HYMANS ROBERTSON

Lincolnshire Police - Police Pension Schemes

Police Pension Schemes Actuarial Valuation as at 31 March 2020 for IAS19 purposes

April 2020

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For and on behalf of Hymans Robertson LLP

Contents

Police Pension Schemes Actuarial Valuation as at 31 March 2020 for IAS19 purposes		Page
1	Introduction and summary	2
2	Approach	5
3	Data and information used	7
4	Actuarial assumptions	8
5	Miscellaneous matters	11

Appendices

Appendix 1 – Summary of benefits
Appendix 2 - Statistical assumptions
Appendix 3 – Assumptions Briefing Note

1 Introduction and summary

Scope

1 We have been instructed by the Authority named in the accompanying Results Schedule to undertake pension expense calculations in respect of the Police Pension Scheme ("the PPS"), the New Police Pension Scheme ("the NPPS") and the Police Pension Scheme 2015 ("the 2015 scheme"), referred hereafter as "the schemes", for the Authority named in the Results Schedule, for the purpose of complying with International Accounting Standard 19 'Employee Benefits' ("IAS19") ("the Accounting Standard") for the period ending 31 March 2020. The instruction is set out in the Terms of Engagement letter (see Results Schedule for date of signature).

2 These figures are prepared in accordance with our understanding of the latest version of the Accounting Standard. Our calculations and advice, in this report and the accompanying Results Schedule, have been carried out in accordance with the Pensions Technical Actuarial Standard adopted by the Financial Reporting Council, which came into effect on 1 July 2017. This report does not constitute an audit opinion in relation to the Authority. This constitutes a "valuation exercise", as the results of our calculations will be formalised in the Authority's financial statements.

3 Under accounting guidance, authorities are expected to disclose the sensitivity of the valuation to key assumptions, and the required information is contained in section 4 of this report.

Results

4 The results of our calculations for the period ended 31 March 2020 and the projected net pension cost for the year ended 31 March 2021 are set out in the Results Schedule.

5 The formal valuation of the schemes was carried out using membership data as at 31 March 2018. There will be an experience item in the accounts that reflects actual experience from 31 March 2018 to 31 March 2020.

6 The significant changes that have taken place during the year for a typical Authority are that:

- the present value of the Defined Benefit Obligation and projected pension expense for the year have decreased over the year. A marginal fall in bond yields has been countered by a greater fall in expectations of future inflation and an update to the life expectancy assumption;
- an allowance for the one year impact of the McCloud judgement on the Defined Benefit Obligation has been included, increasing the value placed on the Defined Benefit Obligation.

7 Please let us know if the Authority wishes to discuss the contents of this report or if, having considered the results, the Authority wishes to consider alternative assumptions. As noted above, the impact of varying certain key assumptions is illustrated in section 4.

Reliances and limitations

8 This report (including the accompanying Results Schedule) is provided solely to the Authority for the purpose of complying with IAS19 for the period ending 31 March 2020. It should not be used for any other purpose. It should not be released or otherwise disclosed to any third party except as required by law or with our prior written consent, in which case it should be released in its entirety. However, a copy of this report may be passed to the auditor to be used solely for the purpose of their audit.

9 We accept no liability to any third party unless we have expressly accepted such liability in writing.

10 Note that the methodology of the Accounting Standard means that the Defined Benefit Obligation identified in this report can vary significantly over short periods of time. This means that the results set out should not be taken as being applicable at any date other than 31 March 2020.

11 The figures presented in this report are prepared only for the purposes of IAS19 and have no validity in other circumstances.

12 The last full valuation of the Authority was carried out as at 31 March 2018. We have projected the results of this valuation forward using approximate methods. Further comments in relation to this can be found in section 2. Where requested, we have carried out a full valuation of injury benefits. The approach taken is set out in the Results Schedule.

13 The data with which we have been provided for this exercise is summarised in section 3.

14 The projected pension expense calculations for the year to 31 March 2021 may be used for the purpose of any interim financial reporting during the year to 31 March 2021. However, subsequent adjustments may be necessary to take account of:

- any material events, such as curtailments, settlements or the discontinuance of the Authority's participation in the schemes;
- any movement of active members between the schemes (i.e. members reaching the end of their tapered protection);
- any changes to accounting practices; or
- any changes to the schemes.

Note in particular, that we have made no allowance for any changes to the benefits in the schemes arising from Her Majesty's Treasury's cost management exercise, as these have been put on hold at time of writing.

15 Uniformed employees of the Authority may participate in the schemes, which are defined benefit statutory schemes. Appendix 1 summarises the principal benefits of the schemes.

16 The financing arrangements for schemes in England & Wales are set out in "Guidance for Police Authorities on the financial arrangements for police officers' pensions with effect from April 2006", published by the Communities and Local Government (CLG) in August 2006. There are no assets held against the liabilities.

17 Where requested, a separate report has been prepared in respect of civilian employees of the Authority, who may participate in the Local Government Pension Scheme (LGPS).

18 The schemes are defined benefit statutory schemes, administered in accordance with the Police Pensions Regulations 1987 (as amended), the New Police Pensions Scheme Regulations 2006 and the Police Pensions Regulations 2015. The schemes were contracted out of the State Second Pension, but this ceased in the scheme on 5 April 2016.

19 We have not been notified by the auditor to the Authority of the materiality limits which apply to the Authority and we have therefore prepared these figures using methods which are as accurate as is feasible using the data made available to us and the timescale within which the report is required.

Next steps

20 The information set out in this report should be included in a disclosure note in the Authority's report and accounts.

We would be pleased to discuss this report with the Authority and its auditors.

2 Approach

Valuation method

1 As required under the Accounting Standard we have used the projected unit credit method of valuation.

2 No allowance has been made for administration expenses in the present value of the defined benefit obligation, the current service cost or the balance sheet.

3 The last full valuation of the scheme was carried out as at 31 March 2018. We have projected the results of this valuation forward to 31 March 2020 using approximate methods. The roll-forward allows for:

- changes in financial and life expectancy assumptions;
- additional benefit accrual;
- actual cash flows over the period and estimated where necessary; and
- membership information as summarised in Section 3.

4 In order to assess the value of the Authority's liabilities as at 31 March 2020, we have rolled forward the value of the Authority's liabilities calculated at the latest valuation for the Authority, allowing for the different financial assumptions required under the Accounting Standard at the accounting date. In calculating the current service cost, we have allowed for changes in the Authority's pensionable payroll as estimated from contribution or payroll information provided.

5 In preparing the balance sheet at 31 March 2020 and the revenue account to 31 March 2020, no allowance is made for the effect of any changes in the membership profile since 31 March 2018. The effect is likely to be immaterial in actuarial terms. If there have been significant changes (e.g. a significant maturing of the Scheme or a large number of new entrants) since 31 March 2018, the Authority should discuss with its auditor whether an investigation into the effect on the service cost for 2019/20 is required.

6 Whilst the liabilities calculated under the Accounting Standard include an allowance for some premature retirements on grounds of ill-health, there is no allowance for non ill-health retirements before the earliest age at which the serving officer could retire or early retirements as a result of an injury sustained on duty. We do however make a contingent allowance for future payments of injury awards.

7 It is not possible to assess the accuracy of an estimated rolled-forward liability without conducting a full valuation. An estimated liability will not reflect differences in demographic experience from that assumed (e.g. pensioner longevity) or the impact of differences between aggregate changes in salary and pension and changes for specific individuals.

8 Whilst we have no reason to believe that the approximations used in rolling forward the 31 March 2018 valuation to 31 March 2020 introduce any undue distortion in the results, the Authority and its auditors may wish to consider the size of the liabilities in relation to the Authority's materiality limits.

Benefit changes

9 The pension expense for the period to 31 March 2020 allows for the current schemes' benefit design, but with a further 1 years estimated allowance for resolution of the McCloud case. The allowance for the extra year of accrual in 2019/20 can be seen flowing through the OCI as per the guidance issued by CIPFA. This has been based on the same underlying methodology adopted for the disclosures as at 31 March 2019 i.e. reliant on the analysis conducted by GAD taking into account differences in local membership profile where appropriate.

Note in particular, that we have made no allowance for any changes to the benefits in the schemes arising from Her Majesty's Treasury's cost management exercise, as these have been put on hold at time of writing.

On 1 April 2015 a new benefit structure came into effect. These changes have been taken into account in the balance sheet, or revenue account disclosures as at 31 March 2020 and projected pension expense for the year ending 31 March 2021.

The new Regulations[1] in their current form state that all current active members will move into the 2015 scheme from 1 April 2015 unless they qualified for protections that allow them to remain in their current scheme.

Calculation of the defined benefits obligations, current service cost and projected service cost are based on the benefit structure in the scheme each member currently participates in, allowing for these protections. We have made allowance for members moving between schemes under the tapered protections in our calculation of payroll and projected payroll based on the contribution information provided by the Authority.

[1] Police Pensions Regulations 2015

3 Data and information used

Data sources

1 Our calculations are based on the following information and documents:

- the individual membership data submitted as at 31 March 2018 for the purpose of producing disclosures as at 31 March 2019;
- employee contributions up to the latest available date;
- benefit expenditure up to the latest available date; and
- any retirements in the accounting period on unreduced pensions which are not anticipated in the normal Authority service cost (e.g. non ill-health retirements before the earliest age at which the serving officer could retire or early retirements as a result of an injury sustained on duty).

2 We have carried out certain checks for reasonableness on the data, but have only been able to carry out limited validity checks. We are unable to independently verify whether the data supplied is accurate. Before using the results, the Authority should satisfy itself that the data summarised in the results schedule agrees with its own records.

Individual membership data

3 The membership data as at the last valuation, from which this year's results are rolled forward, and the latest available membership data are summarised in the Results Schedule.

4 Details of the new early retirements from 1 April 2019 to the latest available date not allowed for in our IAS19 assumptions are summarised in the Results Schedule. Data in respect of injury retirements are shown separately in the results schedules.

Additional comments

5 Any specific comments on the data provided in respect of the Authority are set out in the Results Schedule.

4 Actuarial assumptions

Reliances and limitations

1 Our advice to the Employer on the assumptions (and resulting disclosures) to be adopted for the purpose of the Accounting Standard is compliant with Technical Actuarial Standard 100[2]. This report, the accompanying Results Schedule and our briefing note comprise the totality of our advice on the assumptions.

Accounting principles

2 We have been advised of the accounting principles adopted by the Authority in preparing its accounts. The report and Results Schedule have been prepared in line with our understanding of the relevant guidance. The Authority should confirm adherence of the guidance with its auditor.

Responsibility

3 The assumptions are ultimately the responsibility of the Authority based on actuarial advice.

Demographic assumptions

4 For the full valuation as at 31 March 2018, we adopted a set of demographic assumptions based on analysis of experience of the PPS where available. Since limited data is available on which to base these for the NPPS and the 2015 scheme, we have taken account of experience of the PPS where appropriate and applied actuarial judgement elsewhere. Full details of these assumptions are set out in Appendix 2.

5 The post-retirement mortality assumptions that we recommend this year are 100% of the S2NFA and S2NMA 'year of birth' tables[3] with future improvements based on the CMI 2018 model with a long term rate of improvement of 1.25% per annum. The adjustment to the future improvement assumption has been updated to a more recent model (from CMI 2017 to CMI 2018).

6 We have assumed that serving officers in the PPS retire at the earlier of attaining 30 years service, (subject to a minimum age of 50) or at age 55. We assume that serving officers in the NPPS will retire at age 55 and that serving officers in the 2015 scheme will retire at age 60. We have also included an allowance for some premature retirements on grounds of ill-health.

7 Promotional salary scales have been set in accordance with the published police pay scales. Please see Appendix 2 for more details.

Financial assumptions

8 The financial assumptions used to calculate the components of the pension expense for the year ended 31 March 2020 were those from the beginning of the year (i.e. 31 March 2019) and have not been changed during the year. Our recommended assumptions for disclosure of the Defined Benefit Obligation at 31 March 2020 are summarised below along with those at 31 March 2019.

[2] Technical Actuarial Standards (TASs) are issued by the Financial Reporting Council (FRC) and set standards for certain items of actuarial work, including the information and advice contained in this report.

[3] These standard tables are published by the Continuous Mortality Investigation (CMI) of the actuarial profession.

Period Ended	Weighted Average Duration		
	Short	Medium	Long
	31 Mar 2019	31 Mar 2019	31 Mar 2019
	% p.a.	% p.a.	% p.a.
Pension Increase Rate	2.5%	2.5%	2.4%
Salary Increase Rate	3.5%	3.5%	3.4%
Discount Rate	2.4%	2.4%	2.5%
CARE Revaluation Rate	3.75%	3.75%	3.65%

Period Ended	Weighted Average Duration		
	Short	Medium	Long
	31 Mar 2020	31 Mar 2020	31 Mar 2020
	% p.a.	% p.a.	% p.a.
Pension Increase Rate	2.0%	1.9%	1.8%
Salary Increase Rate	2.9%	2.8%	2.7%
Discount Rate	2.3%	2.3%	2.3%
CARE Revaluation Rate	3.25%	3.15%	3.05%

Full details of how we have determined our recommended assumptions are set out in Appendix 3.

Reasonableness of assumptions

9 There is a range of actuarial assumptions which are acceptable under the requirements of the Accounting Standard. We consider that the assumptions above are within the acceptable range and are thus consistent with the requirements of the Accounting Standard. No allowance has been included in the cost of accruing benefits for expenses.

Sensitivity to assumptions

10 Accounting guidance requires disclosure of the sensitivity of the results to the methods and assumptions used.

11 The costs of a pension arrangement require estimates regarding future experience. The financial assumptions used for reporting under the Accounting Standard are the responsibility of the Authority. These assumptions are largely prescribed at any point and reflect market conditions at the reporting date. Changes in market conditions that result in changes in the net discount rate (essentially the difference between the discount rate and the assumed rates of increase of salaries, deferred pension revaluation or pensions in payment), can have a significant effect on the value of the liabilities reported.

12 A reduction in the net discount rate will increase the assessed value of liabilities as a higher value is placed on benefits paid in the future. A rise in the net discount rate will have an opposite effect of similar magnitude.

13 There is also uncertainty around life expectancy of the UK population. The value of current and future pension benefits will depend on how long they are assumed to be in payment.

14 The disclosures have been prepared using longevity assumptions as per paragraph 5. Based on these assumptions, average life expectancies at age 60 are as per the Results Schedule.

15 Details of the effect on the Scheme of the changes in the above assumptions are displayed in the Schedule of Results (Section 5 – Sensitivity Analysis).

Risks and uncertainties

16 There are risks and uncertainties associated with whatever assumptions are adopted. The Accounting Standard requires the assumptions to be determined on a 'best estimate' basis. However, the assumptions are in effect projections of future investment returns and demographic experience many years into the future and there is inevitably a great deal of uncertainty inherent in what constitutes 'best estimate' with such projections. For the purpose of this report, we have interpreted best estimate to mean that the proposed assumptions are 'neutral': there is in our opinion an equal chance of actual experience being better or worse than the assumptions proposed.

5 Miscellaneous matters

Past service costs (including curtailments)

1 The reserving for future liabilities assumes that officers will retire on attaining 30 years service or at age 55 if earlier for members of the PPS, age 55 for members of the NPPS and age 60 in the 2015 scheme, except on grounds of incapacity. Therefore, a past service cost may arise when officers retire before satisfying these criteria (except on grounds of incapacity).

2 The results schedules set out details of any early retirements resulting in a past service cost.

3 In addition, the results schedules set out if any injury retirements occurred over the year.

Settlements

4 We are not aware of any other liabilities being settled during the year ended 31 March 2020 for any of the schemes.

Bulk transfers

5 We are not aware of any bulk transfer (in or out) that would have a material impact on the results of the IAS19 valuation as at 31 March 2020 for the Authority. No allowance has been made for any mergers of authorities from 1 April 2019 (where applicable).

Deferred tax

6 No allowance has been made for deferred tax, and the appropriate treatment in respect of this should be agreed with the Authority's auditors.

Part-time employees

7 Part-time employees have been eligible to join the schemes since September 2004.

The Police Pension Scheme 2015 (2015 scheme)

8 The 2015 scheme came into effect from 1 April 2015. The new arrangements apply to all new joiners from that date and to any members of the PPS and NPPS who were unprotected on 1 April 2015, who come to the end of their tapered protection or who opt to join the new scheme.

Commutation Factors (PPS)

9 The figures in this results schedule are based on the factors for converting pension to retirement lump sum announced on 18 March 2016.

Injury retirement

10 On 6 April 2006 HM Revenue and Customs' regulations about tax and pensions came into force. One of the requirements was that provisions for benefits which are not determined by building up pension rights can no longer be in regulations governing pension schemes.

11 As a consequence the Police (Injury Benefit) Regulations 2006 were made. These are essentially a consolidation of the provisions as they stood for benefits paid out in the event of an officer retiring or leaving dependants after an injury in the line of duty.

12 As requested, an allowance has been made for contingent injury pensions in the balance sheet as at 31 March 2020 and in projected pension expense to 31 March 2021.

13 The liabilities in respect of injury benefits and the benefits payments are set out in the disclosure. Whilst the injury benefit does not accrue evenly throughout the employee's service (and indeed may be payable to those who are not pension scheme members), we have nevertheless adopted a "current service cost" approach. In effect we assume that a further year's service accrues a further 5% of the additional entitlement after each 10 year's service. This is appropriate when applied to a reasonably large group of employees, as approximately 5% of them will cross into the next 10 year's banded entitlement each year.

Results and disclosures

14 The results and disclosures for 2019/20 are set out in the attached results schedules.

Appendix 1 – Summary of benefits

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
Eligibility	Including permanent employees who joined on or before 6 April 2006.	Including permanent employees who joined on or after 6 April 2006 and other members who opt to transfer from PPS to NPPS.	Including permanent employees who joined on or after 1 April 2015 and other members of PPS and NPPS who do not have full protection benefits for their previous scheme.
Member Contributions	Pre 1 April 2012: 11% of earnings. Post 1 April 2012: Banded rates (14.25%-15.05%) depending upon level of basic annual salary from 1 April 2019 to 31 March 2020.	Pre 1 April 2012: 9.5% of earnings (or 6% if ineligible for ill-health pension). Post 1 April 2012: Banded rates (11.0%-12.75%) depending upon level of basic annual salary from 1 April 2019 to 31 March 2020.	Full member contributions (if eligible for ill-health pension): Banded rates (12.44%-13.78%) depending upon level of annualised rate of pensionable earnings from 1 April 2019 to 31 March 2020. Reduced member contributions (if ineligible for ill-health pension): To access the band to which a part-time member belongs, full-time equivalent pensionable earnings apply
Employer contributions	Under new financing arrangements from 1 April 2006, employers pay a defined percentage of pensionable pay.	Under new financing arrangements from 1 April 2006, employers pay a defined percentage of pensionable pay	31% of member's annualised rate of pensionable earnings as determined by the Secretary of State in conjunction with the scheme actuary.

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
Normal Retirement Age	Members can retire on attaining 25 years of pensionable service, subject to a minimum age of 50 and a maximum of Compulsory Retirement Age (CRA) which is dependent upon rank. Members can also retire on attaining 30 years of service, regardless of age. Unreduced benefits may also be paid at the Compulsory Retirement Age with less than 25 years of pensionable service.	Age 55 if remain in police service until that age. Age 65 if leave police service before age 55.	Age 60 if remain in police service until that age. State pension age if leave police service before age 60.
Early Retirement	Retirement on the grounds of ill health and / or injury with enhanced benefits.	If a member leaves the service or opts out of the NPPS before age 55 then they can only be entitled to a deferred pension, regardless of how many years of pensionable service they have.	Early payment reduction is applied to the members benefit if an active member retires before their normal pension age or if a deferred member retires before state pension age.
Pension at Retirement Age	1/60th of pensionable remuneration for each year of pensionable service up to 20 years and 1/30th of pensionable remuneration for each year of pensionable service thereafter, subject to a maximum pension entitlement of 40/60. Pensionable remuneration is normally the average remuneration in the employee's final year.	1/70th of pensionable remuneration for each year of pensionable service. Maximum is 50% of final pensionable remuneration after 35 years of service. Pensionable remuneration is the greater of a) best annual remuneration in the last 3 years; and	1/55.3th of pensionable earnings each year is added to the members pension pot for each year they are in the scheme. Pension at retirement is the sum of each of the accrued pension pots subject to revaluation at a rate of CPI+1.25% per year. Pensionable earnings is the pay that the member is entitled to in each period of service.

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
		b) best average over 3 consecutive years in the last 10 years.	Pensionable earnings include basic salary, London weighting, where applicable and increases in pay on temporary salary and temporary promotion. Allowances are not pensionable and do not count.
Lump Sum at Retirement Age	A lump sum can be taken at retirement in return for a reduced pension. A maximum of 1/4 of pension at retirement age may be commuted at the time of retirement for a lump sum that is calculated using factors issued by the Government Actuary's Department (GAD).	4 times initial annual pension. Members have the option of exchanging all or part of the lump sum for extra pension. The factors used are issued by the Government Actuary's Department (GAD).	A lump sum can be taken at retirement in return for a reduced pension. A maximum of 1/4 of pension at retirement age may be commuted at the time of retirement for a lump sum that is equal to £12 for every £1 of pension given up.
Ill Health Pension	An ill-health pension with enhancement determined by length of pensionable service is paid immediately to members compulsorily retired early on medical grounds.	Two tier ill-health benefits: a) Standard ill-health pension payable if ordinary disabled for police service duties only but able to undertake other employment. Benefit amount based on salary at and service to date of retirement; and	Two tier ill-health benefits: a) Standard ill-health pension payable if ordinary disabled for police service duties only but able to undertake other employment. Benefit amount based on accrued benefit amount to date of retirement; and b) Enhanced benefits payable if permanently unable to perform any other regular employment.

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
		b) Enhanced benefits payable if permanently unable to perform any other regular employment. Service is enhanced by up to 50% of prospective service to age 55.	Enhancement is dependent on the number of years of service in the scheme.
Injury Awards	An injury award, consisting of a lump sum and a pension, is paid when retirement results from injury on duty. The calculation of the award takes into account the extent to which the member's earning capacity has been affected by the relevant injury, pensionable remuneration and length of service.	An injury award, consisting of a lump sum and a pension, is paid when retirement results from injury on duty. The calculation of the award takes into account the extent to which the member's earning capacity has been affected by the relevant injury, pensionable remuneration and length of service.	An injury award, consisting of a lump sum and a pension, is paid when retirement results from injury on duty. The calculation of the award takes into account the extent to which the member's earning capacity has been affected by the relevant injury, pensionable remuneration and length of service.
Pension Increases	All pensions in payment, deferred pensions and children's pensions are increased annually in line with the Consumer Price Index.	All pensions in payment, deferred pensions and children's pensions are increased annually in line with the Consumer Price Index.	All pensions in payment, deferred pensions and children's pensions are increased annually in line with the Consumer Price Index.
Contracted in / out	Contracted out of the State Second Pension (formerly the State Earnings Related Pension scheme). (Until the	Contracted out of the State Second Pension (formerly the State Earnings	Contracted out of the State Second Pension (formerly the State Earnings Related

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
	abolition of contracting out from 1 April 2016.)	Related Pension scheme). (Until the abolition of contracting out from 1 April 2016.)	Pension scheme). (Until the abolition of contracting out from 1 April 2016.)
Death in Service Benefits	A lump sum benefit of 2 times pensionable remuneration at date of death, plus, A spouse's pension of ½ of the member's notional pension based on total service that the employee would have been able to reckon if he/she had retired on the grounds of ill health at the date of death plus, Children's pensions may also be payable.	A lump sum benefit of 3 times pensionable remuneration at date of death, plus, A spouse's pension of ½ of the higher tier level of ill-health benefit that would have applied as at the date of death plus, Children's pensions may also be payable.	A lump sum benefit of 3 times pensionable remuneration at date of death, plus, A spouse's pension of ½ of the higher tier level of ill-health benefit that would have applied as at the date of death plus, Children's pensions may also be payable.
Death after Retirement Benefits	Spouses and civil partners receive a pension equal to one half of the member's actual pre-commutation pension (based on service after 1988 for female civil partners and service after 1990 for male civil partners and widowers).	A pension equal to one half of the member's actual pre-commutation pension.	A pension equal to one half of the member's actual pre-commutation pension.
Who is entitled to death benefits?	Spouse or civil partner. Pensions are not payable to unmarried partners who are not civil partners. Any pension for a spouse or civil partner ends on his/her remarriage or new civil partnership, or on cohabitation.	Pensions can also be paid to unmarried partners who are not civil partners if appropriate conditions are satisfied. Pension payable for life.	Pensions can also be paid to unmarried partners who are not civil partners if appropriate conditions are satisfied at the discretion of the scheme manager. Pension payable for life.

	Police Pension Scheme (PPS) (1987)	New Police Pension Scheme (NPPS) (2006)	Police Pensions Scheme 2015
Benefits on Leaving Service	Members who leave service are entitled to: a) a refund of contributions; or b) a preserved pension payable from age 60; or c) a transfer payment to another scheme or to an insurance company	Members who leave service are entitled to: a) a refund of contributions; or b) a preserved pension payable from age 65 without reduction; or c) a transfer payment to another scheme or to an insurance company.	Members who leave service are entitled to: a) a refund of contributions; or b) a preserved pension payable from state pension age without reduction; or c) a transfer payment to another scheme or to an insurance company.

Appendix 2 - Statistical assumptions

Police pension scheme (PPS)

The statistical assumptions adopted are based on the analysis of the incidence of retirement, and withdrawal, of employees contributing to the Police Pension scheme. The post retirement mortality assumptions are based on national mortality tables.

Sample rates are shown in the following tables:

Age	Incidence per 1000 active members per annum						Promotional Salary Scales					
	Male			Female			Male			Female		
	Death	Ill Health Retirement	Withdrawal	Death	Ill Health Retirement	Withdrawal	PC	PS	Inspector and above	PC	PS	Inspector and above
							55	60	65	55	60	65
20	0.3	0.1	-	0.1	0.2	-	100	100	100	100	100	100
25	0.3	0.6	19.0	0.1	1.5	57.0	100	100	100	100	100	100
30	0.3	1.1	11.0	0.2	5.5	59.0	133	100	100	133	100	100
35	0.4	2.0	6.0	0.4	10.5	25.0	157	100	100	157	100	100
40	0.6	3.9	3.0	0.6	17.0	7.0	168	121	114	168	121	114
45	1.0	11.5	1.4	0.9	23.0	4.0	171	129	129	171	129	129
50	1.6	24.5	0.5	1.3	32.5	1.4	172	133	137	172	133	137
55	2.5	32.0	-	1.8	45.0	-	172	134	139	172	134	139
60	4.5	39.5	-	2.2	57.5	-	172	134	139	172	134	139

	Other Assumptions
Pensioner Mortality	Current Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Prospective Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Ill Health Retirement 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.

	Other Assumptions
Proportions Married (including a loading for dependants benefits)	90% of members will be married and entitled to a spouse's pension
Ill health benefits	20% of ill health retirees will receive higher tier ill health benefits and 80% will receive lower tier benefits (new scheme only)
Wife/Husband Age Difference	Husbands are assumed to be 3 years older than their wives
Proportion commuting pension for lump sum	Members will elect to take 90% of the maximum tax free cash up to HMRC limits.
Age retirements	I have assumed members will retire on the date an employee reaches 30 years service, subject to a minimum of age 50 and maximum age of 55 for members.

* Where a member has accrued benefits in more than one scheme, each tranche of benefit will be assumed to be payable from the retirement age applicable for each scheme.

New police pension scheme (NPPS)

The statistical assumptions adopted are based on the expectation of retirement and withdrawal for members of the NPPS. Where possible the experience of the PPS has been used to derive these assumptions.

The demographic assumptions for the NPPS are therefore the same as those for the PPS except as follows:

a) *Ill-health retirements*: In the NPPS the benefit structure is different. We have therefore assumed that 20% of members retiring through ill-health receive an enhanced ill-health pension and 80% receive a standard ill-health pension. We have also adjusted the pattern of incidence rates to reflect the difference in normal retirement age.

b) *Age retirements:* We have assumed that members will retire when they can first so without an actuarial reduction to their benefits. For active members this occurs at age 55, whereas for deferred members this occurs at age 65 if they leave the scheme before age 55.

c) *Withdrawals:* We have assumed that no members will withdraw after age 50 as this would increase the age at which they can receive unreduced benefits from 55 to 65.

Sample rates are shown in the table below:

Age	Incidence per 1000 active members per annum with Compulsory Retirement Age as detailed						Promotional Salary Scales					
	Male			Female			Male			Female		
	Death	Ill Health Retirement	Withdrawal	Death	Ill Health Retirement	Withdrawal	PC	PS	Inspector and above	PC	PS	Inspector and above
20	0.3	0.1	-	0.1	0.3	-	100	100	100	100	100	100
25	0.3	0.8	19.0	0.1	2.4	57.0	100	100	100	100	100	100
30	0.3	1.6	11.0	0.2	8.6	59.0	133	100	100	133	100	100
35	0.4	3.0	6.0	0.4	16.4	25.0	157	100	100	157	100	100
40	0.6	5.9	3.0	0.6	26.5	7.0	168	121	114	168	121	114
45	1.0	17.3	1.4	0.9	35.8	4.0	171	129	129	171	129	129
50	1.6	36.3	0.5	1.3	50.6	1.4	172	133	137	172	133	137
55	2.5	48.0	-	1.8	70.0	-	172	134	139	172	134	139
60	4.5	-	-	2.2	-	-	172	134	139	172	134	139

PC and PS are Police Constable and Sergeant respectively.

	Other Assumptions
Pensioner Mortality	Current Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Prospective Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Ill Health Retirement 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
Proportions Married (including a loading for dependants benefits)	90% of members will be married and entitled to a spouse's pension
Commutation assumptions	We have made no allowance for commutation of lump sum to pension as permitted in the new scheme. We have also made no allowance for members to commute any of their pension for additional lump sum.
Wife/Husband Age Difference	Husbands are assumed to be 3 years older than their wives
Age retirements	We have assumed active members retire at age 55.

* Where a member has accrued benefits in more than one scheme, each tranche of benefit will be assumed to be payable from the retirement age applicable for each scheme.

Police 2015 pension scheme (2015 Scheme)

The statistical assumptions adopted are based on the expectation of retirement and withdrawal for members of the 2015 Scheme. The demographic assumptions for the 2015 Scheme are the same as those for the NPPS.

Sample rates are shown in the table below:

Age	Incidence per 1000 active members per annum with Compulsory Retirement Age as detailed						Promotional Salary Scales					
	Male			Female			Male			Female		
	Death	Ill Health Retirement	Withdrawal	Death	Ill Health Retirement	Withdrawal	PC	PS	Inspector and above	PC	PS	Inspector and above
20	0.3	0.1	-	0.1	0.3	-	100	100	100	100	100	100
25	0.3	0.8	19.0	0.1	2.4	57.0	100	100	100	100	100	100
30	0.3	1.6	11.0	0.2	8.6	59.0	133	100	100	133	100	100
35	0.4	3.0	6.0	0.4	16.4	25.0	157	100	100	157	100	100
40	0.6	5.9	3.0	0.6	26.5	7.0	168	121	114	168	121	114
45	1.0	17.3	1.4	0.9	35.8	4.0	171	129	129	171	129	129
50	1.6	36.3	0.5	1.3	50.6	1.4	172	133	137	172	133	137
55	2.5	48.0	-	1.8	70.0	-	172	134	139	172	134	139
60	4.5	-	-	2.2	-	-	172	134	139	172	134	139

PC and PS are Police Constable and Sergeant respectively.

	Other Assumptions
Pensioner Mortality	Current Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Prospective Pensioners 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.
	Ill Health Retirement 100% of S2NFA/S2NMA with future improvement in line with the CMI 2018 model with a long term rate of improvement of 1.25% per annum.

	Other Assumptions
Proportions Married (including a loading for dependants benefits)	90% of members will be married and entitled to a spouse's pension
Ill health benefits	20% of ill health retirees will receive higher tier ill health benefits and 80% will receive lower tier benefits (new scheme only)
Commutation assumptions	We have made no allowance for commutation of lump sum to pension as permitted in the new scheme. We have also made no allowance for members to commute any of their pension for additional lump sum.
Wife/Husband Age Difference	Husbands are assumed to be 3 years older than their wives
Age retirements*	It is assumed active members retire at age 60 and deferred members at their State Pension Age.

* Where a member has accrued benefits in more than one scheme, each tranche of benefit will be assumed to be payable from the retirement age applicable for each scheme.

Appendix 3 – Assumptions Briefing Note

HYMANS ROBERTSON

Briefing note

Police and Fire Pension Schemes: Accounting Assumptions for 31 March 2020 **April 2020**

> "We recommend that each Authority should discuss the proposed assumptions and approach with their auditor"

This briefing note has been prepared by Barry Dodds and Kameel Kapitan, on behalf of Hymans Robertson, to outline the approach taken to derive the default assumptions for IAS19 reporting for the Police and Fire Pension Schemes as at 31 March 2020.

This note also summarises our approach for the modified firefighters' scheme, and the new scheme (which came into effect from 1 April 2015) in this year's reports.

We have discussed the approach to set our default assumptions and methodology with the National Audit Office, who have not raised any concerns.

Changes in market conditions since 31 March 2019

The change in market conditions since 31 March 2019 is expected to lead to a higher net discount rate as at 31 March 2020. All else being equal this would mean there would be a lower value placed on the IAS19 liabilities.

Ultimately, the impact of the change in discount rate could vary significantly between individual Authorities although it is likely that most, based on current market conditions, will see a significant impact on their balance sheet over the 2019/20 year.

Discount Rate

IAS19 states that the discount rate used to place a value on the liabilities should be determined by reference to market yields on high quality corporate bonds at the reporting date. In addition, the currency and term of the high quality corporate bonds used to set the discount rate should be consistent with the currency and term of the liabilities.

Corporate bond yield curve

Government bond yield curves are updated and available on a daily basis from the Bank of England. It is therefore relatively easy to identify a spot yield on Government bonds at any duration and at any date. Unfortunately, a similarly accessible corporate bond yield curve is not so readily available.

We have adopted an approach to setting the discount rate whereby a "Hymans Robertson" corporate bond yield curve is constructed based on the constituents of the iBoxx AA corporate bond index.

Weighted average duration

The discount rate should reflect the 'term' of the benefit obligation. We have interpreted 'term' to be the weighted average duration of the benefit obligation. This is broadly defined as '*the weighted average time until payment of all expected future discounted cashflows, determined based on membership and the financial and demographic assumptions at a particular time*'. The shorter the duration, the more 'mature' the authority.

We will calculate a weighted average duration of liabilities across all schemes and use this duration to determine a single set of assumptions. This approach remains unchanged from last year.

The duration categories are as defined below:

Weighted average duration at most recent actuarial valuation	Duration category
Less than 17 years	Short
Between 17 and 23 years	Medium
More than 23 years	Long

The weighted average duration used to identify the appropriate category will be based on the membership data provided as at 31 March 2018.

Retail Prices Inflation (RPI)

This assumption is typically derived from yields available on fixed interest and index linked government bonds, and should be consistent with the derivation of the discount rate.

We use a market implied inflation curve over a range of maturities. Cashflow weighted single RPI rates are derived from the market implied inflation curve that recognise the weighted average duration of each corresponding duration category defined above.

Pension Increases (CPI)

The pension increase assumption is set in line with our default Consumer Prices Index (CPI) assumption. As a market in CPI linked bonds does not exist, we need to estimate the long term gap between RPI and CPI in order to derive a CPI assumption for accounting purposes.

Our default assumed RPI-CPI gap will be 0.9% p.a. (updated from the 2019 accounting exercise).

CARE Revaluation

The CARE revaluation rates for the 2015 scheme will be as laid out in the scheme's regulations. These are CPI+1.25% p.a. for the Police scheme and national average earnings for the Fire scheme, where national average earnings will be equal to our salary growth assumption.

Longevity assumptions

The baseline assumption that we recommend is adopted for the 2020 IAS19 exercise are the S2NMA and S2NFA year of birth tables with a 100% loading for the Police scheme and 110% loading for the Fire scheme.

We recommend that the allowance for future improvements should be based on the CMI 2018 model and a long term rate of improvement of 1.25% per annum.

Retirement Age

In line with the 2019 calculations, we have assumed that officers will retire from the pre-2015 schemes when they reach 30 years of service, unless they reach the normal retirement age for their rank before this date. In the 2015 scheme we have assumed the officers will retire at 60, in line with the scheme rules.

Salary Scales

The promotional salary scales for all schemes are based on published salary scale tables and are as per those used last year. Details of the salary scales can be found in the appendix to the relevant report.

Salary Growth

The assumption for the rate of increase in pensionable salaries is 0.9% per annum above market derived CPI.

Allowance for Contingent Injury Benefits

An approximate allowance has been made for contingent injury pensions in line with last year's disclosures.

Historical data was not available to allow the required analysis to be carried out so that the assumptions could be set with reference to incidence rate and amount of injury benefit awarded. Therefore, the assumption was set following a high level analysis of injury liabilities and pension amounts relative to normal pension liability and pension amounts.

This approach in effect assumes that the historical relationship between injury and pension benefit liabilities has been broadly consistent and will continue to be so. We have continued with the assumptions adopted last year and will continue to monitor this.

Changes to the Police and Fire Pension Schemes

From 1 April 2015 a new benefit structure came into effect for the Police and Firefighters Pension Schemes. The 2020 reports are based on a rollforward from the latest full valuation for each Authority (2018 or 2019). Factoring in actual membership movements to a recent date allows us to better capture the complex nature of the transitional protections that exist following the introduction of this scheme.

In line with last year, the calculation of the defined benefits obligations, current service cost and projected service cost will be based on the benefit structure in the scheme each member participated in at the time of the last full valuation date. We make allowance for members moving between schemes since this date in our calculation of payroll and projected payroll.

We have continued to make allowance for McCloud in the same way as in 2019, reliant on the analysis conducted by GAD, taking into account differences in local membership profile where appropriate.

For the avoidance of doubt, no allowance has been made for the proposed benefit changes as part of HM Treasury's cost management exercise as these have been put on hold.

Modified Firefighters' Scheme

The modified firefighters' scheme was introduced to give retained firefighters the option to buy pension rights comparable to those enjoyed by regular firefighters employed during the period 1 July 2000 and 5 April 2006.

Where supplied with sufficient information, the defined benefits obligations, current service cost and projected service cost for these members will be included in the accounts.

Default assumptions (based on market conditions as at 31 March 2020)

The following table shows our default financial assumptions at 31 March 2020, based on the above methodology. Our default assumptions used for the 31 March 2019 exercise are also shown for comparison purposes.

Duration category	31 March 2019		31 March 2020	
	Discount rate	RPI (CPI)	Discount rate	RPI (CPI)
Short	2.4%	3.5% (2.5%)	2.3%	2.9% (2.0%)
Medium	2.4%	3.5% (2.5%)	2.3%	2.8% (1.9%)
Long	2.5%	3.4% (2.4%)	2.3%	2.7% (1.8%)

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