

John Hancock 2050 Lifetime Blend Portfolio

Class 1/JRLWX

ANNUAL SHAREHOLDER REPORT | AUGUST 31, 2024

This annual shareholder report contains important information about the John Hancock 2050 Lifetime Blend Portfolio (the fund) for the period of September 1, 2023 to August 31, 2024. You can find additional information about the fund at [jhinvestments.com/underlying-funds](https://www.jhinvestments.com/underlying-funds). You can also request this information by contacting us at 800-344-1029.

What were the fund costs during the last year?

(Based on a hypothetical \$10,000 investment)

| Fund (Class) | Costs of a \$10,000 investment | Costs paid as a percentage of a \$10,000 investment |
|--|--------------------------------|---|
| 2050 Lifetime Blend Portfolio (Class 1/JRLWX) | \$6 | 0.05% |

Management's Discussion of Fund Performance

SUMMARY OF RESULTS

2050 Lifetime Blend Portfolio (Class 1/JRLWX) returned 21.28% for the year ended August 31, 2024. Stocks rallied as falling inflation raised hopes that the U.S. Federal Reserve would start cutting interest rates. Positive global growth, steady corporate earnings, and excitement surrounding the adoption of AI added to the upbeat tone. In this environment, U.S. equities, the growth style, and the information technology sector outpaced the market as a whole. Bonds also produced gains, with income accounting for the majority of the category's total return. Credit-oriented categories generally outperformed those with higher interest-rate sensitivity.

TOP PERFORMANCE CONTRIBUTORS

The equity allocation made the largest contribution | The fund's sizable weighting in stock funds allowed it to benefit from the market's strong return.

U.S. large cap funds were the top contributors in equities | Holdings in international large cap and U.S. mid-cap also helped results.

TOP PERFORMANCE DETRACTORS

U.S. Treasury STRIPS (Separate Trading of Registered Interest and Principal of Securities) | These holdings, which tend to have above-average interest-rate sensitivity, combined for a small loss.

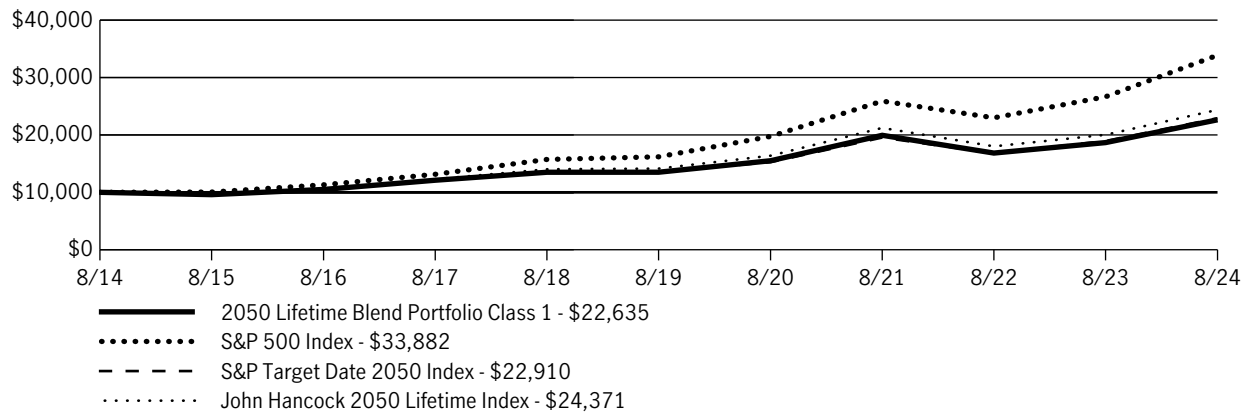
Defensive equities | This segment of the fund, while positive in absolute terms, didn't keep pace with the higher-risk areas of the stock market.

The views expressed in this report are exclusively those of the portfolio management team at Manulife Investment Management (US) LLC, and are subject to change. They are not meant as investment advice.

Fund Performance

The following graph compares the initial and subsequent account values at the end of each of the most recently completed 10 fiscal years of the fund (or for the life of the fund, if shorter). It assumes a \$10,000 initial investment in the fund and in an appropriate, broad-based securities market index for the same period.

GROWTH OF \$10,000



| AVERAGE ANNUAL TOTAL RETURN | 1 Year | 5 Years | 10 Years |
|---|--------|---------|----------|
| 2050 Lifetime Blend Portfolio (Class 1/JRLWX) | 21.28% | 10.89% | 8.51% |
| S&P 500 Index | 27.14% | 15.92% | 12.98% |
| S&P Target Date 2050 Index | 20.97% | 11.06% | 8.64% |
| John Hancock 2050 Lifetime Index | 21.69% | 11.51% | 9.32% |

The Fund has designated S&P 500 Index as its broad-based securities market index in accordance with the revised definition for such an index.

Performance figures assume all distributions have been reinvested and reflect the beneficial effect of any expense reductions. Past performance does not guarantee future results. The return and principal value of an investment will fluctuate so that shares, when redeemed, may be worth more or less than their original cost. Due to market volatility and other factors, the fund's current performance may be higher or lower than the performance shown. The graph and table do not reflect the deduction of taxes that a shareholder would pay on fund distributions or redemption of fund shares. It is not possible to invest directly in an index.

Fund Statistics

| | |
|------------------------------------|---------------|
| Fund net assets | \$551,946,880 |
| Total number of portfolio holdings | 24 |
| Total advisory fees paid (net) | \$0 |
| Portfolio turnover rate | 20% |

Graphical Representation of Holdings

The table below shows the investment makeup of the fund, representing percentage of the total net assets of the fund.

ASSET ALLOCATION

| | |
|---|--------------|
| Affiliated investment companies | 57.4% |
| Equity | 55.1% |
| Fixed income | 2.3% |
| Unaffiliated investment companies | 41.3% |
| Equity | 41.3% |
| U.S. Government and Agency obligations | 1.3% |
| U.S. Government | 1.3% |

Holdings may not have been held by the fund for the entire period and are subject to change without notice. Portfolio composition is subject to review in accordance with the fund's investment strategy and may vary in the future. Current and future portfolio holdings are subject to risk and may change at any time.

The fund is subject to various risks as described in the fund's prospectuses. For more information, please refer to the "Principal risks" section of the prospectuses.

Availability of Additional Information



At jhinvestments.com/underlying-funds, you can find additional information about the fund, including the fund's:

- Prospectus
- Financial information
- Fund holdings
- Proxy voting information

This report is for the information of the shareholders in this fund. It is not authorized for distribution to prospective investors unless preceded or accompanied by the fund's prospectus.

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