Firefighters’ Pension Arrangements
Verification of scheme-specific proposals

Date: 9 February 2012

Author: Ian Boonin FIA

Table of Contents

1 Introduction

1.1 This report has been prepared by the Government Actuary's Department (GAD) in its capacity as actuarial advisor to the Department for Communities and Local Government (DCLG) in connection with the Firefighters' Pension Arrangements in England (FPA or "the Scheme").

1.2 This report contains our advice on verifying that the new scheme design is within the cost ceiling and sets out the data, methodology and assumptions used in determining the value of the Reference Scheme and the new scheme design.

1.3 I understand that DCLG will forward this report to HM Treasury (HMT).

1.4 The data, methodology and assumptions and new scheme design described in this report are subject to approval by HMT, based on advice from GAD.

1.5 This report follows our normal quality processes for work conducted on public service pension matters.[1]

[1] *The GAD Statement of Understanding http://www.gad.gov.uk/Documents/Occupational%20Pensions/GAD_Statement_of_Understanding_v_1.1_Dec_2011.pdf sets out the standards which the Department currently applies for any work carried out in this area.*

2 Verification Statement

2.1 The Minister for the Fire Service wrote to the fire service unions on 8 December 2011 setting out the gross cost ceilings for the firefighters' pension arrangements. The gross cost ceiling is the scheme specific contribution rate required to provide the Government's preferred design (the "Reference Scheme"). The terms of the Reference Scheme were set out in that letter. The letter set out the following cost ceiling for the Firefighters' Pension Arrangements:

Gross Cost Ceiling	Employers	Employees
27.0%	13.8%	13.2%

2.2 Following scheme level discussions, the Secretary of State for Communities and Local Government has set out the new scheme design for the FPA for service from 1 April 2015. The new scheme design is attached at Appendix A.

2.3 The Government Actuary's Department provided advice to HMT on cost ceilings for scheme level discussions in the note of 7 October 2011: Cost Ceilings for scheme level discussions: Advice on data, methodology and assumptions. Section 8 of that note provided advice on verifying that new scheme designs are within the cost ceiling. This report has been prepared in accordance with the advice outlined in the 7 October 2011 report and subsequent HMT instructions (see appendix C).

2.4 I have compared the cost of the new scheme design set out in Appendix A with the Reference Scheme, and concluded that the new scheme design is within the required cost ceiling. This conclusion is subject to the comments below.

2.5 The conclusion in 2.4 is dependent on the data, methodology and assumptions adopted. These are set out in Section 3.

2.6 The data, methodology, assumptions and new scheme design described in this report are subject to approval by HMT, based on advice from the Government Actuary's Department. HMT have confirmed that they are content.

2.7 The costs of both the new scheme design and the Reference Scheme will change over time. I have considered these possible changes in the scheme costs and conclude that, allowing for this effect, the cost of the new scheme design set out in Appendix A remains within the cost of the Reference Scheme when assessed on the revised assumptions discussed in 3.4 and 3.6. This comparison is discussed in section 5.

2.8 Limitations of this advice are described in section 6.

3 Data, methodology and assumptions

3.1 This section sets out the data, methodology and assumptions used for the comparison.

3.2 The cost ceilings were set in accordance with the data, methodology and assumptions set out in GAD's notes:

> Review of the Firefighters' Pension Scheme (England): Assessment of cost ceiling and scheme specific proposals: Draft cost ceilings – results dated 17 January 2012, which referred to:

> Review of the Firefighters' Pension Scheme (England): Assessment of cost ceiling and scheme specific proposals: Data, methodology and assumptions dated 11 August 2011.

3.3 As required in paragraphs 8.2 to 8.10 of the GAD advice of 7 October 2011, I have considered whether the data, methodology and assumptions used to calculate cost ceilings will be appropriate to provide a fair comparison between the costs of the new scheme design set out in Appendix A with the Reference Scheme.

3.4 The gross cost ceiling outlined in 2.1 above assumed that all members retired on reaching age 60. No allowance was made for early or late retirements. The new scheme design allows for the early retirement terms of members who retire from active service at age 57 and above described in Appendix A.

3.5 In order to provide a fair comparison it is necessary to allow for early retirements in assessing the cost of the new scheme design set out in Appendix A.

3.6 Consequently HMT have requested that:

> The Reference Scheme should be reassessed allowing for the early retirement of half of the unprotected ex-FPS 1992 members at age 52, on terms consistent[2] with the current FPS 1992 scheme. The remaining unprotected ex-FPS 1992 members should be assumed to remain in the scheme.

> We should assume that the introduction of the revised early retirement terms will result in the unprotected ex-FPS 1992 members who would have retired at 60 instead retiring at 57. In the short-term, other members (including all ex-NFPS 2006 members) should be assumed to have the same retirement pattern as in the Reference Scheme.

> In the long-term it should be assumed that the revised early retirement factors will lead to a change in behaviour and 25% of members in active service reaching age 57 will be assumed to retire immediately.

> In addition members who were assumed to withdraw from the scheme between ages 57 and 60 should instead be assumed to take early retirement at the age at which they would have deferred.

3.7 These revised assumptions are used to assess the cost of the new scheme design set out in Appendix A and the Reference Scheme. Note that the contribution rate required for the Reference Scheme using these revised assumptions will differ from the original cost ceiling, and so the cost ceiling outlined in 2.1 above does not play any direct role in the comparison.

[2] There are no early retirement factors in the FPS 1992.

3.8 As a result of the revised early retirement terms, the FPS 1992 liabilities may be expected to increase. As requested by HMT we have assumed that the FPS 1992 past service liability will increase by an amount equivalent to assuming that half of all unprotected ex-FPS 1992 members will change their behaviour to retire at age 57 (three years earlier than they would have otherwise done). It has been assumed that the half of members with the most amount of FPS 1992 scheme service retire at age 52, and the half with the least amount of FPS 1992 scheme service remain in the scheme. I have assumed that this is equivalent to 65% of the pre-2015 liability of unprotected ex-FPS 1992 members relating to retirements at age 52.

3.9 After allowing for this past service cost, the cost of the proposed scheme remains within the revised cost ceiling.

3.10 No allowance has been made for any tapering of the ten-year protection; members who are subject to tapering have been treated as unprotected members.

Summary of data, methodology and assumptions:

3.11 The membership data used to assess the cost of the Reference Scheme and the new scheme design outlined in Appendix A is the most recent full extract of membership data (data as at 31 March 2011) and is summarised in Appendix B.

3.12 This data has been validated and some minor adjustments have been made. It is my opinion that the membership data is suitable for the purposes of this report.

3.13 We have assumed that the profile of the membership as at 2015 is unchanged from 2011, except that 39% of the salary of unprotected scheme members is assumed to relate to ex-FPS 1992 members who will not benefit from protection.

3.14 The methodology used to determine the value of the Reference Scheme and the new scheme design is the standard actuarial methodology known as the Projected Unit Method with a one year control period.

3.15 The key assumptions used to determine the relevant costs are:

> retirement as discussed above.

> a real discount rate of 3% pa in excess of CPI in line with the current SCAPE discount rate

> a nominal discount rate of 5% pa

> earnings increases of 4 ¼ % pa

> CPI increases of 2% pa

> improvements in post-retirement life expectancy in line with the ONS 2008-based principal population projections

> proportion of pension commuted in exchange for a lump sum of 55% of HMRC limits.

> other demographic assumptions, set as best estimates.

4 Sensitivity analysis

4.1 The conclusion in Section 2.4 is sensitive to the data, methodology and assumptions used.

4.2 Given the proposed pension scheme design, the conclusion in Section 2 is particularly sensitive to the following

4.2.1 Age retirement assumptions: The figures provided in this report have been based on the assumption that half of unprotected ex-FPS 1992 and approximately 25% of new entrant active members will retire three years earlier as a result of the introduction of the revised early retirement terms but that no other members will change their behaviour. If a different spread of early retirements were assumed between ages 55 and SPA then the affordable accrual rate may be higher or lower. We have assumed that all benefits have to be drawn from all schemes at the same time.

4.2.2 Withdrawal rates: The new scheme design is expected to be more favourable to those members who remain in service until age 57 than to those who leave before then relative to the Reference Scheme. Thus if a different rate of withdrawals before age 57 were assumed, then the affordable accrual rate may be higher or lower .

4.3 The National Audit Office has noted that the cost of public service pensions, as a proportion of GDP, will rise if GDP growth is permanently lower than expected. The conclusion is sensitive to the assumed rate of earnings growth in excess of inflation. However, the impact of this sensitivity will be very much smaller than changes to the assumed age retirement and withdrawal rates.

5 Comparisons of costs in the longer term

5.1 Paragraphs 8.21 to 8.23 of GAD's note of 7 Oct 2011 stated that if any benefit design options are proposed in which the comparison of costs differs in the short term and the long term, then HM Treasury could consider the issues arising on a case-by-case basis.

5.2 The data used for the comparison is based on membership data as at 31 March 2011.

5.3 HMT have specified that the comparison should allow for the likely increases in average member age due to the increased pension ages.

5.4 The future membership age profile is uncertain. For simplicity, I have performed a comparison for the current membership with average age increased by (60 – average retirement age) / 2.

5.5 The current average retirement age of the scheme is approximately 52 years. I have therefore assumed that all current members are 4 years older than included in the membership data. In order to provide a fair comparison with the long term cost of the scheme I have assumed a State Pension Age of 68 for all members in both the Reference Scheme and the new scheme design.

5.6 I have concluded that, allowing for this effect, the cost of the new scheme design set out in Appendix A remains within the cost of the Reference Scheme when valued on the early retirement pattern discussed in 3.4 and 3.6 above.

6 Limitations

6.1 A number of limitations apply to the comparisons made and the conclusions reached in this report. These are described below.

Verification statement

6.2 The purpose of this report is to provide HMT with the requested statement verifying that the cost of providing the new scheme structure is within specified cost limits.

6.3 This report has been produced on the basis of the comparisons requested by HMT as we understand them, namely:

> On an ongoing basis comparing the Reference Scheme with the new scheme structure allowing for the proposed change in assumptions outlined in 3.4 and 3.6

> On a long term basis comparing the impact of an increase in the average age of the scheme membership

> Sensitivity testing in accordance with assumptions directed by HMT.

6.4 The costs compared for this report will inevitably differ from the ultimate costs of the new scheme and Reference Scheme, for reasons such as:

> the membership data used to calculate the cost will differ from the actual scheme membership to which the new scheme will apply in future. The relative weighting of older and younger members in future may impact on how the proposed and Reference schemes compare in the longer term.

> the outturn will differ from the assumptions made. In particular the current assumed retirement and withdrawal rates may not occur in practice.

The above list is not exhaustive.

6.5 Some of the assumptions adopted are different between the Reference Scheme and the new scheme. Since only one scheme will be implemented in practice, it will not be possible to determine how close the assumption adopted for a scheme design that is not implemented would have been to actual experience.

Data, methodology and assumptions

6.6 The costs being compared are sensitive to the data, methodology and assumptions adopted.

6.7 However the purpose of the comparisons is to verify that the new scheme structure can be provided within the cost limits set relative to the Reference Scheme. The significance of the data, methodology and assumptions used to determine the comparable costs therefore depends on what benefit variations are considered.

6.8 As outlined in 6.4 above changes in the scheme membership or the assumed rates of retirement or withdrawal from service may result in an alternative conclusion being drawn if the comparison had been made at some future time.

6.9 We have not made any allowance in our calculations for the changes in State Pension Age that were announced in the Autumn Statement on 29 November 2011. Any future announcements of changes in the State Pension Age will affect the costs of the Scheme.

Calculations

6.10 Some of the calculations undertaken for the purposes of this document have been based on approximate methods. I do not expect this to materially affect the accrual rate of a scheme design that will pass the tests set out by HM Treasury.

Benefits

6.11 The 'Reference Scheme' set out by HM Treasury and the new scheme design do not specify the full detail of every aspect of the benefit structures. Where there is scope for interpreting what benefits the 'Reference Scheme' of new scheme design includes, the calculations value benefits which are consistent with the recommendations of Lord Hutton's Independent Public Service Pensions Commission and in line with the scheme's current provisions. The approach taken in determining the draft cost ceilings is outlined in our report *Review of the Firefighters' Pension Scheme (England): Assessment of cost ceiling and scheme specific proposals: Data, methodology and assumptions dated 11 August 2011.*

Third party reliance and liability

6.12 This report has been prepared for the Department for Communities and Local Government. I am content for the Department to release this report to third parties (including HM Treasury, other public service schemes, trades unions and parliament), provided that:

> it is released in full

> the advice is not quoted selectively or partially, and

> GAD is identified as the source of the report

6.13 Third parties whose interests may differ from those of the Department for Communities and Local Government should be encouraged to seek their own actuarial advice where appropriate.

6.14 This report has been provided to the Department for Communities and Local Government for the purpose of providing HMT with verification of the new scheme structure for the FPA post 2015. No person other than the Department for Communities and Local Government or third party other than HMT is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein, and GAD has no liability to any other person or third party for any act or omission taken, either in whole or in part, on the basis of this report.

Appendix A: New scheme design

A.1 The new scheme design is a Career Average Revalued Earnings (CARE) pension scheme which includes the following features:

a) A normal pension age of 60 (and a deferred pension age of State Pension Age)

b) Revaluation of past CARE service for active members in line with earnings

c) Pensions accrue at a rate of 1/58.7 for each year of service

d) Early retirement reduction factors for retirement from active service from age 57 based on the period to normal pension age rather than the period to deferred pension age. Early retirement reduction factors for all other retirements based on the period to deferred pension age.

e) Pensions in payment and in deferment indexed in line with prices[3]

f) No fixed lump sums, optional commutation, with a 12:1 factor for converting pension to lump sum.

g) Ancillary benefits (ill-health, death and survivors benefits) that match the current provisions that are currently available to new members (i.e. a lower tier ill health pensioner receives an unreduced CARE pension; a partner receives same proportion of member's pension as now)

h) Members rejoining after a period of deferment of less than 5 years can link new service with previous service, as if they had always been an active member (so previous accruals are indexed by earnings for that period of deferment)

i) Members transferring between public service schemes would be treated as having continuous active service (which would include those transferring between schemes who had rejoined public service after a gap of less than 5 years)

Members of the Firefighters' Pension Scheme 1992 on 1 April 2012 who are aged 45 or over on that day and members of the New Firefighters' Pension Scheme 2006 on 1 April 2012 who are aged 50 or over receive protection and are able to continue accruing benefits in their current scheme. Members of the Firefighters' Pension Scheme 1992 on 1 April 2012 who are aged 41 or over on that day and members of the New Firefighters' Pension Scheme 2006 on 1 April 2012 who are aged 46 or over will continue to accrue pension in their existing scheme on a tapered basis.

[3] Pensions in payment and in deferment are indexed in line with the Pensions Increase Act 1971 and increases in line with this Act are assumed to be in line with the CPI.

Appendix B: Data

B.1 This appendix contains summary statistics of the data used to value the Reference Scheme and the new scheme structure

B.2 Table B1 contains the number of members in the scheme, their pensionable salaries and their average ages weighted by pensionable salaries.

Table B1 - Active members as at 31 March 2011

	Number	Total Pensionable Salaries (£ million pa)	Average Age weighted by pensionable salaries
Males	33,953	1,064	41.0
Females	1,474	42	35.3
Total	**35,427**	**1,107**	**40.8**

Appendix C: Cost Ceiling Instructions

This report is based on the series of instructions which Treasury officials have provided as listed in the documents below.

- James Richardson's letter to Jeremy Pocklington of 22 July 2011. This outlined the cost ceiling test and stated that "cost ceilings cannot be exceeded in developing scheme specific proposals". Paragraphs 8-11 of Annex A of that letter described in more detail the arrangements for agreeing new scheme designs.

- GAD's note of 7 October 2011 *Cost ceilings for scheme level discussions: Advice on data, methodology and assumptions* which provided advice on appropriate data, methodology and assumptions for the purpose of cost ceiling calculations

- The Chief Secretary to the Treasury's letter to Brendan Barber on 7 October 2011. This confirms that the Government has agreed to spread the costs of transition and past service over a period of 7 years.

- James Richardson's letter to Jeremy Pocklington of 7 December 2011. This described how the cost ceiling test should be applied following the Chief Secretary to the Treasury's statement in the House of Commons on 2 November 2011. In particular, in respect of the 10-year protection announced on 2 November 2011.

- The Chief Secretary to the Treasury's letter to the Secretary of State for Communities and Local Government on 7 December 2011. This stated that the cost ceiling should be consistent with the GAD advice of 7 October 2011 with suitable adaptations to take account of the scheme specific circumstances.

- HMT instructions to DCLG and GAD's HM Treasury and DCLG teams of 8 February 2012. This email described the requirements on the methodology used for valuing the early retirement terms in the new scheme design.

HMT's instructions of 8 February 2012 are set out below.

Costs in respect of protected members.

Since the protected members will remain in the existing scheme, no additional costs would arise in respect of these members from the proposal to provide early retirement factors by reference to the active pension age. In these particular circumstances, HMT is content that the methodology and assumptions should be set accordingly so that the accrual rate in the Heads of Agreement does not reflect any cost in respect of protected members from the proposal to provide these early retirement factors.

Comparisons of cost in the longer term

The assumed retirement patterns for new entrants, as opposed to unprotected FPS members, mean that the relative service costs of this proposed design and the reference scheme vary in the longer term.

HMT intend that the accrual rate in the Heads of Agreement needs to take account of the comparison of costs in the longer term, as well as the comparison in the shorter term. This is consistent with the approach adopted for other schemes where the costs of proposed scheme designs were relatively higher in the longer term, further to paragraphs 8.21 to 8.23 of GAD's note of 7 October 2011.

Treatment of past service costs

A past service cost arises under this proposed scheme design in respect of unprotected FPS members. HMT policy on the treatment of this past service cost is set out below. This is consistent with the approach adopted for other schemes, in particular the approach adopted for the TPS verification report of 19 December 2011.

Having determined a proposed scheme design that remains within the published cost ceiling when assessed across members of all ages (including those within 10 years of pension age) in the long term and the short term, schemes may offer protection for those within 10 years of their scheme's Normal Pension Age on 1 April 2012 and a taper of 3-4 years without any reduction to the accrual rate of proposed scheme design. Schemes may offer transitional arrangements over and above the 10 year protection and 3-4 year taper, but in this case the accrual rate must be reduced to allow for the extra costs of additional protection. The costs of the proposed scheme design with additional transitional protection and reduced accrual rate must not exceed the costs of the original proposed scheme design with the 10 year protection and 3-4 year taper.

Note this requires an iterative process to set the cost limits:

- Firstly the accrual rate required for the proposed design (without additional transition) will need to be calculated – this is then used to set the cost limit for transition / past service costs
- Then this accrual rate would need to be adjusted for transition / past service costs

The 7 year averaging period still applies, and so the transition cost limit is as follows:

Average contribution rate required in 2015-2022 for proposed scheme design (including 10 year protection, taper, transition and adjusted accrual rate)	+	Past service costs spread over 7 years	≤	Average contribution rate required in 2015-2022 for original proposed scheme design (including 10 year protection and taper, but before allowance for transition and adjusted accrual rate)

Difference in member behaviour for new entrants post-2015

The nature of this proposed scheme may lead to differences in member behaviour: in particular, members may choose to retire between age 57 and age 60. In these cases, in accordance with paragraph 8.13 of GAD's note of 7 October 2011, HM Treasury sets assumptions for the purpose of verifying that proposed pension scheme design is within the cost ceiling that are consistent with those used in the calculation of cost ceilings, but HM Treasury considers making allowance for those behavioural differences. Under the reference scheme it is assumed that all age retirements of active members occur at age 60. HM Treasury intends that for the purposes of cost ceiling calculations it should be assumed that for new entrants post-2015 under this proposed scheme design 25% of active members in service at age 57 would retire and take an actuarial reduced benefits at that age.