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HYMANS ROBERTSON

London Borough of Brent Pension Fund

Report on the actuarial valuation at 31 March 2022

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03 February 2023
For and on behalf of Hymans Robertson LLP

Use the menu bar above to navigate to each section.

Contents

In this report:

Executive Summary

We have been commissioned by London Borough of Brent (the Administering Authority) to carry out a valuation of the London Borough of Brent Pension Fund (the Fund) as at 31 March 2022. This fulfils Regulation 62 of the Local Government Pension Scheme Regulations 2013. This report is a summary of the valuation.

Contribution rates

The contribution rates for individual employers set at this valuation can be found in the Rates & Adjustments certificate. Table 1 shows the combined individual employer rates set at this valuation and the last valuation (31 March 2019).

Table 1: Whole fund contribution rates compared with the previous valuation

	This valuation 31 March 2022		Last valuation 31 March 2019	
Primary Rate		21.8% of pay		19.0% of pay
Secondary Rate	2023/2024	£18,538,000	2020/2021	£21,499,000
	2024/2025	£16,707,000	2021/2022	£21,987,000
	2025/2026	£14,749,000	2022/2023	£22,487,000

The primary rate includes an allowance of 1.3% of pensionable pay for the Fund's expenses.

Employees pay a contribution to the Fund in addition to these rates. These rates are set by the LGPS Regulations. The average employee contribution rate at 31 March 2022 is 6.7% of pay (6.7% at 31 March 2019).

Funding position

As at 31 March 2022, the funding position has improved from the last valuation. The required investment return to be 100% funded is now 5.1% pa (5.9% pa at 2019). The likelihood of the Fund's investment strategy achieving the required return is 62% (48% at 2019). Table 2 shows the single reported funding position at the current and previous valuation.

Table 2: Single reported funding position at 31 March 2022 compared with 31 March 2019

Valuation Date	31 March 2022	31 March 2019
Past Service Liabilities	**(£m)**	**(£m)**
Employees	352	249
Deferred Pensioners	367	323
Pensioners	577	532
Total Liabilities	**1,296**	**1,104**
Assets	**1,134**	**856**
Surplus/(Deficit)	**(162)**	**(248)**
Funding Level	**87%**	**78%**

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Approach to valuation

Valuation Purpose

The triennial actuarial valuation is an important part of the Fund's risk management framework. Its main purpose is to ensure the Fund continues to have a contribution plan and investment strategy that will achieve the objectives set out in the Funding Strategy Statement.

We have been commissioned by London Borough of Brent (the Administering Authority) to carry out a valuation of the London Borough of Brent Pension Fund (the Fund) as at 31 March 2022. This fulfils Regulation 62 of the Local Government Pension Scheme Regulations 2013. This report marks the culmination of the valuation process and contains its two key outcomes:

1. Employer contribution rates for the period 1 April 2023 to 31 March 2026.
2. The funding level of the Fund at 31 March 2022.

Further information on the valuation process, methodology and strategy is set out in the publicly available Funding Strategy Statement, Investment Strategy Statement and published papers and minutes of the Fund's Pensions Committee. Additional material is also contained in Hymans Robertson's LGPS 2022 valuation toolkit[1].

[1] www.hymans.co.uk/media/uploads/LGPS_2022_Valuation_Toolkit.pdf

Setting employer contribution rates

Employer contributions need to be set at a level which ensures the Fund has a reasonable likelihood of having enough money to pay members' benefits. Identifying the amount of benefits that may be paid is complex as those earned today might only start being paid in 50 years' time. Over that time period, there is significant uncertainty over factors which affect the cost of benefits, eg inflation, investment returns. These uncertainties are allowed for by taking a risk-based approach to setting employer contribution rates. This approach is built around three key funding decisions set by the Fund and asset-liability modelling.

Key funding decisions

For each employer, the Fund determines the most appropriate choice for the following three funding decisions. Further detail is set out in the Funding Strategy Statement.

What is the funding target for each employer?
Will the employer remain in the Fund for the long-term or exit at some point

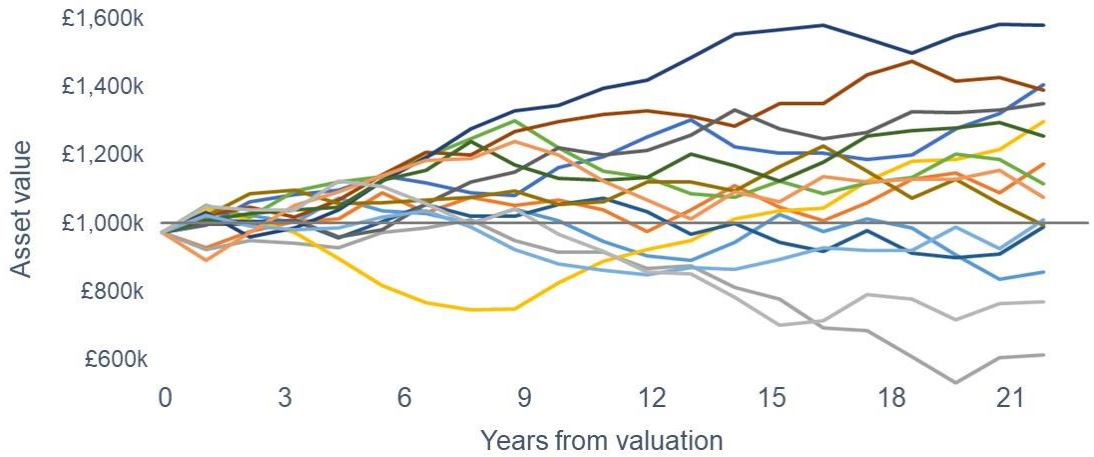
What is the funding time horizon?
How long will the employer participate in the Fund

What is the required likelihood?
How much funding risk can the employer's covenant support

Asset-liability modelling

Asset-liability modelling is used to project each employer's assets and benefit payments into the future using 5,000 different economic scenarios. The economic scenarios are generated using Hymans Robertson's Economic Scenario Service (ESS) (further information in Appendix 2).

Picture 1: sample progression of employer asset values



Measuring the funding level

The past service funding level is measured at the valuation. Whilst it is limited in providing insight into a funding plan, it is a useful high-level summary statistic. To measure the funding level, a market-related approach is taken to calculating both the assets and the liabilities (so they are consistent with each other).

- The market value of the Fund's assets at the valuation date have been used.
- The liabilities have been valued using assumptions based on market indicators at the valuation date (these assumptions are detailed in Appendix 2).

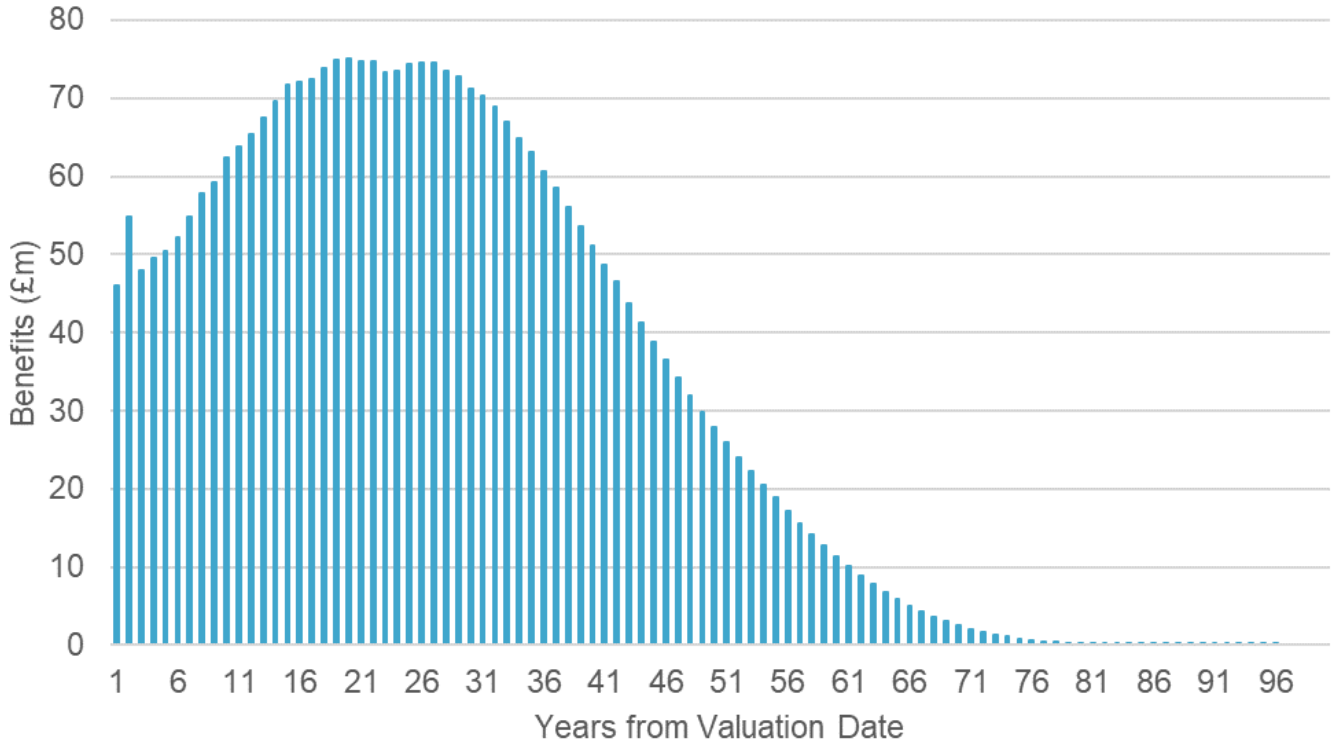
Further detail on the liabilities

The liabilities are the value of all future payments to members based on all benefits earned up to the valuation date, expressed in today's money.

Chart 1 shows the projected payments for all members in the Fund at the valuation date. The projections are based on the membership data provided for the valuation (Appendix 1), the assumptions (Appendix 2) and our understanding of the LGPS benefit structure as at 31 March 2022 (details at www.lgpsregs.org).

To express the future payments in today's money, the projections are discounted with an assumed future investment return on the Fund's assets (the discount rate).

Chart 1: projected benefit payments for all service earned up to 31 March 2022



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Valuation results

Employer contribution rates

The primary objective of the Fund is to set employer contribution rates that will adequately cover the cost of benefits which will accrue in the future and any costs related to benefits already earned. A secondary objective is to ensure the rates are as stable as possible. The risk-based approach detailed earlier is used to meet both these objectives.

The employer contribution rate is made up of two components.

1. A primary rate: the level sufficient to cover all new benefits.
2. A secondary rate: the costs associated with sufficiently funding benefits accrued up to the valuation date.

Each employer has a contribution rate which is appropriate to their circumstances and these can be found in the Rates & Adjustments Certificate. Broadly speaking:

- Primary rates have increased since the last valuation due to rising inflation.
- Secondary rates have decreased due to strong investment performance since the previous valuation.

However all employers will be different and the contribution rate will reflect the membership and experiences of each employer.

Table 3 shows the total of all employer contribution rates to be paid into the Fund over the period 1 April 2023 to 31 March 2026.

Table 3: Whole-fund contribution rate, compared with the previous valuation

	This valuation 31 March 2022		Last valuation 31 March 2019	
Primary Rate	21.8% of pay		19.0% of pay	
Secondary Rate	2023/2024	£18,538,000	2020/2021	£21,499,000
	2024/2025	£16,707,000	2021/2022	£21,987,000
	2025/2026	£14,749,000	2022/2023	£22,487,000

The primary rate includes an allowance of 1.3% of pensionable pay for the Fund's expenses.

Employees pay a contribution to the Fund in addition to these rates. These rates are set by the LGPS Regulations. The average employee contribution rate at 31 March 2022 is 6.7% of pay (6.7% at 31 March 2019).

Funding level

The funding level is the ratio of assets to liabilities. The market value of the assets at the valuation date are known. The value of the liabilities is uncertain given that the level of future investment returns are unknown.

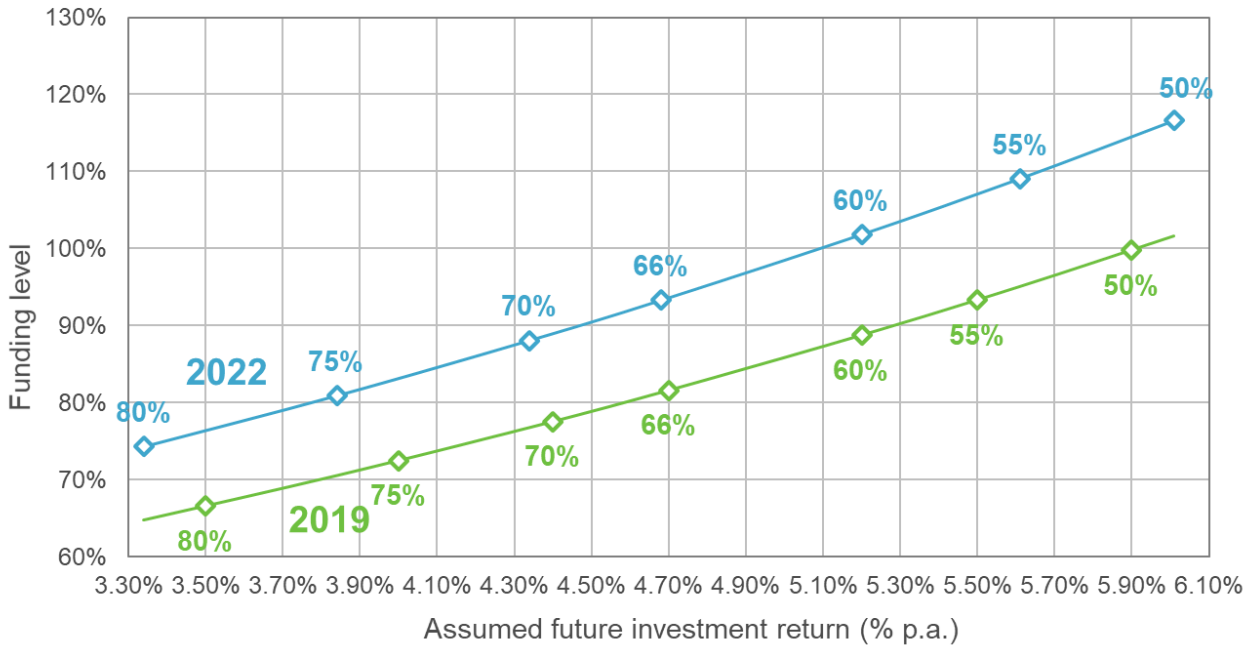
Therefore, the liabilities and funding level have been calculated across a range of different investment returns (the discount rate).

To help better understand funding risk, the likelihood of the Fund's investment strategy (detailed in Appendix 1) achieving certain levels of return has also been calculated.

Chart 2 shows how the funding level varies with future investment return assumptions at 31 March 2022 (blue line). The green line shows the same analysis at 31 March 2019.

- **The funding level is 100% if future investment returns are c.5.1% pa.**
- **The likelihood of the Fund's assets yielding at least this return is around 62%.**
- **The comparator at 2019 was a return of 5.9% pa which had a likelihood of 48%.**
- **The funding position at 2022 is stronger than 2019.**
- **There is a 50% likelihood of an investment return of 6.0% pa. So the best-estimate funding level is 117% at 31 March 2022 (97% at 2019).**

Chart 2: funding level across a range of future investment returns



Figures on each line show the likelihood of the Fund's assets exceeding that level of return over the next 20 years

Single funding level as at 31 March 2022

Whilst the chart on the previous page provides a better understanding of the past service funding position, there is still a requirement to report a single funding level at 31 March 2022.

To report a single funding level and funding surplus/deficit for the 2022 valuation, a discount rate of 4.3% pa has been used. There is a 70% likelihood associated with a future investment return of 4.3% pa.

Table 4 details the liabilities, split by member status and the market value of assets at the valuation date. The results at the 2019 formal valuation are shown for comparison.

The funding level and surplus/deficit figures provide a high-level snapshot of the funding position of the Fund as at 31 March 2022, however there are limitations:

- The liabilities are calculated using a single set of assumptions about the future and so are very sensitive to the choice of assumptions.
- The market value of assets held by the Fund will change on a daily basis.

The future progression of the funding position is uncertain. If the financial and demographic assumptions made at this valuation actually occur, employers pay contributions in line with the R&A certificate and there are no other changes in the financial or demographic environment, we project that the funding level at the next valuation (31 March 2025) will be approximately 91%.

Table 4: single reported funding level

Valuation Date	31 March 2022	31 March 2019
Past Service Liabilities	**(£m)**	**(£m)**
Employees	352	249
Deferred Pensioners	367	323
Pensioners	577	532
Total Liabilities	**1,296**	**1,104**
Assets	**1,134**	**856**
Surplus/(Deficit)	**(162)**	**(248)**
Funding Level	**87%**	**78%**

Important: *the reported funding level does not directly drive the contribution rates for employers. The contribution rates consider how assets and liabilities will evolve over time in different economic scenarios and also reflect each employer's funding profile and covenant.*

Changes since the last valuation

Events between 2019 and 2022

The most significant external event to occur since the last valuation has been the Covid-19 pandemic. The experience analysis below shows that there has sadly been a higher than expected number of deaths over the period. However, the impact on the funding position has been small. This is likely due to the age profile of the excess deaths and the level of pension.

Other significant factors occurring which affect the funding strategy of the Fund have been the better than expected investment returns. This has had a material positive impact on the funding position and employers' secondary contribution rates.

Financial

Table 5: analysis of financial experience between 2019 and 2022 valuations

	Expected	Actual	Difference	Impact on funding position
3 year period	13.8%	26.8%	13.0%	+£114m
Annual	4.4% pa	8.2% pa	3.8% pa	

Membership

Table 6: analysis of membership experience between 2019 and 2022 valuations

	Expected	Actual	Difference	Impact on funding position
Early leavers	1,581	1,916	335	+£0m
Ill-health retirements	29	17	-12	+£1m
Salary increases	3.2% pa	4.1% pa	0.9% pa	-£4m
Benefit increases	2.3% pa	1.8% pa	-0.6% pa	+£17m
Pension ceasing	£2.5m	£3.2m	£0.7m	+£7m

Changes since the last valuation

Future outlook

Expectations about the future, which inform the assumptions used to value the liabilities, have changed since the last valuation. The most significant changes are:

- Future inflation: this is expected to be on average higher than at 2019 due to the current level of high inflation.
- Investment returns: due to change in the Fund's investment strategy and financial markets, future investment returns are now expected to be higher than at the last valuation.

Table 7: summary of change in future outlook

Factor	What does it affect?	What's changed?	Impact on liabilities
Future investment returns	The rate at which future benefit payments are discounted back, ie the discount rate assumption	Future investment returns slightly higher at 2022 than at 2019. The required return is now 4.3% pa vs. 4.4% pa at 2019.	Increase of £22m
Inflation	The rate at which pensions in payment and deferment and CARE pots increase	Significant increase in short-term future inflation expectations.	Increase of £79m
Salary increases	The rate at which future salaries increase. This affects benefits that are still linked to final salary, ie accrued before 1 April 2014	No material change since last valuation given competing factors e.g. tighter budgetary conditions vs. strong job market and pressure from National Living Wage increases.	None
Current life expectancy	How long we expect people to live for based on today's current observed mortality rates.	Slight reduction in life expectancy based on current observed data (not allowing for Covid-related excess deaths)	None
Future improvements in life expectancy	How we expect life expectancies to change (increase) in the future.	Uncertainty about effectiveness of mitigations against life expectancy increases in the LGPS i.e. State Pension Age increases and Cost Cap. Need to better reflect wider pension and insurance industry long-term expectations.	Increase of £7m

Reconciling the overall change in funding position

The tables below provide insight into the funding position change between 31 March 2019 and 31 March 2022. Firstly, the changes we expect to happen (Table 8), which relate mostly to items on the asset side. Then the impact of actual experience (Table 9), which mainly affects the liabilities.

Expected development

Table 8: expected development of funding position between 2019 and 2022 valuations

Change in the surplus/deficit position	Assets	Liabilities	Surplus / Deficit
	£m	£m	£m
Last valuation at 31 March 2019	**856**	**1,104**	**(248)**
Cashflows			
Employer contributions paid in	148	0	148
Employee contributions paid in	28	0	28
Benefits paid out	(138)	(138)	0
Net transfers into / out of the Fund			
Other cashflows (e.g. Fund expenses)	(4)	0	(4)
Expected changes			
Expected investment returns	121	0	121
Interest on benefits already accrued	0	150	(150)
Accrual of new benefits	0	105	(105)
Expected position at 31 March 2022	**1,011**	**1,221**	**(210)**

* We have insufficient data to value the impact on the liabilities as a result of transfers in/out

Impact of actual events

Table 9: impact of actual events on the funding position at 31 March 2022

Change in the surplus/deficit position	Assets	Liabilities	Surplus / Deficit
	£m	£m	£m
Expected position at 31 March 2022	**1,011**	**1,221**	**(210)**
Events between 2019 and 2022			
Salary increases greater than expected	0	4	(4)
Benefit increases greater than expected	0	(17)	17
Early retirement strain (and contributions)	9	12	(3)
Ill health retirement strain	0	(1)	1
Early leavers less than expected	0	0	0
Commutation less than expected	0	1	(1)
McCloud remedy	0	1	(1)
Other membership experience	0	(36)	36
Higher than expected investment returns	114	0	114
Changes in future expectations			
Investment returns	0	22	(22)
Inflation	0	79	(79)
Salary increases	0	0	0
Longevity	0	6	(6)
Other demographic assumptions	0	5	(5)
Actual position at 31 March 2022	**1,134**	**1,296**	**(162)**

Numbers may not sum due to rounding

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Sensitivity & risk analysis

Sensitivity and risk analysis: assumptions

There is risk and uncertainty inherent with funding benefit payments that will be paid out many years in the future. The Fund is aware of these and has in place a risk register which is regularly reviewed. Additionally, as part of the valuation, the Fund reviews sources of risk that may impact its funding position and the contribution rates payable by employers.

This section discusses some of the most significant sources of funding risk (assumptions, regulatory, administration and governance and climate change). Further information of the Fund's approach to funding risk management, including monitoring, mitigation and management, is set out in the Funding Strategy Statement.

Assumptions

The valuation results depend on the actuarial assumptions made about the future. By their nature, these assumptions are uncertain which means its important to understand their sensitivity and risk levels.

Contribution rates

The risk-based approach to setting employer contribution rates mitigates the limitation of relying on one set of assumptions. Therefore, there is no need to carry out additional analysis of the sensitivity of contribution rates to changes in financial assumptions. The contribution rates are sensitive to changes in demographic assumptions. The results in this section in relation to the funding position can be broadly applied to the contribution rates.

Funding level

Financial assumptions

On page 10, we have already set out how the results vary with the assumed future investment return. The table below considers inflation.

Table 10: sensitivity of funding position to inflation assumption

CPI Assumption	Surplus/ (Deficit)	Funding Level
% pa	(£m)	%
2.5%	(122)	90%
2.7%	(162)	87%
2.9%	(204)	85%

Demographic assumptions

The main area of demographic risk is if people live longer than expected. The table below shows the impact of longer term longevity rates improving at a faster rate (1.75% pa vs 1.5% pa used in the results)

Table 11: sensitivity of funding position to longevity assumption

Long term rate of improvement	Surplus/ (Deficit)	Funding Level
% pa	(£m)	%
1.50%	(162)	87%
1.75%	(172)	87%

Sensitivity and risk analysis: other risks & climate change

Regulatory, Administration and Governance risks

Potential risks in this area include change in central government legislation which changes the future cost of the LGPS and failures in administration processes leading to incorrect data and inaccuracies in actuarial calculations. At this valuation, specific risks include:

- **McCloud:** the remedy to resolve the McCloud case is yet to be formalised in regulations. However, an allowance has been included for this expected benefit change at the 2022 valuation as directed by the Department of Levelling Up, Housing and Communities in their letter dated March 2022[1].
- **Goodwin:** the remedy to this issue is still uncertain, it is difficult to identify who it would apply to and its impact is estimated to be very small for a LGPS fund (0.1-0.2% of liabilities). Therefore, no allowance has been made for this case at the 2022 valuation.
- **Cost Cap:** a legal challenge is ongoing in relation to the 2016 cost cap valuation and no information is known about the outcome of the 2020 cost cap valuation. At this valuation, no allowance has been made for any changes to the benefit structure that may occur as a result of a cost cap valuation.
- **GMP indexation:** it is assumed that all increases on GMPs for members reaching State Pension Age after 6 April 2016 will be paid for by LGPS employers. This is the same approach that was taken for the 2019 valuation.

Climate change

Background

Climate change is a major source of uncertainty which could affect future investment returns, inflation and life expectancies. Therefore, the Fund has explicitly explored the resilience of its funding and investment strategy to future potential climate change outcomes.

It is impossible to confidently quantify the effect of climate risk given the significant uncertainty over the impact of different possible climate outcomes. Instead, three different climate change scenarios have been considered as a stress-test (instead of trying to predict how climate change affects the funding level in the future).

All the scenarios assume that there will be a period of disruption linked either to the response to climate risk (transition risks) or the effect of it (physical risks). This disruption will lead to high volatility in financial markets, and the later the disruption, the more pronounced it will be.

Further detail on the scenarios is shown on the next page and in our guide 10 of Hymans Robertson's LGPS 2022 valuation toolkit[2]

1 www.lgpslibrary.org/assets/bulletins/2022/222AppA.pdf

2 www.hymans.co.uk/media/uploads/LGPS_2022_Valuation_Toolkit.pdf

Sensitivity and risk analysis: climate change & post valuation events

Climate change

Outcome of analysis

The Fund has set its funding and investment strategy using asset-liability modelling and considering two main risk metrics:

- Likelihood of success – the chance of being fully funded in 20 years' time
- Downside risk – the average worst 5% of funding levels in 20 years' time

When exploring the potential impact of climate change, the Fund has compared how these risk metrics change under each climate change scenario (against the '*Core'* model used when setting the funding and investment strategy). The stress test results for the Fund are shown in Table 12 below.

Table 12: sensitivity of funding position to longevity assumption

Scenario	Likelihood of success	Downside risk
Core	79%	50%
Green Revolution	75%	46%
Delayed Transition	75%	49%
Head in the Sand	76%	50%

The results are worse in the climate scenarios. This is to be expected given that they are purposefully stress-tests and all the scenarios are bad outcomes. Whilst the risk metrics are weaker, they are not materially so and not enough to suggest that the funding and investment strategy are unduly exposed to climate change risk. The Fund will continue to monitor this risk as more information emerges and climate change modelling techniques evolve.

Post valuation events

Since 31 March 2022, there has been significant volatility in the financial markets, short-term inflation expectations and rises in interest rates by central banks. These events affect the value of the Fund's assets and liabilities. For example, the Fund's investment return since 31 March 2022 is estimated to be slightly negative.

As an open scheme, with a strong covenant, the Fund takes a long-term view when considering the funding impact of such events. For employers who have a very short time horizon, recent volatility may be more immediately impactful, and the Fund has engaged with these employers as appropriate.

No explicit allowance has been made for this volatility in the valuation results or contribution rates detailed in the Rates & Adjustments Certificate. The Fund will continue to monitor changes in the financial and demographic environment as part of its ongoing risk management approach.

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Final comments

Final comments

The Fund's valuation operates within a broader framework, and this document should be considered alongside the following:

- The Funding Strategy Statement, which in particular highlights how different types of employer in different circumstances have their contributions calculated
- The Investment Strategy Statement, which sets out the investment strategy for the Fund
- The general governance of the Fund, such as meetings of the Pensions Committee and Local Pensions Board, decisions delegated to officers, the Fund's business plan, etc
- The Fund's risk register

Intervaluation employer events

New employers joining the Fund

Any new employers or admission bodies joining the Fund should be referred to the Fund Actuary to assess the required level of contribution. Depending on the number of transferring members the ceding employer's rate may also need to be reviewed.

Cessations and bulk transfers

Any employer who ceases to participate in the Fund should be referred to the Fund Actuary in accordance with Regulation 64 of the LGPS regulations.

Any bulk movement of scheme members:

- involving 10 or more scheme members being transferred from or to another LGPS fund
- involving 2 or more scheme members being transferred from or to a non-LGPS pension arrangement

should be referred to the Fund Actuary to consider the impact on the Fund.

Valuation frequency

Under the LGPS regulations, the next formal valuation of the Fund is due to be carried out as at 31 March 2025 where contribution rates payable from 1 April 2026 will be set.

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Appendices

APPENDIX 1

Data

Membership data

A summary of the membership data provided by the Fund for the 2022 valuation is set out in Table 13. The corresponding membership data from the previous valuation is also shown for reference.

The results of the valuation are dependent on the quality of the data used. We have carried out a series of validation checks on the data supplied to us by the Administering Authority to ensure that it is fit for purpose.

Asset data

To check the membership data and derive employer asset values, we have used asset and accounting data and employer level cashflow data provided by the Fund.

Table 13: Whole fund membership data as at 31 March 2022 and 31 March 2019

Whole Fund Membership Data	This Valuation 31 March 2022	Last Valuation 31 March 2019
Employee members		
Number	5,720	5,182
Total actual pay (£000)	148,740	117,858
Total accrued pension (£000)	22,170	17,367
Average age (liability weighted)	53.0	52.4
Future working lifetime (years)	5.6	8.6
Deferred pensioners (including undecideds)		
Number	10,377	11,019
Total accrued pension	20,303	19,624
Average age (liability weighted)	54.0	53.4
Pensioners and dependants		
Number	6,695	6,280
Total pensions in payment	36,780	36,363
Average age (liability weighted)	69.0	69.1

APPENDIX 1

Data

Investment strategy

A summary of the investment strategy allocation used for the calculation of employer contribution rates and to derive the future assumed investment return is set out in Table 14.

This information is as set out in the Fund's Investment Strategy Statement.

Table 14: Investment strategy used for the 2022 valuation

Asset class	Allocation
Global equities	40%
UK equities	5%
Emerging market equities	5%
Diversified Growth Funds	5%
Infrastructure equity	15%
Property	10%
Multi asset credit	5%
Private debt	5%
Fixed interest gilts	10%
Total	**100.0%**

APPENDIX 2

Assumptions

To set and agree assumptions for the valuation, the Fund carried out in-depth analysis and review in January 2022 with the final set agreed by the Pensions Committee on 21 February 2022.

Financial assumptions

Setting employer contribution rates

An asset-liability model is used to set employer contributions at the 2022 valuation. This model relies on Hymans Robertson's proprietary economic model, the Economic Scenario Service (ESS). The ESS reflects the uncertainty associated with future levels of inflation and asset returns and the interactions and correlations between different asset classes and wider economic variables. In the short term (first few years), the models are fitted with current financial market expectations. Over the longer term, models are built around views of fundamental economic parameters, for example equity risk premium, credit spreads and long term inflation. The table below shows the calibration of the ESS at 31 March 2022. Further information on the assumptions used for contribution rate setting is included in the Funding Strategy Statement.

Table 15: ESS individual asset class return distributions at 31 March 2022

		Annualised total returns										Inflation (CPI)	17 year real yield (CPI)	17 year yield
		Fixed Interest Gilts (long)	UK Equity	Property	Emerging Markets Equity	Listed Infrastructure Equity	Diversified Growth Fund (high equity beta)	Diversified Growth Fund (medium equity beta)	Developed World Equity	Multi Asset Credit (sub inv grade)	Global High Yield Debt			
10 years	16th %'ile	-1.5%	-0.4%	-0.6%	-2.5%	-1.1%	1.1%	1.4%	-0.6%	1.7%	0.6%	1.6%	-1.7%	1.1%
	50th %'ile	0.7%	5.7%	4.4%	5.8%	4.9%	5.4%	4.3%	5.6%	3.5%	3.4%	3.3%	-0.5%	2.5%
	84th %'ile	2.8%	11.6%	9.5%	14.4%	10.9%	9.5%	7.1%	11.6%	5.2%	5.8%	4.9%	0.7%	4.3%
20 years	16th %'ile	-0.2%	1.7%	1.4%	0.1%	1.2%	2.8%	2.5%	1.6%	2.8%	2.1%	1.2%	-0.7%	1.3%
	50th %'ile	0.9%	6.2%	5.0%	6.3%	5.6%	6.0%	4.9%	6.1%	4.4%	4.2%	2.7%	1.1%	3.2%
	84th %'ile	2.0%	10.6%	8.9%	12.8%	10.1%	9.4%	7.4%	10.8%	6.0%	6.4%	4.3%	2.7%	5.7%
40 years	16th %'ile	1.2%	3.2%	2.6%	2.1%	2.6%	4.0%	3.3%	3.2%	3.6%	3.1%	0.9%	-0.6%	1.1%
	50th %'ile	1.9%	6.7%	5.5%	6.8%	6.1%	6.6%	5.5%	6.6%	5.3%	5.1%	2.2%	1.3%	3.3%
	84th %'ile	2.8%	10.2%	8.8%	11.7%	9.8%	9.4%	7.9%	10.2%	7.1%	7.2%	3.7%	3.2%	6.1%
	Volatility (Disp) (5 yr)	8%	18%	15%	26%	18%	13%	8%	18%	6%	8%	3%		

APPENDIX 2

Assumptions

Financial assumptions

Calculating the funding level

The table below summarises the assumptions used to calculate the funding level at 31 March 2022, along with a comparison at the last valuation.

Table 16: Summary of assumptions used for measuring the funding level, compared to last valuation on 31 March 2019

Assumption	31 March 2022	Required for	31 March 2019
Discount rate	4.3% pa	To place a present value on all the benefits promised to scheme members at the valuation date. The Fund's assets are estimated to have a 70% likelihood of returning above the discount rate.	4.4% pa
Benefit increases/CARE revaluation	2.7% pa	To determine the size of future benefit payments.	2.3% pa
Salary increases	3.0% pa	To determine the size of future final-salary linked benefit payments.	2.6% pa

APPENDIX 2

Assumptions

Demographic assumptions

The same demographic assumptions are used in setting contribution rates and assessing the current funding level.

Longevity

Table 17: Summary of longevity assumptions

	This valuation 31 March 2022	Last valuation 31 March 2019
Baseline assumption	VitaCurves based on member-level lifestyle factors	VitaCurves based on member-level lifestyle factors
Future improvements	**CMI 2021 model** Initial addition = **0.25% (both Female and Male)** Smoothing factor = **7.0** **1.5% pa** long-term rate of improvement	**CMI 2018 model** Initial addition = **0.25% (Female), 0.5% (Male)** Smoothing factor = **7.0** **1.25% pa** long-term rate of improvement

Further information on these assumptions can be provided upon request. Sample rates are included on the next page.

Other demographic assumptions

Table 18: Summary of other demographic assumptions

Death in service	See sample rates in Appendix 2
Retirements in ill health	See sample rates in Appendix 2
Withdrawals	See sample rates in Appendix 2
Promotional salary increases	See sample rates in Appendix 2
Commutation	50% of future retirements elect to exchange pension for additional tax free cash up to HMRC limits
50:50 option	1.0% of members (uniformly distributed across the age, service and salary range) will choose the 50:50 option
Retirement age	The earliest age at which a member can retire with their benefits unreduced
Family details	A varying proportion of members are assumed to have a dependant at retirement or on earlier death. For example, at age 60 this is assumed to be 90% for males and 85% for females. The dependant of a male member is assumed to be 3 years younger than him and the dependent of a female member is assumed to be 3 years older than her.

APPENDIX 2

Assumptions

Sample rates for demographic assumptions

Males

Table 19: Sample rates of male demographic assumptions

Age	Salary Scale	Death Before Retirement	Withdrawals		Ill Health Tier 1		Ill Health Tier 2	
		FT & PT	FT	PT	FT	PT	FT	PT
20	105	0.17	404.31	813.01	0.00	0.00	0.00	0.00
25	117	0.17	267.06	537.03	0.00	0.00	0.00	0.00
30	131	0.20	189.49	380.97	0.00	0.00	0.00	0.00
35	144	0.24	148.05	297.63	0.10	0.07	0.02	0.01
40	150	0.41	119.2	239.55	0.16	0.12	0.03	0.02
45	157	0.68	111.96	224.96	0.35	0.27	0.07	0.05
50	162	1.09	92.29	185.23	0.90	0.68	0.23	0.17
55	162	1.70	72.68	145.94	3.54	2.65	0.51	0.38
60	162	3.06	64.78	130.02	6.23	4.67	0.44	0.33
65	162	5.10	0.00	0.00	11.83	8.87	0.00	0.00

Females

Table 20: Sample rates of female demographic assumptions

Age	Salary Scale	Death Before Retirement	Withdrawals		Ill Health Tier 1		Ill Health Tier 2	
		FT & PT	FT	PT	FT	PT	FT	PT
20	105	0.10	352.42	467.37	0.00	0.00	0.00	0.00
25	117	0.10	237.14	314.44	0.1	0.07	0.02	0.01
30	131	0.14	198.78	263.54	0.13	0.1	0.03	0.02
35	144	0.24	171.57	227.38	0.26	0.19	0.05	0.04
40	150	0.38	142.79	189.18	0.39	0.29	0.08	0.06
45	157	0.62	133.25	176.51	0.52	0.39	0.1	0.08
50	162	0.90	112.34	148.65	0.97	0.73	0.24	0.18
55	162	1.19	83.83	111.03	3.59	2.69	0.52	0.39
60	162	1.52	67.55	89.37	5.71	4.28	0.54	0.4
65	162	1.95	0.00	0.00	10.26	7.69	0.00	0.00

Figures are incidence rates per 1,000 members except salary scale. FT and PT denoted full-time and part-time members respectively.

APPENDIX 3

Reliances and limitations

We have been commissioned by London Borough of Brent ("the Administering Authority") to carry out a full actuarial valuation of the London Borough of Brent Pension Fund ("the Fund") as at 31 March 2022 as required under Regulation 62 of the Local Government Pension Scheme Regulations 2013 ("the Regulations").

This report is addressed to the Administering Authority. It has been prepared by us as actuaries to the Fund and is solely for the purpose of summarising the main outcomes of the 2022 actuarial valuation. It has not been prepared for any other third party or for any other purpose. We make no representation or warranties to any third party as to the accuracy or completeness of this report, no reliance should be placed on this report by any third party and we accept no responsibility or liability to any third party in respect of it.

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This summary report is the culmination of other communications in relation to the valuation, in particular:

- Our 2022 valuation toolkit which sets out the methodology used when reviewing funding plans
- Our paper to the Fund's Pension Committee dated September 2022 which discusses the funding strategy for the London Borough of Brent
- Our paper to the Fund's Pension Committee dated January 2022 which discusses the valuation assumptions
- Our initial results report dated September 2022 which outlines the whole fund results and inter-valuation experience
- Our data report which summarises the data used for the valuation, the approach to ensuring it is fit for purpose and any adjustments made to it during the course of the valuation
- The Funding Strategy Statement which details the approach taken to adequately fund the current and future benefits due to members

The totality of our advice complies with the Regulations as they relate to actuarial valuations.

The following Technical Actuarial Standards apply to this advice, and have been complied with where material and to a proportionate degree. They are:

- TAS100 – Principles for technical actuarial work
- TAS300 – Pensions

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APPENDIX 4

Glossary

Term	Explanation
50:50 option	An option for LGPS members to pay half contributions and earn half the retirement benefit (pre-retirement protection benefits are unreduced).
Asset-liability modelling	An approach to modelling and understanding risk for a pension fund. The assets and liabilities are projected forward into the future under many different future scenarios of inflation, investment returns and interest rates. The future scenarios are then analysed to understand the risk associated with a particular combination of contribution rates and investment strategy. Different combinations of contribution rates and/or investment strategies may be tested.
Baseline longevity	The rates of death (by age and sex) in a given group of people based on current observed data.
Club Vita	A firm of longevity experts we partner with for longevity analysis. They combine data from thousands of pension schemes and use it to create detailed baseline longevity assumptions at member-level, as well as insight on general longevity trends and future improvements.
Commutation	The option for members to exchange part of their annual pension for a one-off lump sum at retirement. In the LGPS, every £1 of pension exchanged gives the member £12 of lump sum. The amounts that members commute is heavily influenced by tax rules which set an upper limit on how much lump sum can be taken tax-free.
CPI inflation	The annual rate of change of the Consumer Prices Index (CPI). The CPI is the UK government's preferred measure of inflation and is the measure used to increase LGPS (and all other public sector pension scheme) benefits each year.
Deferred pensioners	A former employee who has left employment (or opted out of the pension fund) but is not yet in receipt of their benefits from the fund.
Demographic assumptions	Assumptions concerned with member and employer choices rather than macroeconomic or financial factors. For example, retirement age or promotional salary scales. Demographic assumptions typically determine the timing of benefit payments.

APPENDIX 4

Glossary

Term	Explanation
Discount rate	A number used to place a single value on a stream of future payments, allowing for expected future investment returns.
Employee members	Members who are currently employed by employers who participate in the fund and paying contributions into the fund.
ESS	Economic Scenario Service - Hymans Robertson's proprietary economic scenario generator used to create thousands of simulations of future inflation, asset class returns and interest rates.
Funding position	The extent to which the assets held by the fund at 31 March 2022 cover the accrued benefits ie the liabilities. The two measures of the funding position are: • the funding level - the ratio of assets to liabilities; and • the funding surplus/deficit - the difference between the asset and liabilities values.
Inflation	Prices tend to increase over time, which is called inflation. Inflation is measured in different ways, using a different 'basket' of goods and mathematical formulas.
Liabilities	An employer's liability value is the single value at a given point in time of all the benefit payments expected to be made in future to all members. Benefit payments are projected using demographic and financial assumptions and the liability is calculated using a discount rate.
Longevity improvements	An assumption about how rates of death will change in future. Typically we assume that death rates will fall and life expectancies will improve over time, continuing the long-running trend.
Pensioners	A former employee who is in receipt of their benefits from the fund. This category includes eligible dependants of the former employee.

APPENDIX 4

Glossary

Term	Explanation
Primary rate	The estimated cost of future benefits, expressed in percentage of pay terms. The primary rate will include an allowance to cover the fund's expenses.
Prudence	To be prudent means to err on the side of caution in the overall set of assumptions. We build prudence into the choice of discount rate by choosing an assumption with a prudence Level of more than 50%. All other assumptions aim to be best estimate.
Prudence Level	A percentage indicating the likelihood that a discount rate assumption will be achieved in practice, based on the ESS model. The higher the prudence level, the more prudent the discount rate is.
Secondary rate	An adjustment to the primary rate, generally to reflect costs associated with benefits that have already been earned up to the valuation date. This may be expressed as a percentage of pay and/or monetary amount.
Withdrawal	Refers to members leaving the scheme before retirement. These members retain an entitlement to an LGPS pension when they retire, but are no longer earning new benefits.