

London Borough of Camden Pension Fund

Investment Strategy Review
June 2023



Executive summary

Addressee

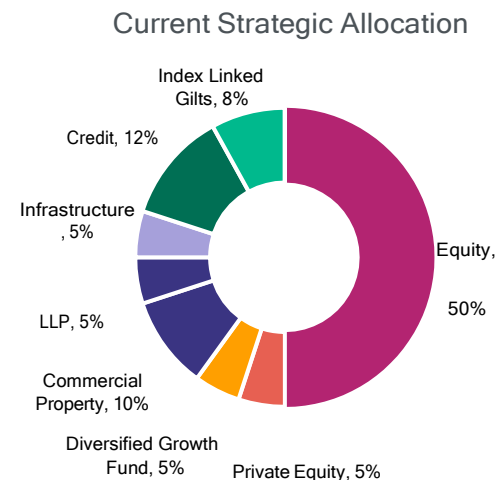
- This report is addressed to the London Borough of Camden Council (“the Council”) as Administering Authority of the London Borough of Camden Council Pension Fund (“the Fund”). This report reviews the Fund’s investment strategy and outlines Isio’s views on changes that will enhance the overall strategy through an evolution of the asset allocation.

Summary of paper

- Within this report we provide a detailed analysis of the Fund’s current investment strategy, asset allocation and investment structure.
- Over recent years the Fund’s investment strategy has delivered strong asset returns. We estimate that the funding level was c.139% as at 31 December 2022 (an increase from 93% as at 31 March 2020). The primary reason for the very strong improvement was a significant decrease in the value of the Fund’s liabilities, due largely to increases in interest rates over H2 2022.

Key recommendations

- Our analysis highlights that the Fund is exposed to significant equity risk. This is in part due to the overweight allocation vs the strategic benchmark. We believe that the Council should seek to reduce the equity exposure further and review the composition of the equity allocation to ensure it remains robust across differing market environments.
- The other key risk to which the Fund is exposed is that of higher inflation (which would drive the liability value higher given the inflation-linked nature of the benefit payments). To mitigate this risk, we recommend that the Council increases the Fund’s allocation to directly inflation-linked assets (e.g. index linked gilts, residential property, and infrastructure equity). This is in-line with the approach agreed in the 2020 strategy review, whereby the allocation to ILGs would be increased when the 20-year real yield reached -1.5% (the yield has now surpassed this point and we believe the position should be fully implemented).
- Given the strong funding position achieved, the Fund has increasing scope to assess potential investments through an “ESG lens”. LCIV have recently launched a renewable infrastructure fund, as



Key stats	
Expected Return (p.a.)	7.9%
Return Requirement (p.a.)	6.1%
Assets	c. £1,882m
Estimated Liabilities (Ongoing basis) ¹	c. £1,353m
Estimated Funding Surplus	c. £529m

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Source: ¹Hymans Robertson

Executive summary

well as an affordable housing fund. These could help the Fund to achieve the investment aims outlined above, whilst also better aligning the investment portfolio to the targeted UN SDGs.

- We also believe an increase to multi-asset credit should be considered, as the current yield environment enables this asset class to provide the Fund with attractive returns, while reducing the overall investment risk taken. We believe flexible mandates such as this are well placed to add value in what we expect to be a volatile environment going forward.
- Our proposed alternative strategies therefore utilise increased allocations to the assets mentioned, whilst continuing to achieve the required return of at least 6.1%.
- Although we have outlined a number of alternative strategies for consideration, if the Committee is minded to retain a similar level of return, whilst also focussing on responsible investing and better-aligning the portfolio with the Fund's SDG, then we recommend the 'High Impact' strategy as the most appropriate. Further details can be found on pg 20 of this report.

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Introduction

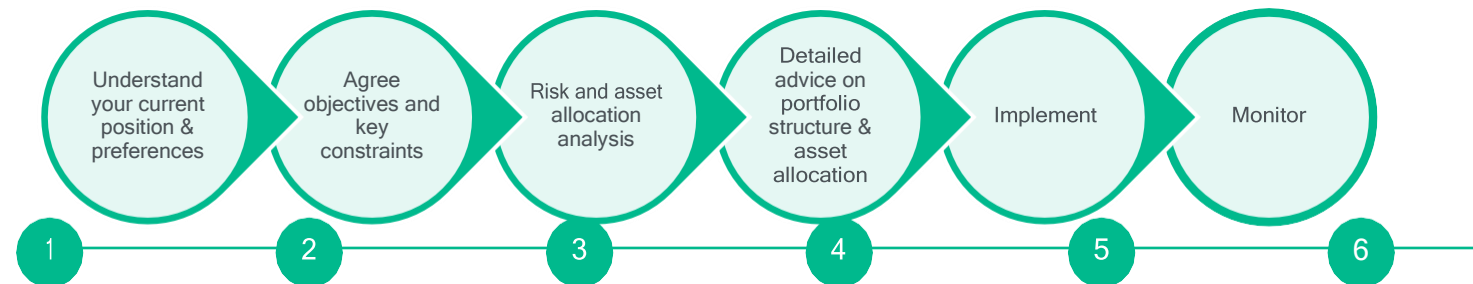
Background

Background

- This report is addressed to the London Borough of Camden Council (“the Council”) as the Administering Authority of the London Borough of Camden Pension Fund (“the Fund”) and specifically the Fund’s Pension Committee (“the Committee”).
- The Council has engaged Isio to undertake a detailed review of the Fund’s overall investment strategy, in order to quantify the inherent risks and to consider options for the evolution of the asset allocation. As well as high level asset allocation, Isio has been asked to focus on certain key specific areas of the portfolio, and to provide recommendations on how these should evolve going forward.
- The most recent Actuarial Valuation, dated 31 March 2022, is now finalised. It is expected that the funding level has significantly improved from 3 years prior, to 113% (from 103%). This position, rolled forward to 31 December 2022 (which demonstrates even further growth in the funding level), forms the basis of this investment strategy review.
- The diagram below highlights the key stages in our approach for assessing overall investment strategy, with this paper focussing on stages 1-4.

Scope of this paper

- This paper provides a detailed review of the Fund’s current investment strategy, asset allocation and investment structure, including:
 - Detailed asset-liability modelling and risk and return analysis on the Fund’s current investment strategy against the stated objectives and based on the Fund’s specific liabilities and the current funding position.
 - Assessment of whether the strategy remains aligned with the key objectives and whether an evolution to an alternative asset allocation may be better.
 - Analysis of a range of potential alternative portfolios.
 - Consideration of any proposed investment strategy changes in the context of the LCIV pool and the current/ expected future products available.
 - The high level ESG impact and considerations of any proposed changes.
 - A summary of the implementation considerations around each of potential alternative portfolios illustrated
 - A high level overview of the net zero targets for each of the funds in the investment strategy



Objectives

Objectives

- We understand that the Fund’s funding objectives, as outlined in the Funding Strategy Statement, are:
 - to ensure the long-term solvency of the Fund, using a prudent long-term view. The primary reason for this is to ensure that sufficient funds are available to meet all members’/dependants’ benefits as they fall due for payment;
 - to ensure that employer contribution rates are reasonably stable where appropriate;
 - to ensure affordability of long-term contributions which employers need to pay to the Fund, minimising these where possible, by recognising the link between assets and liabilities and adopting an investment strategy which balances risk and return.
- With this in mind, this translates to an objective of delivering a return maintains full funding with as little volatility as possible (to maintain stable contributions). The assumptions underlying the Actuary’s funding basis are important factors in determining the return requirement.
- As the Fund grows in absolute terms, it will also be important to ensure that stability, relative to Employers’ budgets, is maintained. Although not considered in this review, this is something that could be assessed further if there is appetite to do so.
- The Fund remains open to new members and future accrual. It is therefore growing both due to interest accruing on past service liabilities, and due to new liability accrual. The liabilities are also maturing with time (the proportion of pensioner members is growing) and this will change the cash flow profile of the Fund . Ultimately more cash will be paid out than is received in cash contributions, making income and volatility, in addition to generation of investment return, more important considerations going forward.

Key Considerations

- The Council has established clear beliefs regarding Environmental, Social and Governance (“ESG”) factors, believing that a strong Responsible Investment approach will add value over the long-term and be mutually beneficial to wider society. These are documented in the Fund’s Investor Belief statement as well as other ESG related documents. We believe the changes proposed in this report can make a significant difference in terms of ESG, and provide a platform for further positive change.
- The Council also has established a set of financial beliefs which it uses to guide its approach to markets, asset allocation and investing in general. These are:
 - The Fund is a long-term investor and invests predominantly with this time frame in mind - not to make short-term gains.
 - Asset mix is important and drives performance over the long-term.
 - The Fund will take appropriate professional advice to inform strategy and decision making.
 - The Fund believes that there is a place for active and passive management and places equal weight on both.
 - Investment costs are important and should be minimised where possible after taking net performance into account

What return is required?

Overview

- At the March 2022 Actuarial Valuation, the discount rate used to value the liabilities was 4.4% p.a. The Actuary therefore requires the assets to deliver at least 4.4% p.a. to achieve full-funding based on the agreed contributions (all else being equal).
- The discount rate can be interpreted as the Actuary's prudent assessment of the return the assets are expected to deliver over the long-term and is derived based upon the absolute level of returns that the asset portfolio is expected to achieve.
- Given the market environment since the date of the March 2022 Actuarial valuation (which have seen a sharp upward step in UK interest rates - discussed further on the next pages) we expect that the required return will have increased to 6.1% p.a. as at 31 December 2022. This assumes the assumptions follow a broadly consistent approach to the last actuarial valuation.
- We expect the Fund's funding position will have improved. A high level estimate, as provided by the Actuary, of the funding position at 31 December 2022 on the updated assumptions is c.139% (an increase from 113% as at March 2022).
- Aligned with the approach taken by the Fund Actuary, we believe it is important to focus on implementing a robust long-term strategic allocation and not to be blown off course by focusing on short term improvements or deteriorations in funding position.

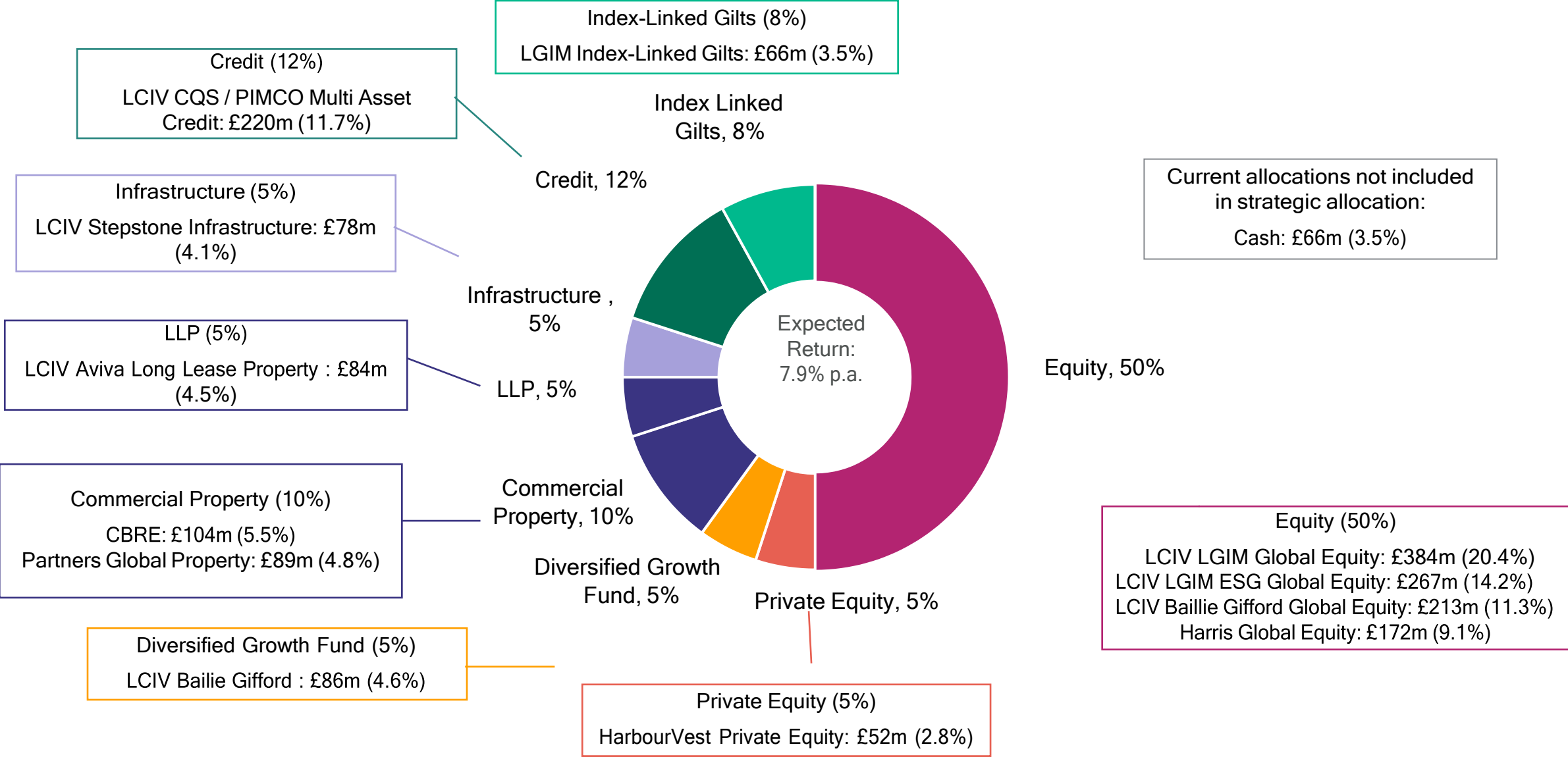
Key considerations

- We expect the current strategy to return c.7.9 % p.a. over the long term. However, it is important to note that this return expectation is “best estimate” (i.e. a 50% probability of achieving this). Targeting this level of return comes with a material level of investment risk.
- We expect that this expected level of return remains more than sufficient to support the Actuary's funding approach. There may be some scope to reduce overall return targeted if desired however the Actuary would need to comment on the degree of to which this would be acceptable. There may also be some scope to reduce the level of investment risk in the strategy and continue to focus on driving long-term returns and funding improvements in a risk managed way.
- As such, we believe the Fund should evolve the investment strategy to target a slightly lower return, for a reduced level of investment risk, whilst looking to increase flexibility within the investment strategy, with the aim of capturing attractive investment opportunities as these arise.
- The Fund has clear beliefs regarding Environmental, Social and Governance (“ESG”) factors, believing that a strong Responsible Investment approach will add value over the long-term and be mutually beneficial to wider society. Any proposed investment strategy changes seek to maintain and strengthen alignment to these beliefs.
- The Council should consult the Actuary on any proposed changes to the Fund's investment strategy, to understand the impact, if any, to the underlying funding basis.

Current Investment Strategy

Target investment strategy overview

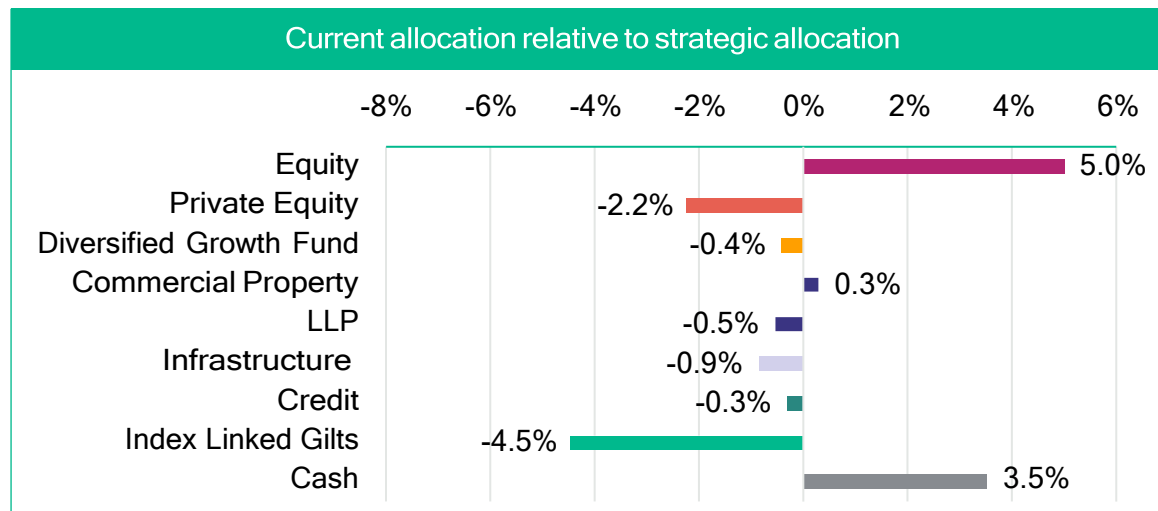
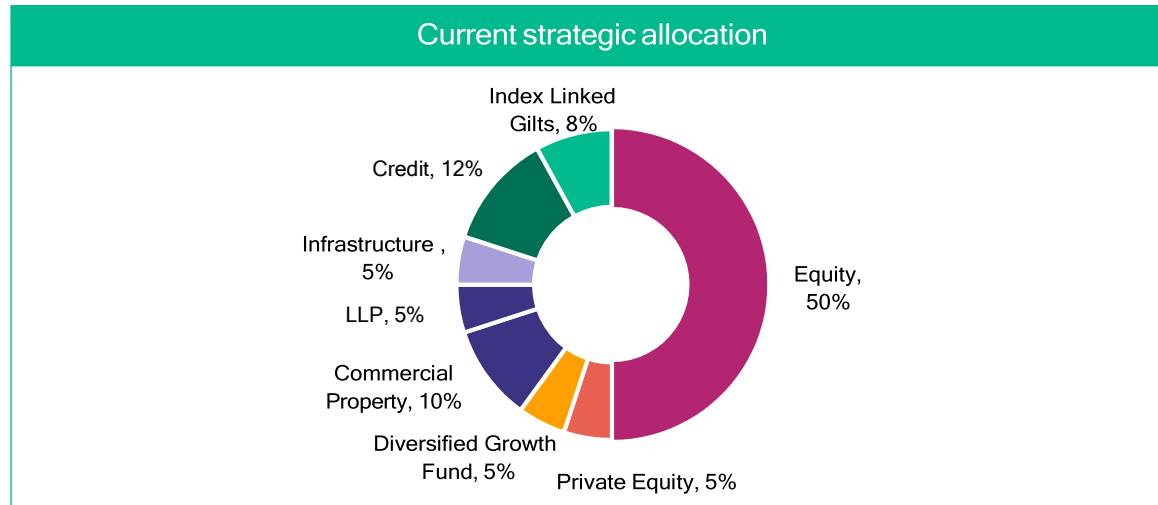
Key:
Strategic Weights in Chart
(Actual Allocations) in brackets



Notes: There is also a very small current allocation to LCIV shares included alongside the cash allocation

Source: JP Morgan and Investment managers at 31 December 2022.

Current allocation vs. target

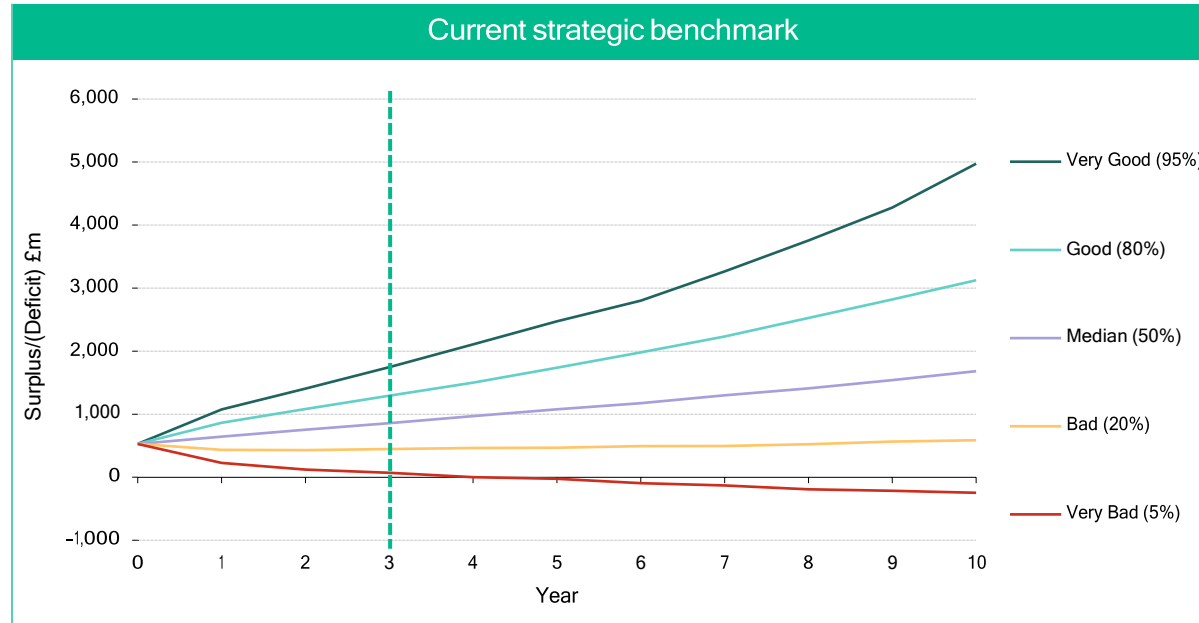


Comments and observations

- As at 31 December 2022, the Fund's asset portfolio comprises of 8 separate asset classes and 10 individual underlying investment managers (including those underlying LCIV), with exposures across both public and private markets.
- The equity allocation is 5% overweight, split between c. 20% in active equity, and c. 35% in passive equity. The Fund also has a 5% strategic allocation to private equity, which is underweight as the mandate is now in the capital distribution phase and has not been topped up in recent years..
- The Fund has a 3.5% allocation to index-linked gilts which provides direct inflation exposure. This mandate is underweight vs its strategic allocation, and the Council should consider rebalancing to target, and whether now is an attractive time to do so in order to achieve further direct inflation protection in the asset portfolio.
- Aside from the deviations noted above, and the 3.5% allocation to cash, the other allocations are broadly at target.
- Another consideration is the outlook for UK commercial property, the Balanced area of the market in particular, is challenging given the weak economic forecasts in the UK. We propose that the Fund considered options to reduce this exposure but this has been challenging to achieve in practice given the liquidity, time horizons and transaction costs involved.

Source: Investment Mangers

Funding trajectory



Funding Position - 31 December 2022

Discount rate (est)	6.1% p.a.
Current surplus (deficit)	£529m
Current funding level	c.139%

Forecast Funding Position - 3 Years' Time

Expected deficit / surplus	£868m
Expected funding level	c. 155%
Estimated Funding shortfall 1 in 20 downside (5%)	(£785m)
Estimated Funding Surplus 1 in 20 downside (5%)	£61m

Source: Hymans Robertson, Isio calculations

Comments

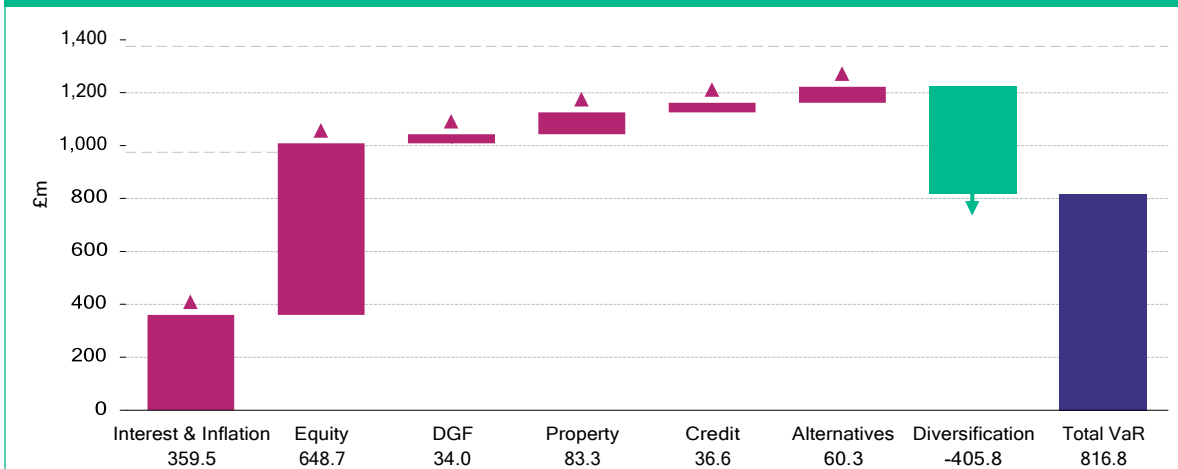
- We estimate that the funding position at 31 December had improved since the March 2022 valuation date, from 113% to c. 139%. This is a very strong position for the Fund to achieve.
- The central expectation is for the funding position to continue to improve and increase gradually over time due to investment returns and employer and employee contributions.
- Based on the estimated 31 December 2022 position, the current target investment strategy, and median predicted outcome going forward, we expect the Fund to be in a surplus of c. £868m in 3 years' time (up from c.£529m at the end of December).
- Ultimately any surplus could be used to bring down the future service cost of the Fund to the employers through a negotiation with the Fund Actuary.
- The chart highlights the degree of variation (both upside and downside) that the Fund is exposed to by the current investment strategy. This volatility could have a material impact on the funding position and the future cash funding requirements.
- Given the current investment risk in the strategy, there is a 1 in 20 chance that fund position could be c.£785m or more behind expectations in 3 years' time. If this occurs, the funding surplus would be mostly eroded and there would be increased pressure for higher contributions to be paid. There is further information provided regarding this metric in Appendix 1.

Risk analysis

Value at Risk (3 year, 95%) breakdown - Strategic allocation



Value at Risk (3 year, 95%) breakdown - Current actual allocation



Source: Hymans Robertson data, Isio calculations as at 31 December 2022.

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Commentary

- The charts opposite illustrates the overall level, and composition of investment risk in both the strategic and current asset allocations, as measured by the 1 in 20, 3 year Value at Risk (“VaR”). The VaR represents the difference in the funding position in three years’ time between the expected outcome and a 1 in 20 downside scenario.
- The total risk (3 year, 1 in 20 VaR) for the strategic allocation is c.£785m, i.e. that there is a 1 in 20 chance the Fund could be c.£785m (or more) behind its expected trajectory in 3 years time.
- The Fund’s key risks are its equity exposure and inflation risk inherent within its liabilities.
 - The Fund’s 50% strategic allocation to equities means that a fall in equity valuations would result in a material decrease in the Fund’s assets (similar to that experienced over Q1 2020, though this was quickly reversed).
 - The significant risk from inflation is due to the majority of the pension benefits in the Fund being directly linked to inflation. This is an area which the Fund has been actively seeking to address in recent years, by increasing exposure to assets that provide inflation protection in an effort to provide a better match for the pension payments linked to inflation and decrease the risk position of the Fund.
- Within the target investment strategy, alternatives (infrastructure and private equity) is the next most significant risk for the Fund, followed by the property allocation.

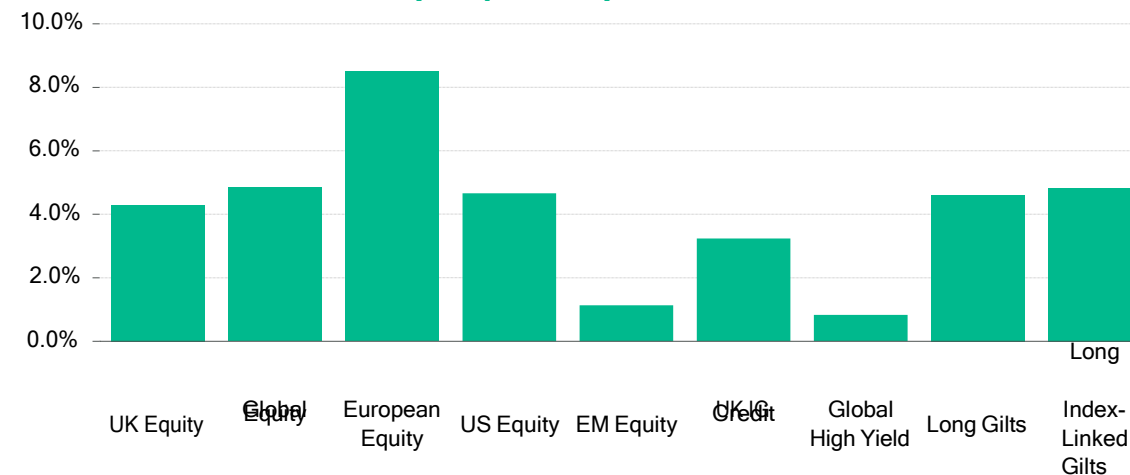
Current market conditions

Recent market conditions

- Market conditions over 2022 and 2023 year-to-date have been extremely volatile, largely due to Russia's invasion of Ukraine, increasing global interest rates in response to surging inflation, and slowing global economic growth.
- Over the last year, gilt yields have risen as global central banks have raised interest rates. Additionally, the announcement of the 'mini budget' in the UK triggered a UK Gilt crisis over October 2022, where yields spiked sharply. Meanwhile increasing pessimism around the global economy, and the likelihood of a 'hard landing' to monetary tightening, led to sell-offs in risk assets. These factors combined to drive negative returns over 2022 for credit, equity and gilt markets.
- Since the beginning of the year, investors have regained confidence in markets, hoping that slowing inflation will incentive central banks to moderate, and even halt, interest rate rises. This sentiment is reflected in year-to-date returns of all major asset classes and implies that the Fund's asset will have grown over 2023.

Mandate	2022	YTD
Sterling non-gilts (IG)	-8.7%	+3.2%
Sterling High Yield Credit	+2.2%	+0.8%
20-year Nominal Gilt Yield	2.86%	-0.16%
20-year Real Gilt Yield	3.05%	-0.21%
Global Equity (£ hedged)	-0.5%	+4.9%
Global Equity (unhedged)	-4.3%	+7.5%

Year to Date Market Returns (10 April 2023)

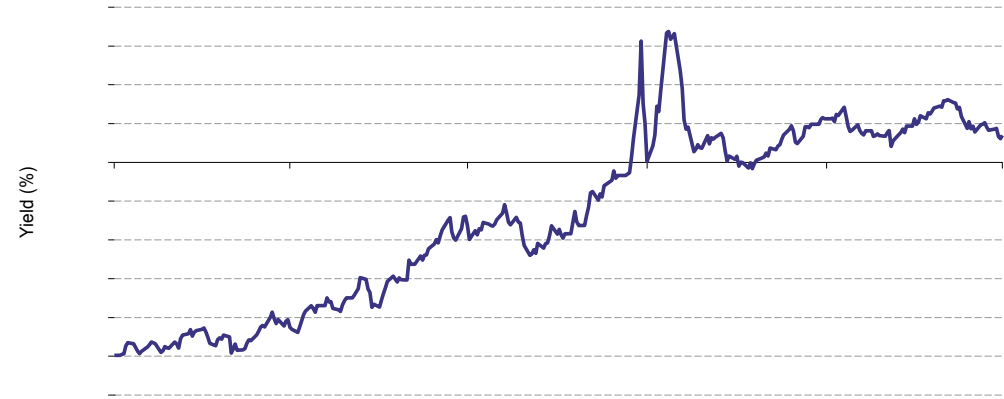


Notes: Data to 10 April 2023 (latest available). Sources: Refinitiv, Eikon, Isio calculations.

Current market conditions

Return 4.3% 4.9% 8.5% 4.7% 1.1% 3.2% 0.8% 4.6%

Gilt yields (20 year Real Yield)



Yields and gilt pricing

On this page we outline some additional considerations which are relevant when investing in Index-Linked Gilts (“ILGs”).

Direct protection on UK inflation is uncapped

ILGs provide immediate and direct UK RPI inflation exposure which is uncapped. Both principle and coupon payments of the bonds rise with inflation. This is an attractive investment attribute and there are limited investment alternatives which provide this exposure.

Inexpensive access -trading costs and management fees

ILGs are liquid and have relatively low trading costs (currently c.0.1%) compared to other asset classes. The Camden Fund is already has ILG investment exposure via the current passive mandate held with LGIM. The LGIM mandate has low fees and benefits from the LCIV negotiated fee rates.

Governance simple

Given an increase in ILGs would be via an existing manager and a passive mandate, initial and ongoing governance for the allocation can be expected to be light.

Pricing

We are aware that in the past, the Committee and Officers have been concerned about the pricing of ILGs. Following the last strategy review, it was agreed that a pricing trigger would be implemented, whereby the Fund would increase their investment in ILGs should the 20-yr real yield reach -1.5% (at which point ILGs could be considered “fair value” based on historical and expected levels, as their value falls with rises in yields).

Gilt yields (20 year Real Yield)

Gilt yields change since the last strategy review



Notes: Data to 131 May 2023 (latest available). Sources: Refinitiv, Eikon, Isio calculations.

Since the last strategy review (the period highlighted in the chart above), gilt yields have significantly increased. Over late 2022 in particular, the UK Gilt Crisis (sparked by the 'mini-budget' announcement in September) saw yields rise very sharply. Markets stabilised in late 2022, and yields fell back slightly, however they remain high vs averages over the last 10 years, with gilt prices therefore lower than average. The pricing is now at a significantly more attractive level than when the trigger level was set.

Environmental, Social and Governance (“ESG”) Considerations

UN Sustainable Development Goals (“UN SDG”) focus areas

The below United Nations Sustainable Development Goals (“UN SDGs”) have been identified as key areas of focus for the Fund, its investment managers and advisors when making investment decisions. These have been documented in the Investor Beliefs Statement.

Environmental

Climate Action (SDG 13) - Goal: Taking urgent action to tackle climate change and its impacts.

Affordable and Clean Energy (SDG 7) - Goal: To ensure access to affordable, reliable, sustainable and modern energy for all.

Life Below Water (SDG 14) - Goal: To conserve and sustainably use the world’s oceans, seas and marine resources.

Life on Land (SDG 15) - Goal: To sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.

Social

Good Health and Well-Being (SDG 3) - Goal: To ensure healthy lives and promote well-being for all at all ages.

Sustainable Cities and Communities (SDG 11) - Goal: To make cities inclusive, safe, resilient and sustainable.

Quality Education (SDG 4) - Goal: To ensure inclusive and equitable education and promote lifelong learning opportunities for all

Clean Water and Sanitation (SDG 6) - Goal: To ensure access to safe water sources and sanitation for all.

Decent Work and Economic Growth (SDG 8) - Goal: To promote inclusive and sustainable economic growth, employment and decent work for all.

Responsible Consumption and Production (SDG12) - Goal: To ensure sustainable production and consumption patterns.

Governance

Reduced Inequalities (SDG 10) - Goal: To reduce inequality within and among countries.

Gender Equality (SDG 5) - Goal: To achieve gender equality and empower all women and girls.

Partnerships for the Goals (SDG 17) - Goal: To revitalize the global partnership for sustainable development.



UN SDG alignment in investment strategy

		Current Strategic allocation	Current strategy	Going forward
Equity	Public Equity	50.0%	Active equity allocation (11.3%) in Paris-aligned fund. Roughly half overall passive allocation invested in LGIM Future World Global Equity Fund (14.2%), with a broad ESG (including climate) tilt.	<ul style="list-style-type: none"> When reviewing the equity allocation should consider other ESG focussed funds on the LCIV pool – including the LCIV PEPPA fund, sustainable equity funds managed by Harris and other sustainable active equity funds on LCIV. The Committee could also consider switching the remaining standard passive exposure to the Future World approach given increased familiarity now.
	Private Equity	5.0%	No specific ESG focus in current mandate.	<ul style="list-style-type: none"> No easily accessible ESG products currently in the market.
Diversified Growth Fund	DGF	5.0%	No specific ESG focus in current mandate, however our Sustainable Investment research team highly rate Baillie Gifford's capabilities and commitment at the firm level.	<ul style="list-style-type: none"> No options available with specific ESG objectives on LCIV pool, but sustainable DGF options available off-pool.
Credit	Private Credit Secondaries	0.0%	N/A	<ul style="list-style-type: none"> Very limited specific ESG private credit products in the market currently but a developing area.
	Multi Asset Credit	12.0%	No specific ESG focus in current mandate, however our Sustainable Investment research team highly rate both PIMCO and CQS's capabilities and commitments at the firm level.	<ul style="list-style-type: none"> No options available with specific ESG objectives on LCIV pool, but "best in class" sustainable MAC options available off-pool. Ensure LCIV engaging with managers to drive change.
UK Government Bonds	Index-Linked Gilts	8.0%	No specific ESG focus in current mandate.	<ul style="list-style-type: none"> Currently no 'green' index-linked gilts options available in the market, but may be a future development.
Real assets	Long-Lease Property	5.0%	No specific ESG focus in current mandate.	<ul style="list-style-type: none"> Ensure LCIV engaging with managers to drive change.
	Commercial Property	10.0%	No specific ESG focus in current mandates.	<ul style="list-style-type: none"> Very limited specific ESG specific products in the market currently but a developing area.
	Infrastructure Equity	5.0%	Allocation to renewable energy infrastructure via the LCIV Infrastructure Fund.	<ul style="list-style-type: none"> Positive alignment through elements of existing mandate. LCIV have recently launched a renewable energy focussed infrastructure equity fund which could be considered.
	Residential Housing	0.0%	N/A	<ul style="list-style-type: none"> LCIV have recently launched an Affordable Residential Housing Fund which has socially focused objectives which could be considered.

As mentioned above, the LCIV pool recently launched a renewable energy focused infrastructure fund and a residential housing fund. Although these are not considered in detail in this review, the Fund could explore them further if there is appetite to allocate to these strategies.

Net zero alignment

The London CIV have published their ambition of becoming a Net Zero entity by 2040. Given the movement for LGPS Funds to pool their assets, the Camden Fund could therefore consider 2040 to be a proxy deadline by which to achieve Net Zero within the investment portfolio.

Fund	Fund net zero target present?	Firm-wide net zero target?	Notes
LCIV Diversified Growth Fund (<i>Baillie Gifford</i>)	No	Yes *	* LCIV have published their ambition of becoming a Net Zero entity by 2040
LCIV MAC Fund (<i>CQS & PIMCO</i>)	CQS (Yes) ; PIMCO (No)	Yes *	CQS: Interim decarbonisation target commitment of 50% reduction by 2030 from a 31 December 2019 baseline for the Credit Multi Asset Fund.
LCIV Infrastructure Fund (<i>Stepstone</i>)	No	Yes *	The LCIV Infrastructure Fund was designed with a minimum of 25% of commitment in renewable energy exposure. The current asset allocation is aligned to this.
LCIV Real Estate Long Income Fund (<i>Aviva</i>)	No	Yes *	
LCIV Global Alpha Growth Paris Aligned Fund (<i>Baillie Gifford</i>)	Yes	Yes *	The fund aims to have a weighted average greenhouse gas intensity that is lower than that of the MSCI ACWI Climate Paris Aligned Index (10% annual self-decarbonisation). Baillie Gifford is a signatory to the Net Zero Asset Managers initiative ("NZAMi"), which is an international group of asset managers committed to supporting the goal of net-zero greenhouse gas emissions by 2050 or sooner.
Harris Global Equity	No	No	
CBRE Property Fund	No	Yes	CBRE Investment Management is a signatory to the Net Zero Asset Managers initiative ("NZAMi"). For the London Borough of Camden portfolio there is no overall target net zero target set for the portfolio as a whole. CBRE closely monitor the net zero carbon commitments of each underlying fund for both scopes 1 and 2 (emissions within the control of the landlord) and scope 3 (emissions for which the tenant is responsible).
Partners Group Real Estate Secondaries Fund	N/A	Yes	All of the funds within the portfolio will wind-down before 2050. The company has wider net zero goals across all of their investments. They aim to be net zero by 2050, to achieve a 50% reduction by 2035 and achieve a 20% reduction during their holding period on direct assets (~5 year hold).

Net zero alignment cont.

Fund	Fund net zero target present?	Firm-wide net zero target?	Notes
HarbourVest Private Equity Fund	No	No	The manager is aiming to provide its emission calculations from Q3 2023 onwards as a starting point.
LGIM Index Linked Fund			
LGIM World Equity	No	Yes	LGIM has committed to support the goal of net zero GHG emissions by 2050, in line with global efforts to limit warming to 1.5°C. As part of this commitment, LGIM has set a net zero AUM target of 70% by 2030.
LGIM Future World Global Equity			

Alternative Portfolios

Proposed direction of travel

Reduce Equity allocation



- For a number of years the Fund's equity allocation was significantly overweight versus its strategic target. This was addressed following the last strategy review, however there still remains An overweight position (by 5%). Recent market volatility has highlighted the risk to the funding level posed by holding a large equity allocation.
- We believe that a robust, well diversified equity portfolio should remain a core part of the Fund's asset allocation to drive long-term growth, however we believe there is scope to reduce the allocation from its current position.
- At a minimum, the equity allocation should be brought down to its current strategic target. However we believe that given the Fund's strong current funding level, there is a scope to further reduce the allocation and redistribute that capital into opportunities that provides less volatile returns (e.g. credit) or which help the Fund to achieve its SDG goals (e.g. affordable housing or renewable infrastructure).

Increase exposure to inflation-linked assets



- The Fund has already introduced allocations to index-linked gilts and infrastructure equity, which provide some direct inflation protection to help address the risk that rising inflation poses.
- Following the last strategy review, it was agreed that a pricing trigger would be implemented, whereby the Fund would increase their investment in ILGs should the 20-yr real yield reach -1.5% (at which point ILGs could be considered 'fair value', as their value falls with rises in yields). The yield is now at c. 0.9%, so we strongly recommend that the Fund act increase its allocation to ILGs given this pricing.
- In addition, LCIV have recently launched a renewable infrastructure fund, which could improve inflation exposure, whilst also helping the Fund to better-align to its UN SDGs.

Increase exposure to broader, more flexible mandates e.g. multi-asset credit or others



- Given we believe the volatile market conditions are expected to continue in the short to medium term, we believe flexible mandates with the ability to rotate exposure quickly based on market conditions will be well placed to target returns more opportunistically.
- An increase to multi-asset credit should be considered given these characteristics and as the current yield environment enables this asset class to provide the Fund with attractive returns, while reducing the overall investment risk taken. Other areas which could be considered private debt secondaries - this would be a new area for the Fund but an area which we think is particularly attractive at the moment or DGF.

Investment into affordable housing and renewable infrastructure



- Allocating capital towards affordable housing and renewable infrastructure would allow the Fund to make significant progress towards its SDG goals, alongside reaping diversification benefits and benefiting from the illiquidity premiums provided by these asset classes and also the direct inflation linkage they provide.
- As mentioned above, LCIV have recently launched a renewable infrastructure fund, as well as an affordable housing fund.
- The following pages provide further detail regarding these asset classes.

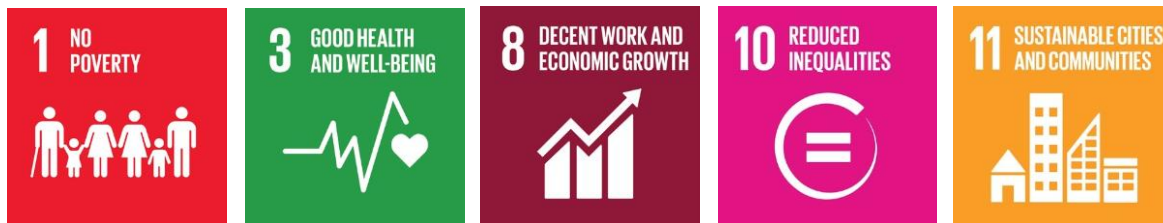
New asset class: Affordable Housing

Sub-sector of residential property investment focused on affordable housing and socially focused housing. As well as the attractive investment characteristics of broader residential property, affordable housing has strong ESG characteristics by addressing structural housing market imbalances which currently exists in the UK and additionally socially focused housing, supporting those most in need in society, whilst addressing a number of UN SDGs.

Key features include:

- Risk adjusted returns from funds are attractive and often supported either partially or fully by government backed payments, thus subject to very low defaults historically.
- Social housing has a low correlation to other property markets and the wider economy due to support from central government bodies. In recent years, the social housing sector has proven itself to be more resilient to economic downturns than some other property sectors, such as commercial property and retail.
- Whilst some investment funds use leverage, it is capped at reasonable levels to achieve the desired return.
- Investing in social housing strategies makes a tangible positive impact on social issues in the UK. The funds can either target a range of social issues or attempt to solve a particular social problem, such as child services.
- An allocation to this asset class would allow investors to meet the UN SDGs shown below:

Applicable UN SDGs:



Typical Characteristics

Expected Return	Low		High	Gilts +4.0-6.0%p.a.
Credit Quality	Low		High	High
Shape of Outcomes	0% Contractual		100% Contractual	Contractual
Lease Length	Short		Long	Long
Diversification	Concentrated		Highly Diversified	Diversified
Management Fee	Low		High	0.75% to 1.00% p.a.

Implementation Considerations

Availability	Limited number of pooled funds currently available
Governance	Initially high due to long queues and drawdowns, moderate ongoing
Trading costs	2-3% investment costs and 1-2% disinvestment costs
Turnover	Low
Lock-ins	Initial lock-ins during development or ramp up phase
Geography	UK Focused
Past Performance	TBU - asset class relatively new.

New asset class: Affordable Housing

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New asset class: Renewable Infrastructure

Infrastructure assets are required for economic, industrial and social development. Renewable Infrastructure is a sub-sector of the broader infrastructure market focusing on renewable energy generation and the energy transition movement.

Key features include:

Within infrastructure assets, there are two broad types:

‘Brownfield’ assets - mature projects that are already in operation. Brownfield infrastructure is considered to be lower risk, as projects are already operating and provide a reliable stream of cashflows.

‘Greenfield’ assets - projects which are still in the construction and/or development stage. Greenfield infrastructure is often deemed higher risk, as the investor is exposed to the construction risk of the asset, so there is less certainty of outcome and no immediate cashflows are provided to investors.

Infrastructure equity is considered an attractive investment due to:

Long duration: many of the underlying assets provide long-term, predictable revenue streams, which can act as a broad match for a pension scheme’s liabilities;

Inflation protection: asset revenues often rise with inflation thus providing protection for pension schemes’ inflation-linked liabilities;

Attractive income yield: brownfield infrastructure assets are relatively low risk and can provide high yielding income with a high degree of certainty.

Investing in renewables reduces the reliance on fossil fuel combustion for energy generation, contributing towards Net Zero targets and other UN SDGs.

Applicable UN SDGs:



Typical Characteristics

Expected Return	Low		High	Gilts + 4.6% p.a.
Expected Volatility	Low		High	12% p.a.
Shape of Outcomes	0% Contractual		100% Contractual	>50% contractual
Liquidity	Immediate		Long	Long
Diversification	Concentrated		Highly Diversified	Concentrated
Management Fee	Low		High	0.5%-1.0% p.a.
Performance Fee	No		Yes	5%-15%

Implementation Considerations

Availability	Segregated and pooled options available
Governance	High due to fund structures, queues and drawdowns
Trading costs	Up to 1%
Turnover	Low turnover of underlying investments
Lock-ins	Depending on fund structure 5 - 20 years
Active/Passive	Active only
Geography	Global / regional / UK only

New asset class: Renewable Infrastructure

New asset class: Private Debt Secondaries (“PDS”)

Private debt secondaries (‘PDS’) strategies involve buying private debt assets on the secondary market from both Limited Partners (LPs) and General Partners (GPs) seeking liquidity. We prefer strategies which focus on performing senior debt, where excess returns are largely driven by a 5-15% discount to fair value. Some managers may also seek modestly levered positions and utilise mezzanine/distressed positions to increase returns; however the latter should form the minority of an overall portfolio.

Key features include:

Private debt secondaries strategies are a new opportunity that have evolved from the growth of the private debt market. As fundraising in private debt has increased, the turnover of these assets has naturally started to rise providing investors with an alternative entry point to access the private debt universe.

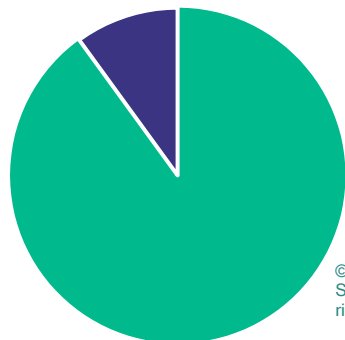
A PDS strategy allocates across both General Partner (‘GP’) and Limited Partner (‘LP’) led deals buying stakes of direct lending funds. These are characterised as GP-led deals and LP-led deals, as outlined on page 11.

Returns are generated via three main levers: the interest from the loans in the underlying funds; the capital gain of the loans which are issued at a discount; and the discount to net asset value on the direct lending funds the secondaries manager is able to achieve.

Other return drivers include the ability to allocate a small proportion of the fund to higher returning strategies, such as mezzanine debt, and leverage used by the underlying direct lending funds.

Example Asset Allocation

Subordinated Loans
0-20%



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Source: Sample investment manager

Typical Characteristics

Expected Return	Low		High	Net IRR 8-10%
Expected Volatility	Low		High	c.8-10% p.a.
Shape of Outcomes	0% Contractual		100% Contractual	Mostly contractual
Liquidity	Immediate		Long	Long
Diversification	Concentrated		Highly Diversified	Diversified
Management Fee	Low		High	1.0% to 1.25% p.a.
Performance Fee	No		Yes	5.0% - 15.0% p.a. subject to return hurdle

Implementation Considerations

Availability	Limited number of pooled funds currently available
Governance	Moderate, drawdowns plus standard quarterly monitoring
Trading costs	None
Turnover	Low
Lock-ins	Withdrawals are not permitted. Capital will be distributed over the Fund’s life.
Geography	Global
Asset Allocation	80%-100% Senior / Unitranche; 0%-20% Subordinated Loans
Past Performance	Due to the infancy of the asset class, it is too early to draw meaningful conclusions from past performance.

New asset class: Private Debt Secondaries (“PDS”)

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Illustrative alternative portfolios description

The following slide sets out four alternative strategies that the Fund could look to adopt: Given the very strong funding position achieved the overall theme is one of reducing investment risk whilst maintaining a broadly similar level of return.

Current building blocks

This strategy utilises the Fund's current investment mandates, but adjusts the allocations to some, in order to improve the risk / return efficiency of the investment portfolio.

High impact

This strategy tweaks the allocations to some of the current mandates, and also introduces a new 'Affordable Housing' allocation to improve the ESG credentials of the investment portfolio whilst reducing overall investment risk. To further enhance this, the increase to Infrastructure Equity could be made via the LCIV Renewable Infrastructure Fund, however the Committee should weigh up the governance considerations associated with implementing another mandate. If the existing Infrastructure Equity mandate were to be increased instead this would still improve the ESG impact of the investment portfolio as this mandate includes a c. 10% allocation to renewables.

Innovative diversification

This strategy tweaks the allocations to some of the current mandates, and also introduces a new 'Private Debt Secondaries' allocation, in order to significantly enhance the risk / return efficiency of the investment portfolio, and diversify the portfolio into a new asset class which we think is particularly attractive currently. (Private Credit).

Significantly lower risk

This strategy reduces the equity allocation by 10%, investing the proceeds into the existing Index-Linked Gilts, Multi-Asset Credit and Infrastructure Equity mandates. These changes reduce the risk within the portfolio by 17% vs the current strategy.

Illustrative alternative portfolios - overview

● Reduced

● Increased

● Introduced

		Current strategic target	Current actual allocation (incl. net commitments)	Current building blocks	High impact	Innovative diversification	Significantly lower risk
Equity	Public Equity	50.0%	55.0%	50.0% (-5.0%)	45.0% (-10.0%)	45.0% (-10.0%)	40.0% (-15.0%)
	Private Equity	5.0%	2.8%	2.0%	2.0%	2.0%	2.0%
Diversified Growth Fund	DGF	5.0%	4.6%	5.0%	5.0%	5.0%	5.0%
Credit	Private Debt Secondaries	-	-	-	-	5.0% (+5%)	-
	Multi Asset Credit	12.0%	11.7%	12.0% (+0.3%)	15.0% (+3.3%)	17.0% (+5.3%)	17.0% (+5.3%)
UK Government Bonds	Index-Linked Gilts	8.0%	3.5%	10.0% (+6.5%)	8.0% (+4.5%)	8.0% (+4.5%)	12.0% (+8.5%)
	Long-Lease Property	5.0%	4.5%	5.0%	5.0%	5.0%	5.0%
Real assets	Commercial Property	10.0%	10.3%	8.0% (-2.3%)	6.0% (-4.3%)	6.0% (-4.3%)	10.0%
	Infrastructure Equity	5.0%	4.1%	8.0% (+3.9%)	9.0% (+4.9%)	7.0% (+2.9%)	9.0% (+4.9%)
	Affordable Housing	-	-	-	5.0% (+5%)	-	-
Cash	Cash	-	3.5%	-	-	-	-

Source: Hymans Robertson data, Isio calculations as at 31 December 2022.

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Illustrative alternative portfolios - metrics

	Current strategic target	Current actual allocation (incl. net commitments)	Current building blocks	High impact	Innovative diversification	Significantly lower risk
Expected return (% p.a.)	7.9%	7.8%	7.8% (-0.1%)	7.8% (-0.1%)	7.8% (-0.1%)	7.6% (-0.3%)
VaR (3 yr, 1 in 20 chance)	£785m	£817m (+4%)	£755m (-4%)	£706m (-10%)	£705m (-10%)	£649m (-17%)
% of assets with direct inflation linkage ¹	c. 18%	c. 12%	c. 23%	c. 22%	c. 20%	c.26%
ESG impact*	-	-	Scope for some improvement through small increase infrastructure	Scope for material improvement through increase in infrastructure and new allocation to affordable housing	Limited scope for improvement through small increase infrastructure	Scope for some improvement through small increase infrastructure
Governance ²	13 mandates, managed by 6 managers	13 mandates, managed by 6 managers	13 mandates, managed by 6 managers	15 mandates, managed by 6 managers	14 mandates, managed by 7 managers	13 mandates, managed by 6 managers
Indicative overall fees	£8.9m	£8.5m	£7.8m	£8.2m	£8.3m	£8.5m

*the increase to Infrastructure Equity could be made either via the LCIV Renewable Infrastructure Fund (to help improve the ESG credentials of the overall investment portfolio), or via a top-up to the existing Infrastructure Equity mandate. Should the Committee choose the latter option, then the number of mandates would be 1 less than that shown above but the number of managers would remain the same.

Note: ¹ Assets include: index-linked gilts, LLP & infrastructure equity

² For mandates invested via the London CIV, we consider LCIV to be the investment manager.

Source: Hymans Robertson data, Isio calculations as at 31 December 2022.

Implementation of Strategy Changes

LCIV current product range

● Currently invested

Fund	Size	Number of Investors
Equity		
LCIV Global Alpha Growth Fund	£936m	4
LCIV Global Alpha Growth Paris Aligned Fund	£2,185m	11
LCIV Global Equity Fund	£589m	3
LCIV Global Equity Focus Fund	£1,076m	6
LCIV Global Equity Quality Fund	£555m	2
LCIV Emerging Markets Equity Fund	£590m	8
LCIV Sustainable Equity Fund	£1,240m	8
LCIV Sustainable Equity Exclusion Fund	£549m	4
LCIV Passive Equity Progressive Paris Aligned Fund	£549m	2
Multi-Assets		
LCIV Global Total Return Fund	£214m	3
LCIV Diversified Growth Fund	£793m	9
LCIV Absolute Return Fund	£1,117m	10
LCIV Real Return Fund	£172m	2

Source: LCIV as at 31 March 2023

LCIV current product range

● Currently invested

Fund	Size	Number of Investors
Fixed Income		
LCIV MAC Fund	£1,299m	13
LCIV Alternative Credit Fund	£359m	3
LCIV Global Bond Fund	£669m	8
Real Assets		
LCIV Infrastructure Fund	£399m committed (£262m drawn down)	6
LCIV Renewable Infrastructure Fund	£854m committed (£291m drawn down)	13
Private Markets		
The London Fund	£195m committed (£80m drawn down)	2
Private Debt		
LCIV Private Debt Fund	£625m committed (£395m drawn down)	8
Property		
LCIV Real Estate Long Income Fund (LCIV RELI)	£213m committed (£213m drawn down)	3
LCIV UK Housing Fund	£150 committed (£0m drawn down)	2

Source: LCIV as at 31 March 2023

LCIV are also in initial discussions with underlying LGPs funds and a Seed Investor Group in relation to a Value-focused global active equity proposition which may have sustainable characteristics.

Implementation

- The table below details the high-level transactions proposed to fund a transition to the 'High Impact' strategy. The 'target strategic allocations' shown under 'Start Position' therefore reflect that of the 'High Impact' strategy. These numbers are indicative based on the December 2022 asset value and so subject to change.
- Across the numbers which show 'deviation from strategic allocation', the colour coding highlights where allocations are within 1.0% of their strategic target, are less than 3% away, or equal to or greater than 3% away.
- The colour coding within the 'funding cashflows' rows is used to match disinvestment and investments.

		Active Equity	Passive Equity	Credit	Index-Linked Gilts	Infrastructure Equity	Commercial Property	LLP	Affordable Housing	Private Equity	DGF	Cash & Other
Start position	Value (£m)	£385	£651	£220	£66	£78	£194	£84	-	£52	£86	£66
	Actual allocation (% of total assets)	20.4%	34.6%	11.7%	3.5%	4.1%	10.3%	4.5%	-	2.8%	4.6%	3.5%
	Target strategic allocations	10.0%	35.0%	15.0%	8.0%	9.0%	6.0%	5.0%	5.0%	2.0%	5.0%	0.0%
	Deviation from strategic allocations	+10.4%	(0.4%)	(3.3%)	(4.5%)	(4.9%)	+4.3%	(0.5%)	(5.0%)	+0.8%	(0.4%)	+3.5%
Funding cashflows	Disinvestments	-£92m -£94m					-£84m			-£31m		-£31m
	Investments			£62m	£84m	£8m £84m			£94m			
End position	Value (£m)	£198	£651	£282	£150	£170	£110	£84	£94	£21	£86	£35
	Actual allocation	10.5%	34.6%	15.0%	8.0%	9.0%	5.8%	4.5%	5.0%	1.1%	4.6%	1.9%
	Deviation from strategic allocations	+0.5%	(0.4%)	0.0%	0.0%	0.0%	(0.2%)	(0.5%)	0.0%	(0.9%)	(0.4%)	+1.9%

Implementation considerations

Asset Class	Consideration
Equity	<ul style="list-style-type: none"> • Consideration should be given to which equity mandate(s) to reduce when implementing the updated investment strategy. • We propose the active equity allocation is reduced but note this will increase the bias to passive equity management as implemented under the previously agreed 60 passive / 40 active split. This was agreed at the time of the last formal investment strategy review. • Reducing the allocation to active management will lower the overall management fees in the portfolio and also reduced the risk of meaningful underperformance. • This can be implemented via a reduction in Baillie Gifford or Harris. Reducing Harris would have the largest impact in terms of carbon metrics for the portfolio given the Paris Aligned nature of Bailie Gifford's strategy
Private Equity	<ul style="list-style-type: none"> • Our proposal is to allow the private equity holdings to unwind and return cash naturally. As this happens, the Credit mandate can be gradually increased to target. • Via the Mansion House speech in July 2023, the UK government is at the early stages of discussing reforms which may encourage LGPS funds to increase private equity allocations in the future. • Although we do not believe this is a key consideration today, it may become more relevant in the future. We believe these holdings should be reconsidered should further regulation come in to force with a view to funding any required increase to private equity from public equities (if required).
Property	<ul style="list-style-type: none"> • Given the inherent illiquidity in the asset class, reducing the Fund's property allocation to fund other mandates can be timely and expensive. • We propose this is considered further in a separate paper following agreement of the overall asset allocation.
Infrastructure Equity	<ul style="list-style-type: none"> • The increased infrastructure allocation can be implemented (via the pool) either through the LCIV Infrastructure Fund (which has a broad infrastructure mandate with c. 1/3 of the portfolio allocated to renewable energy) or via the specific LCIV Renewables Infrastructure Fund. • These funds differ in their make up and investment characteristics, as such the Committee should consider which they feel is most appropriate for the new allocation.
Cash balance	<ul style="list-style-type: none"> • We understand a working cash balance is needed to meet the short term cash requirements of the Fund. • We have assumed 2% of total assets will be sufficient for this but this is subject to change due to regular inflows/outflows.

Summary and Next Steps

Summary and next steps

Summary

- The results of the March 2022 Actuarial valuation process indicate a 113% funding level position as at that date. We have reviewed the Fund's investment strategy in light of this position, and the agreed strategic objectives, using a rolled forward funding position and market conditions as at 31 December 2022. We estimate a funding position of c.139% and a surplus of £529m at this date.
- We believe the Fund's current target strategy will generate a long term return of 7.9% p.a. which we believe is sufficient to meet the Actuary's assumed return requirements under the current funding basis. We believe there may be scope to slightly reduce investment strategy expected returns and risk if the Committee were minded to do so.
- We understand the Fund wishes to continue to pursue long term returns in order to continue to build up a surplus within the Fund over the long term. We have presented a range of alternative asset allocations for consideration which do so in a risk managed way.
- All of the alternative strategies presented offer an evolution from the Fund's current investment strategy in order to continue to drive returns, and reduce risk, and increase flexibility going forward - something we believe will be important given the market environment.
- If the Fund were minded to pursue a strategy that retains a similar level of return, but with a lower volatility, then either of the first three alternative strategies suggested would be appropriate.
- Further, if the Fund is minded to retain a similar level of return, whilst also focussing on responsible investing and better-aligning the portfolio with the Fund's SDG, then we recommend the 'High Impact' strategy as the chosen alternative strategy.
- The Fund should also consider both the governance implications of the number of mandates/managers and the potential ongoing management costs before making any final decisions.

Next steps

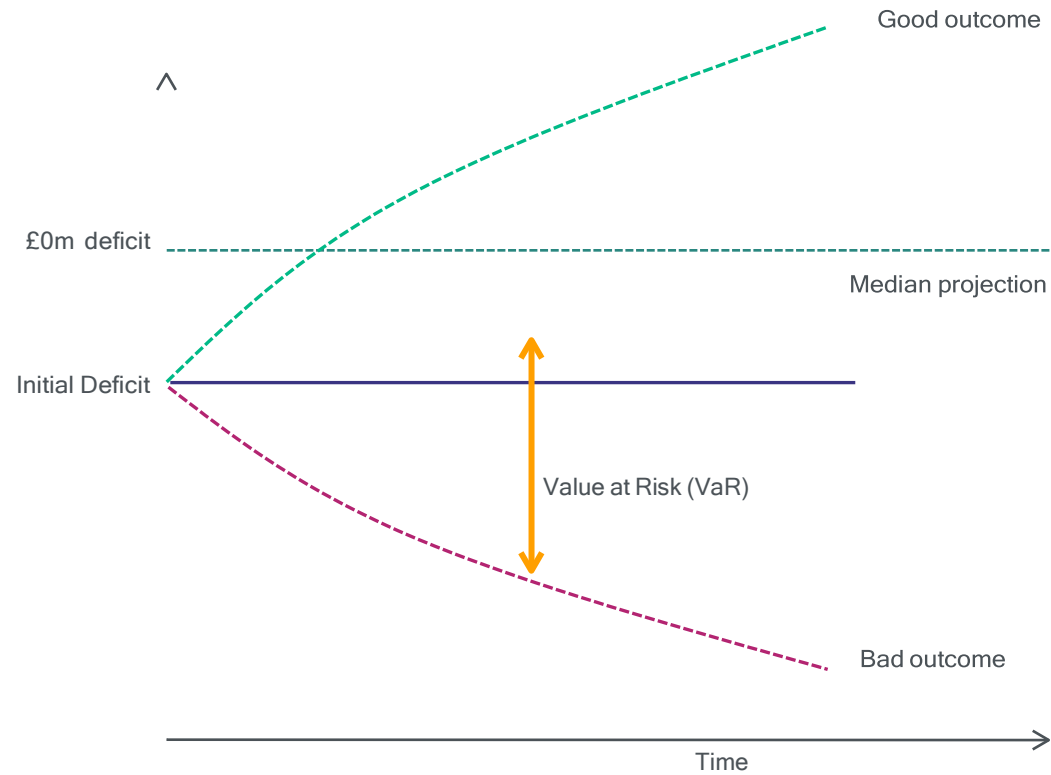
- The Committee should consider its views on:
 - the alternative asset allocations put forward in this paper fo, including the "High Impact" portfolio proposed by Isio, and whether there is any appetite to make change;
 - the new asset classes proposed;
 - the make up of the Fund's equity allocation and whether there is merit in a further implementation review of this mandate e.g. the Committee's beliefs in relation alternative active equity management or whether the passive holdings should be switched to a fully sustainable approach.
 - The overall allocation to private marketing mandates and whether some "topping up" or rebalancing is required given the growth in overall Fund assets.
- Whilst secondary to the decision on the strategic asset allocation, the Fund will also need to consider the implementation of any changes, including the impact of pooling, in further detail.
- We look forward to discussing this report with the Committee.

Appendices

A1: Value at Risk - an explanation

Value at Risk ("VaR")

- The 1 in 20 value at risk is the difference between the 5th percentile outcome and the expected (median) outcome. The VaR measure gives a sense of how much better or worse the funding position could be relative to the central expectation for different market conditions. This is important when comparing investment strategies and setting contribution rates.



Note: the above chart is for illustrative purposes only.

A2: Return and volatility assumptions as at 31.12.22

Introduction to the assumptions

- These are our “best estimate” asset class return, volatility and correlation assumptions. We believe there is a 50:50 chance that the actual outcome will be above/below our assumptions.
- The assumptions are long-term, for a 10-year period, expressed in Sterling terms.
- Return assumptions are:
 - Annualised (i.e. geometric averages), rounded to the nearest 0.1%.
 - Expressed relative to the yield on fixed interest gilts (the annual yield at the 10-year tenor on the Bank of England spot curve). This yield was 3.8% at 31 December 2022.
 - Net of management fees.
 - Before tax. UK pension schemes are exempt from tax on investments. The impact of taxation may reduce returns for other investors.
- Volatility assumptions are based on the standard deviation of annual returns over a 10-year period, rounded to the nearest 0.5%.
- Bond volatilities are sensitive to the duration of the index. Our Fixed Interest Gilts (FIG) and Index-Linked Gilts (ILG) assumptions both relate to Over 15 Year indices, but the cashflow profile of the ILG index is considerably longer than the FIG index. Hence the difference in volatilities does not necessarily mean that real yields are assumed to be more volatile than fixed yields.
- Correlation assumptions are based on the correlation of annual returns over a 10-year period, rounded to the nearest 5%.

Limitations and risk warnings

- There can be no guarantee that any particular asset class or investment manager will behave in accordance with the assumptions.
- The assumption setting process is subjective and based on qualitative assessments rather than a wholly quantitative process. Newer asset classes can be harder to calibrate due to the lack of a long-term history. Some asset classes may rely on active management to help deliver the assumed return. The returns on illiquid assets may vary by vintage; in these cases the quoted return expectation is necessarily an estimate encompassing multiple vintages.
- Where these assumptions are used within asset-liability modelling, please note that the model's projections are sensitive to the econometric assumptions. Changes to the assumptions can have a material impact upon the modelling output

A2: Return and volatility assumptions as at 31.12.22

Asset Class	Sector ¹	Return ²	Volatility ³
Equity	Developed Markets – Passive	4.0%	20.0%
	Developed Markets – Core Active	4.5%	20.5%
	Global Unconstrained	5.0%	21.0%
	Developed – SmallCap Passive	4.6%	24.0%
	Emerging Markets – Passive	5.5%	28.0%
Property	UK Balanced Property	2.4%	13.0%
	Long Lease Property	2.5%	8.0%
	Private Rented Sector	3.0%	13.0%
	Global Property Secondaries	6.0%	30.0%
Hedge Funds	Multi-Strategy Fund of Funds	2.5%	10.0%
	Global Macro	3.0%	13.0%
Diversified Growth Funds	DGF (lower risk) ⁵	2.8%	10.0%
	DGF (higher risk) ⁵	3.5%	12.5%
Alternatives	Private Equity	6.5%	26.0%
	Diversified Alternatives	6.0%	18.0%
	Infrastructure Equity (lower risk) ⁵	4.2%	10.0%
	Infrastructure Equity (higher risk) ⁵	4.9%	15.0%

Notes: Please refer to full explanations and caveats on previous pages.
¹ Includes active management except where specified as passive.
² Expected return per annum, net of fees, relative to the yield on fixed-interest gilts.
³ Expected standard deviation of absolute annual returns.
⁴ Includes allowances for downgrades and defaults.
⁵ "Lower risk" and "higher risk" are relative descriptions within the asset category only, with no wider meaning.

Source: Isio

Asset Class	Sector ¹	Return ²	Volatility ³
Credit ⁴	Corp. Bonds (IG All-Stk) – Passive	1.2%	8.5%
	Corp. Bonds (IG All-Stk) – Active	1.5%	8.5%
	Corp. Bonds (IG >15y) – Passive	0.9%	11.5%
	Corp. Bonds (IG >15y) – Active	1.2%	11.5%
	Absolute Return Bonds	1.5%	4.0%
	Asset-Backed Securities (IG)	2.0%	5.0%
	CLO	2.6%	9.0%
	Direct Lending	4.2%	10.5%
	Distressed Debt	7.0%	18.0%
	Diversified Credit	2.5%	11.0%
	Diversified Private Credit	4.2%	10.0%
	Infrastructure Debt – Senior	2.0%	6.0%
	Infrastructure Debt – Junior	3.3%	9.5%
	Multi-Asset Credit (lower risk) ⁵	2.6%	6.5%
	Multi-Asset Credit (higher risk) ⁵	3.3%	9.0%
	Real Estate Debt – Senior	1.8%	6.0%
	Real Estate Debt – Junior	5.0%	14.0%
Real Estate Debt – Whole Loan	3.5%	9.0%	
Gilts	Secured Finance	3.3%	8.5%
	Semi-Liquid Credit	3.5%	9.0%
Cash	Fixed Int. Gilts (>15y) – Passive	0.0%	11.5%
	Index-Linked Gilts (>15y) – Passive	0.0%	12.0%
	Cash	0.0%	1.5%

A3: Modelling methodology

Data and sources

- Information on characteristics of the Fund's liability profile, including the split between membership types and the chart illustrating the shape of future cashflows, and liability information was taken from information provided by Hymans Robertson as at 31 December 2022, supplemented by emails from Hymans Robertson.
- Asset portfolio information was sourced from the 31 December 2022 Northern Trust valuation data, supplemented by an email from the Pension Fund Accountant.
- We judge that the use of high-level liability information, rather than detailed scheme-specific cashflow projections, is sufficient for the purpose of the modelling in this report.

Modelling principles

- SOFIA is a stochastic model that simulates a large number of possible future economic outcomes, in which financial conditions develop in a number of different ways, defined by assumptions for average outcomes, range of variability, and inter-dependency between different markets.
- The high-level market scenarios are generated by a third-party Economic Scenario Generator (ESG) provided by Moody's Analytics. The ESG is an industry-standard tool that is widely used by financial institutions (e.g. insurers, asset managers, and investment banks).
- Based on the scenarios generated by the ESG, SOFIA simulates asset-class returns calibrated to Isio's asset-class assumptions.

- SOFIA takes the initial starting position of the assets and the liabilities, and projects these values forward under the simulated scenarios, taking into account any relevant inflows and outflows.
- Different investment strategies are modelled in order to illustrate the effects of different allocations. In each case, SOFIA assumes that the strategy remains constant over the full projection period. Assets are annually rebalanced back to the original allocations.

Modelling results

- The results of the projections are shown by ranking the calculated results from best to worst in each year, and presenting the following outcomes:
- Median: this is the middle outcome and can be thought of as the "expected result". Half of the modelled outcomes are better than this and half are worse.
- Bad: this splits the results so that there is a one in five (20%) chance of having a worse outcome. This is a measure of risk.
- Very Bad: this splits the results at a one in twenty (5%) chance of having a worse result. This is a more extreme measure of downside risk.
- Good and Very Good (where shown): these illustrate possible positive outcomes at the 20% and 5% levels respectively.
- The "Value at Risk", where shown, is defined as the difference between the Median outcome and the Very Bad outcome, i.e. it represents the variability of funding outcomes and shows the magnitude of the possible downside from the expected result. Please note that this is not the same as the possible downside loss from the starting position.

A3: Modelling methodology

Compliance statement

- This report, and the work relating to it, complies with “Technical Actuarial Standard 100: Principles for Technical Actuarial Work” (“TAS 100”).
- This report has been prepared for the purpose of assisting the addressee in their review of the investment strategy. If you intend to use it for any other purpose or make any other decisions after considering this report, please inform Isio and we will consider what further information or work is needed to assist you in making those decisions.

Material assumptions

- Isio’s central asset-class assumptions are assessed and revised at each calendar quarter-end. The assumptions used within this modelling exercise are set out in the Appendix.
- Certain assumptions are sourced directly from the Moody’s Analytics ESG and available market data, or set via adjustments to these sources. Where required or deemed to be more appropriate, assumptions are entirely determined by Isio. The assumption setting process is subjective and based on qualitative assessments rather than a wholly quantitative process. Where judgement is required, input is received from Isio’s internal asset-class research teams.

Limitations and risk warnings

- The only risk factors considered in our modelling are those that affect the values of pension schemes’ assets and the financial assumptions used to value schemes’ liabilities. Some of the risks that are not reflected include demographic risks (e.g. uncertainty of life expectancy), future changes to members’ benefits, and legislative risks. The modelling results should therefore be viewed alongside those risks, as well as other qualitative considerations including portfolio complexity, governance burden, and liquidity risk.
- The model’s projections are sensitive to the starting position and the econometric assumptions. Changes to the assumptions can have a material impact upon the output. There can be no guarantee that any particular asset class or investment manager will behave in accordance with the assumptions. Newer asset classes can be harder to calibrate due to the lack of a long-term history.
- The modelling analysis is based on portfolios containing a range of asset classes and different approaches to fund management. Clients should not make decisions to invest in these asset classes or approaches to fund management based solely on the modelling analysis.
- Portfolios that make use of derivatives are exposed to additional forms of risk and can experience losses greater than the amount of invested capital.
- No guarantee can be offered that actual outcomes will fall within the range of simulated results. Actual outcomes may be better than the simulated 95th percentile or worse than the simulated 5th percentile.

A3: Modelling methodology

Liability basis

- Where the model illustrates a scheme-specific funding basis (e.g. Technical Provisions), the funding basis is calculated in the same way across all the investment portfolios modelled. We therefore focus on the effect of investment strategies on asset values and hence surplus/deficits, without the distorting effect of differing discount rates. However, in cases where the discount rate allows for a risk premium, the magnitude of the risk premium may depend on the proportion of return-generating assets in the portfolio, and therefore in practice the funding basis may be different under different investment strategies.

Contribution basis

- The model's projections may be based on either fixed or variable contributions:
- “Fixed contributions” means that the current schedule of deficit contributions is assumed to remain in place for the full projection period. The purpose of this is to illustrate pure investment risk, showing the effect of differing investment strategies without the distorting impact of different amounts of money being contributed. In practice, however, the long-term downside outcomes would be less likely to be reached, as poor intermediate outcomes would lead to a requirement for additional contributions after future valuations.
- “Variable contributions” means that the model simulates future actuarial valuations every three years, and calculates the future deficit contributions that might be required under the particular situations being projected. This illustrates the range of possible future contribution requirements.

- In addition to the deficit contributions, the model also calculates contributions required to fund future service accrual, if there are active members accruing additional pension entitlements. In this case a small amount of variability arises from the range of possible future inflation projections. Therefore the “fixed contribution” projections may still show minor differences in contributions between, for example, Median and Bad outcomes.

A4: Disclaimers

Disclaimers

- This report has been prepared for the sole benefit of the London Borough of Camden, as administering authority of the London Borough of Camden Pension Fund, and is based on their specific facts and circumstances and pursuant to the terms of Isio Group/ Isio Services Ltd's Services Contract. It should not be relied upon by any other person. Any person who chooses to rely on this report does so at their own risk. To the fullest extent permitted by law, Isio Group/ Isio Services Ltd accepts no responsibility or liability to that party in connection with the Services.
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- In the United Kingdom, this Report is intended solely for distribution to Professional Clients as defined by the Financial Conduct Authority's Conduct of Business Sourcebook.
- This report has not therefore been approved as a financial promotion under Section 21 of the Financial Services and Markets Act 2000 by an authorized person.
- Isio Service Limited is authorised and regulated by the Financial Conduct Authority FRN 922376.
- The output from our modelling is based on a large number of underlying assumptions. Changes to these assumptions can have a material impact on the results of the modelling.
- The outcomes shown above are not intended to be the best possible, or worst possible outcomes. The actual outcome could be worse than the 5th percentile, or better than the 95th percentile.
- The modelling analysis is based on portfolios containing a wide range of asset classes and different approaches to fund management. Clients should not make decisions to invest in these asset classes or approaches to fund management based solely on the modelling analysis.
- The only risk factors we have considered in our modelling are those that affect the values of pension schemes' assets and the financial assumptions used to value schemes' liabilities. Some of the risks we have not considered include demographic risks such as the life expectancy of pension schemes' members and future changes to members' benefits.

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