010 valuation report)

**Post retirement mortality**

		Base Table	Improvements	Adjustment (M / F)
Current pensioners	Normal health	S1PA	CMI_2012 [1.5%]	94% / 93%
	Ill-health	S1PA	CMI_2012 [1.5%]	Normal health + 3 years
	Dependants	S1PMA / S1DFA	CMI_2012 [1.5%]	156% / 106%
	Future dependants	S1PMA / S1DFA	CMI_2012 [1.5%]	106% / 98%
Current active / deferred	Active normal health	S1PA	CMI_2012 [1.5%]	87% / 82%
	Active ill-health	S1PA	CMI_2012 [1.5%]	Normal health + 4 years
	Deferred	S1PA	CMI_2012 [1.5%]	114% / 102%
	Future dependants	S1PMA / S1DFA	CMI_2012 [1.5%]	99% / 93%

An **age rating** applied to an actuarial table has the effect of assuming that beneficiaries have a life expectancy equal to those older (or younger) than their actual age.

For example, a “+1 year” rating would mean beneficiaries are assumed to have the mortality of someone one year their senior which has the effect of reducing their life expectancy and hence reducing the assessed value of the corresponding liabilities.

A **weighting** applied to an actuarial table has the effect of increasing or reducing the chance of survival at each age, which increases or reduces the corresponding life expectancy.

For example, a “106%” weighting would mean beneficiaries have mortality rates 6% higher than the unadjusted table which reduces the assessed value of the corresponding liabilities.

The mortality assumptions used for the 31 March 2013 valuation result in the following life expectancies.

	Years
Life expectancy for a male aged 65 now	23.2
Life expectancy at 65 for a male aged 45 now	26.1
Life expectancy for a female aged 65 now	25.7
Life expectancy at 65 for a female aged 45 now	29.1

### Early retirement

For those members who are entitled to receive their accrued benefits (or part of those benefits) prior to the Fund's normal pension age, a proportion of the active membership is assumed to retire in normal health prior to age 65, as set out below:

	% retiring per annum	% retiring per annum
Age	Males	Females
60	10	20
61	8	15
62	8	15
63	8	15
64	8	15
65	100	100

The appropriate early retirement factors applied to the relevant tranche of benefits are in line with GAD guidance.

### III health retirement

A small proportion of the active membership has been assumed to retire owing to ill health. As an example of the rates assumed, the following is an extract from the decrement table used:

	% retiring per annum	% retiring per annum
Age	Males	Females
35	0.03	0.03
45	0.09	0.09
55	0.41	0.36

The proportion of ill health early retirements falling into each tier category, split by males and females, has been assumed to be as set out below:

	Tier 1	Tier 2	Tier 3
Males	72%	9%	19%
Females	73%	14%	13%

	Conditions	Benefits based on
Tier 1	No reasonable prospect of undertaking gainful employment before age 65	Accrued membership plus prospective membership to age 65
Tier 2	Unlikely to undertake gainful employment within 3 years, but likely to be able to before age 65	Accrued membership plus 25% of prospective membership to age 65
Tier 3	Likely to undertake gainful employment within 3 years	Accrued membership only. Reviews are made after 18 months.

### Withdrawal

This assumption relates to those members who leave the scheme with an entitlement to a deferred pension or transfer value. It has been assumed that active members will leave the Scheme at the following sample rates:

	% leaving per annum	% leaving per annum
Age	Males	Females
25	13.50	14.92
35	3.39	4.18
45	1.69	2.59

### Partners and Dependants Proportions

It has been assumed that the proportions of members below will on death give rise to a dependant's pension (spouse's and partner), and that spouses/partners of female (male) members are three years older (younger), on average than the member.

	% spouse/partner	% spouse/partner
Age	Males	Females
25	45	25
35	45	52
45	59	61
55	66	66
65	72	64



### A.3. Assumptions used to calculate future service cost

The cost of future accrual (normal cost) has been calculated using the same actuarial assumptions as used to calculate the funding target and recovery plan as set out above except that the financial assumptions adopted are as described below.

The financial assumptions for assessing the future service contribution rate should take account of the following points:

- contributions will be invested in market conditions applying at future dates, which are unknown at the effective date of the valuation, and which are not directly linked to market conditions at the valuation date; and
- the future service liabilities for which these contributions will be paid have a longer average duration than the past service liabilities so the base yield is currently higher due to the shape of the yield curve.

The financial assumptions in relation to future service (i.e. the normal cost) are not specifically linked to investment conditions as at the valuation date itself, and are based on an overall assumed real return (i.e. return in excess of price inflation) of 3% per annum. This represents a reduction of 0.75% per annum compared to the 2010 valuation, to reflect the reduction in gilt yields (and so the increase in the expected cost of providing LGPS benefits) over the period. With a long term average assumption for price inflation of 2.6% per annum, this gives rise to an overall discount rate of 5.6% p.a.

At each valuation the cost of the benefits accrued since the previous valuation will become a past service liability. At that time any mismatch against gilt yields and the asset out-performance assumptions used for the funding target is fully taken into account in assessing the funding position.

	31 March 2013	31 March 2010
Discount rate	5.6% p.a.	6.75% p.a.
Salary increases	4.1% p.a.	4.5% p.a.
Pension increases in payment	2.6% p.a.	3.0% p.a.

#### **A.4. Assumptions used to calculate the contributions payable under the recovery plan**

##### **Post valuation improvements in market conditions**

The contributions payable under the recovery plan are calculated using the same assumptions as those used to calculate the funding target with the exception that, as noted in section 2.4, allowance has been made for post valuation date changes in the funding position where appropriate when determining the contributions payable to recover the shortfall. In terms of assumptions the major change is that the discount rate has increased by 0.4% per annum to 5% per annum.

## APPENDIX B

### Summary membership data

The membership data is summarised in the table, with figures at the previous valuation shown for comparison.

Data in relation to members of the Fund were supplied by the Administering Authority. The accuracy of the data provided has been relied on. While reasonableness checks on the data have been carried out, they do not guarantee the completeness or the accuracy of the data. Consequently Mercer does not accept any liability in respect of its advice where it has relied on data that is incomplete or inaccurate.

In addition to the current pensioners and spouses in the table, there were 104 current dependant pensioners as at 31 March 2013 with pensions totalling £132,821 per annum.

	31 March 2013	31 March 2010
<b>Active members</b>		
Number	15,070	14,495
Total Pensionable Salaries (£000s p.a.) <sup>1</sup>	227,816	233,091
Average Pensionable Salary (£ p.a.)	15,117	16,081
Average age <sup>2</sup>	49.7	49.4
Average past service <sup>3</sup>	11.7	11.8
<b>Deferred pensioners<sup>4</sup></b>		
Number	11,660	9,617
Total deferred pensions revalued to valuation date (£000s p.a.)	11,640	8,750
Average deferred pension (£ p.a.)	998	910
Average age <sup>2</sup>	48.5	47.7
<b>Current Pensioners and Spouses</b>		
Number	10,039	8,886
Total pensions payable (£000s p.a.)	46,989	38,665
Average Pension	4,681	4,351
Average Age <sup>2</sup>	69.8	69.2

<sup>1</sup> Including actual pay for part time members

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

<sup>3</sup> Weighted by salary

<sup>4</sup> Including frozen refunds

## APPENDIX C

### Assets

The market value of the Fund's assets was £1,181,232,000 on the valuation date.

The Administering Authority's investment strategy is to proportion the Fund's assets by asset class as shown in the table below. The actual distribution of assets will vary over time due to changes in financial markets. The table also shows the distribution of assets at the valuation date.

The Administering Authority also holds additional voluntary contributions (AVCs), which are separately invested. These assets have been excluded from the market value shown as they exactly match the value of the benefits they cover.

The details of the assets at the valuation date and the financial transactions during the inter-valuation period have been obtained from the audited accounts for the Fund. Details of the investment strategy can be found in the Statement of Investment Principles.

	Strategic Benchmark	Actual market value of assets at 31 March 2013	
	%	£000s	%
<b>Bonds:</b>	<b>15.0%</b>		
Managed fixed interest fund		175,148	14.8%
<b>Equities:</b>	<b>43.0%</b>		
Managed UK equity funds		122,222	10.3%
Managed overseas equity funds		391,597	33.2%
<b>Alternative assets:</b>	<b>42.0%</b>		
Managed multi strategy funds		120,380	10.2%
Infrastructure funds		23,907	2.0%
Timberland funds / Agricultural funds		20,511	1.7%
Commodity funds		34,588	2.9%
Private equity funds		138,137	11.7%
Hedge fund of funds		47,070	4.0%
Opportunistic Funds		5,910	0.5%
Property		82,260	7.0%
<b>Cash:</b>		17,331	1.5%
<b>Other investment liabilities/assets:</b>		874	0.1%
<b>Net Current assets/(liabilities):</b>		1,297	0.1%
<b>Total</b>	<b>100.0%</b>	<b>1,181,232</b>	<b>100.0%</b>

## APPENDIX D

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### Scheme Benefits

The benefits valued within our calculations are those in force at the effective date of the valuation. Full details of these can be found in the Local Government Pension Scheme Regulations 2007/2008 (as amended). The principal regulations relating to benefits earned up to 31 March 2014 are:

The Local Government Pension Scheme (Benefits, Membership and Contributions) Regulations 2007  
(<http://timeline.lge.gov.uk/LGPS2008Regs/SI20121989/20071166.htm>)

The Local Government Pension Scheme (Administration) Regulations 2008  
(<http://timeline.lge.gov.uk/LGPS2008Regs/SI20121989/20080239.htm>)

The Local Government Pension Scheme (Transitional Provisions) Regulations 2008  
(<http://timeline.lge.gov.uk/LGPS2008Regs/SI20121989/20080238.htm>)

The benefits offered under the LGPS will change with effect from 1 April 2014, and the regulations relating to benefits earned after that date are:

The Local Government Pension Scheme Regulations 2013 (<http://www.legislation.gov.uk/ukxi/2013/2356/contents/made>)

The Local Government Pension Scheme (Transitional Provisions, Savings and Amendment) Regulations 2014  
(<http://www.legislation.gov.uk/ukxi/2014/525/contents/made>)

We have made no allowance for other changes which may be introduced in the future.

The benefits arising from the award of compensatory added years (CAY) of service on premature retirement have been treated as follows:

- The general position is that the CAY benefits (together with associated pension increases) are recharged to the relevant employer. These benefits are therefore excluded from the valuation.

The benefits that will emerge from money purchase AVCs paid by members, and SCAVCs paid by employers, and the corresponding invested assets in respect of these AVCs and SCAVCs, have been excluded from the valuation.

UK and European law requires pension schemes to provide equal benefits to men and women in respect of service after 17 May 1990 (the date of the “Barber” judgement) and this includes providing equal benefits accrued from that date to reflect the differences in GMPs. There is no consensus or legislative guidance as to what adjustments have to be made to scheme benefits to correct these inequalities for ongoing schemes (i.e. for schemes other than those which are in the Pension Protection Fund). The valuation makes no allowance for removal of these inequalities. It is consequently possible that additional funding will be required for equalisation once the law has been clarified. It is recommended that the Administering Authority seek further professional advice if it is concerned about this issue.

## APPENDIX E

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### Summary of Income and Expenditure

INCOME	Year ending 31 March			Total
	2011	2012	2013	
	£000s	£000s	£000s	£000s
<b>Fund at beginning of year</b>	<b>955,833</b>	<b>1,051,815</b>	<b>1,060,823</b>	<b>955,833</b>
Contributions to Fund:				
Employees	15,102	14,315	14,381	43,798
Employers	51,433	50,654	52,294	154,381
Transfer Values received	11,423	6,588	6,146	24,157
Investment income	2,898	3,326	2,397	8,621
Change in market value of investments	79,965	21,097	110,113	211,175
EXPENDITURE	Year ending 31 March			Total
	2011	2012	2013	
	£000s	£000s	£000s	£000s
Retirement and Spouses' Benefits	52,432	52,407	55,576	160,415
Retiring allowances and death gratuities	1,152	1,382	1,401	3,935
Withdrawals	223	108	60	391
Transfer Values paid	4,690	26,564	1,544	32,798
Investment expenses	5,080	5,267	5,294	15,641
Administration expenses	1,262	1,244	1,047	3,553
<b>Fund at end of year</b>	<b>1,051,815</b>	<b>1,060,823</b>	<b>1,181,232</b>	<b>1,181,232</b>

## APPENDIX F

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### Analysis of experience of the membership of the Fund for the period 1 April 2010 to 31 March 2013

The analysis below compares the actual experience over the 3 year period with the assumptions used for the 2013 valuation.

	Actual	Expected	%
Ill Health Retirements	77	105	73
Withdrawals	3,543	1,583	224
Pensioner Deaths	791	666	119

Note that actual withdrawals can include members moving to another LGPS Fund, bulk transfers and also transfers under the special transfer club terms.



## APPENDIX G

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### Rates and Adjustments Certificate issued in accordance with Regulation 36 of the Administration Regulations

Name of Fund

Clwyd Pension Fund

#### Primary Contribution Requirements

I hereby certify that, in my opinion, the common rate of employers' contributions payable in each year of the period of three years beginning 1 April 2014 should be at the rate of 13.8 per cent of Pensionable Pay (including those in respect of members of the LGPS under the 50:50 option).

I hereby certify that, in my opinion, the amount of the employers' contributions payable in each year of the period of three years beginning with 1 April 2014, as set out above, should be individually adjusted as set out in the attached schedule. Contributions will be paid monthly in arrears with each payment normally being due by the 19th of the following month (or the 22nd if paid electronically) unless otherwise noted in Appendix H or in a separate agreement with an individual employer, and the contributions in the attached schedule take account of any such agreements.

#### Further Adjustments

A further individual adjustment shall be applied in respect of each non-ill health early retirement occurring in the period of three years covered by this certificate. This further individual adjustment will be calculated in accordance with methods agreed from time to time between the Fund's Actuary and the Administering Authority.

The contributions set out in the attached schedule represent the minimum contribution which may be paid by each employer in total over the 3 years covered by the certificate. Additional contributions or a different pattern of contributions may be paid if requested by the employer concerned at the sole discretion of the Administering Authority as agreed with the Actuary. The total contributions payable by each employer will be subject to a minimum of zero.

The individual employer contributions may be varied as agreed by the Actuary and Administering Authority to reflect any changes in contribution requirements as a result of any benefit costs being insured with a third party or parties including where the third party or parties participate in the Fund.

In cases where an element of an existing Scheme employer's deficit is transferred to a new employer on its inception, the Scheme employer's deficit recovery contributions, as shown on the schedule to this Certificate in Appendix H, may be reallocated between the Scheme employer and the new employer to reflect this, on advice of the Fund Actuary and as agreed with the Administering Authority so that the total payments remain the same overall.

#### **Regulation 36(8)**

No allowance for non-ill health early retirements has been made in determining the results of the valuation, on the basis that the costs arising will be met by additional contributions. Allowance for ill health retirements has been included in each employer's contribution rate, on the basis of the method and assumptions set out in the report.

**Signature:** 

**Date of signing:** 31 March 2014

**Name:** Paul Middleman

**Qualification:** Fellow of the Institute and Faculty of Actuaries

## APPENDIX H

### Schedule to the Rates and Adjustment Certificate dated 31 March 2014

Employers	2014/15		2015/16		2016/17	
	Individual Adjustment %	Total Contribution Rate %	Individual Adjustment %	Total Contribution Rate %	Individual Adjustment %	Total Contribution Rate %
Wrexham County Borough Council*	-1.2% plus £9,046,900	12.6% plus £9,046,900	-0.5% plus £9,417,800	13.3% plus £9,417,800	0.3% plus £9,803,900	14.1% plus £9,803,900
Denbighshire County Council*	-1.3% plus £6,425,700	12.5% plus £6,425,700	-0.7% plus £6,689,200	13.1% plus £6,689,200	0.0% plus £6,963,500	13.8% plus £6,963,500
Flintshire County Council*	-1.6% plus £9,185,380	12.2% plus £9,185,380	-0.6% plus £9,490,380	13.2% plus £9,490,380	0.1% plus £9,985,380	13.9% plus £9,985,380
Coleg Cambria*	-1.7% plus £2,451,000	12.1% plus £2,451,000	-0.8%	13.0%	0.2%	14.0%
Glyndwr University	-2.0% plus £684,500	11.8% plus £684,500	-1.3% plus £764,300	12.5% plus £764,300	-0.5% plus £847,900	13.3% plus £847,900
Denbighshire Voluntary Services	5.2% plus £2,000	19.0% plus £2,000	8.8% plus £3,000	22.6% plus £3,000	12.3% plus £3,500	26.1% plus £3,500
Grosvenor Facilities Management Ltd	6.8% plus £200	20.6% plus £200	9.2% plus £300	23.0% plus £300	11.5% plus £500	25.3% plus £500
North Wales Fire Service	-2.7% plus £545,200	11.1% plus £545,200	-1.9% plus £613,900	11.9% plus £613,900	-1.0% plus £686,100	12.8% plus £686,100
Bodelwyddan Castle Trust	0.4% plus £5,200	14.2% plus £5,200	2.0% plus £5,400	15.8% plus £5,400	3.5% plus £5,600	17.3% plus £5,600
Chartwells (Compass Group)	2.7% plus £100	16.5% plus £100	3.8% plus £100	17.6% plus £100	5.0% plus £200	18.8% plus £200
North Wales Valuation Tribunal	2.2% plus £21,100	16.0% plus £21,100	2.2% plus £24,700	16.0% plus £24,700	2.2% plus £28,400	16.0% plus £28,400
Cartref Dyffryn Ceiriog	5.3% plus £42,100	19.1% plus £42,100	7.0% plus £43,800	20.8% plus £43,800	8.7% plus £45,600	22.5% plus £45,600

Employers	2014/15		2015/16		2016/17	
	Individual Adjustment %	Total Contribution Rate %	Individual Adjustment %	Total Contribution Rate %	Individual Adjustment %	Total Contribution Rate %
Careers Wales	-0.8% plus £129,600	13.0% plus £129,600	-0.3% plus £134,900	13.5% plus £134,900	0.2% plus £140,400	14.0% plus £140,400
Argoed Community Council	6.3%	20.1%	9.6% less £100	23.4% less £100	13.0% less £100	26.8% less £100
Shotton Town Council	5.2% plus £400	19.0% plus £400	8.1% plus £400	21.9% plus £400	11.0% plus £400	24.8% plus £400
Buckley Town Council	5.2% plus £1,400	19.0% plus £1,400	7.5% plus £1,800	21.3% plus £1,800	9.9% plus £2,300	23.7% plus £2,300
Coedpoeth Community Council	5.0% plus £6,300	18.8% plus £6,300	6.3% plus £7,400	20.1% plus £7,400	7.5% plus £8,400	21.3% plus £8,400
Prestatyn Town Council	0.0% plus £2,100	13.8% plus £2,100	1.3% plus £2,200	15.1% plus £2,200	2.7% plus £2,300	16.5% plus £2,300
Caia Park Community Council	7.2% plus £500	21.0% plus £500	9.5%	23.3%	11.8%	25.6%
Rhosllanerchrugog Community Council	0.6% plus £3,300	14.4% plus £3,300	1.4% plus £3,400	15.2% plus £3,400	2.3% plus £3,600	16.1% plus £3,600
Hawarden Community Council	2.2% plus £9,200	16.0% plus £9,200	3.1% plus £9,600	16.9% plus £9,600	3.9% plus £10,000	17.7% plus £10,000
Rhyl Town Council	-3.8% plus £23,000	10.0% plus £23,000	-3.8% plus £23,900	10.0% plus £23,900	-3.8% plus £24,900	10.0% plus £24,900
Mold Town Council	2.8% plus £1,200	16.6% plus £1,200	2.8% plus £1,400	16.6% plus £1,400	2.8% plus £1,700	16.6% plus £1,700
Offa Community Council	1.4% plus £400	15.2% plus £400	4.2% less £900	18.0% less £900	7.1% less £2,300	20.9% less £2,300
Connah's Quay Town Council	1.1% plus £3,000	14.9% plus £3,000	1.8% less £1,600	15.6% less £1,600	2.4% less £6,700	16.2% less £6,700
Denbigh Youth Project (see note 3)	8.1%	21.9%	8.1%	21.9%	8.1%	21.9%

## Notes:

1. The percentages shown are percentages of pensionable pay and apply to all members, including those who are members under the 50:50 option under the LGPS from 1 April 2014.
2. The total annual contributions payable by each employer will be subject to a minimum of zero.
3. These employers were admitted to the Fund after 31 March 2013.
4. The deficit contributions certified for employers marked with an (\*) will be paid to the Fund by the end of April each year (i.e. the 2014/15, 2015/16 and 2016/17 contributions will be paid to the Fund by 30 April 2014, 2015 and 2016 respectively). The lump sum payments will each be paid in full by the relevant 30 April.
5. At the agreement of the Administering Authority and the Actuary, employers can choose to pay deficit and expected pay-related contributions by 30 April each year (i.e. the 2014/15, 2015/16 and 2016/17 contributions will be paid to the Fund by 30 April 2014, 2015 and 2016 respectively. The lump sum payments will each be paid in full by the relevant 30 April). Where such an employer chooses to pay deficit and pay-related contributions in advance, the percentages and lump sums shown on the schedule should be multiplied by a factor of 0.978 to arrive at the required contribution figures. In the cases where pay related contributions are paid in advance, the employer will need to estimate in advance the pensionable pay for the first nine months of the year, and a balancing adjustment to reflect the actual pensionable pay over the year would be made by no later than the year end.



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