



COMMONWEALTH OF MASSACHUSETTS OPTIONAL RETIREMENT PROGRAM

Investment Performance as of 12/31/2024

The performance data quoted represents past performance, and is no guarantee of future results. Your returns and the principal value of your investment will fluctuate so that your mutual fund shares and annuity account accumulation units, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance quoted. For performance current to the most recent month-end, call 800-842-2252 or visit TIAA.org/planinvestmentoptions and enter your plan ID. Performance may reflect waivers or reimbursements of certain expenses. Absent these waivers or reimbursement arrangements, performance results would have been lower. Since Inception performance shown is cumulative for periods less than one year.

| Equities - Variable Annuity | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|-----------------------|----------------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| CREF Stock Account (R4) (QCSTFX) ^{1,2,3} | Aggressive Allocation | 09/16/22 07/31/52 | -0.94% | 16.78% | 16.78% | 5.30% | 10.36% | 9.68% | 0.10% | 0.10% | - | Round Trip: If a round trip is made within 60 calendar days, exchanges into the same account will be restricted for 90 calendar days. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Morningstar Aggressive Target Risk TR USD | | | -2.34% | 12.50% | 12.50% | 3.82% | 8.25% | 8.55% | | | | |
| Benchmark: CREF Stock Account Composite Index | | | -0.99% | 17.11% | 17.11% | 5.43% | 10.63% | 10.12% | | | | |

Investment products, insurance and annuity products: are not FDIC insured, are not bank guaranteed, are not deposits, are not insured by any federal government agency, are not a condition to any banking service or activity, and may lose value.

| Equities - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|--|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Allspring Special Mid Cap Value Fund - Class R6 (WFPRX) ^{4,5,6} | Mid-Cap Value | 06/28/13 | -3.72% | 12.06% | 12.06% | 5.47% | 9.33% | 9.28% | 0.70% | 0.70% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell Mid Cap Value TR USD | | | -1.75% | 13.07% | 13.07% | 3.88% | 8.59% | 8.10% | | | | |
| Allspring Special Small Cap Value Fund - Class R6 (ESPRX) ^{4,5,6} | Small Value | 10/31/14 | -1.18% | 6.96% | 6.96% | 3.30% | 7.51% | 8.27% | 0.99% | 0.99% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell 2000 Value TR USD | | | -1.06% | 8.05% | 8.05% | 1.94% | 7.29% | 7.14% | | | | |
| American Beacon Small Cap Value Fund R6 Class (AASRX) ^{4,5,6} | Small Value | 02/28/17 | -0.75% | 7.50% | 7.50% | 5.00% | 9.07% | 7.20% | 0.77% | 0.77% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. |
| Benchmark: Russell 2000 Value TR USD | | | -1.06% | 8.05% | 8.05% | 1.94% | 7.29% | 6.38% | | | | |
| Cohen & Steers Real Estate Securities Fund, Inc. Class Institutional (CSDIX) ^{4,7} | Real Estate | 07/15/98 | -8.93% | 6.71% | 6.71% | -3.83% | 4.42% | 6.98% | 0.84% | 0.84% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Credit: 0.032%/quarterly |
| Benchmark: FTSE Nareit All Equity REITs TR USD | | | -8.15% | 4.92% | 4.92% | -4.28% | 3.29% | 5.83% | | | | |
| Harbor Small Cap Growth Fund Retirement Class (HNSGX) ^{4,5,8} | Small Growth | 03/01/16 | -2.84% | 9.46% | 9.46% | -0.10% | 8.69% | 12.70% | 0.80% | 0.80% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. |
| Benchmark: Russell 2000 Growth TR USD | | | 1.70% | 15.15% | 15.15% | 0.21% | 6.86% | 10.63% | | | | |
| John Hancock Funds Disciplined Value Fund Class R6 (JDVWX) ^{4,5} | Large Value | 09/01/11 | -0.95% | 15.54% | 15.54% | 8.00% | 10.79% | 9.17% | 0.61% | 0.61% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. |
| Benchmark: Russell 1000 Value TR USD | | | -1.98% | 14.37% | 14.37% | 5.63% | 8.68% | 8.49% | | | | |
| JPMorgan Equity Income Fund Class R6 (OIEJX) ^{4,5} | Large Value | 01/31/12 | -1.99% | 12.80% | 12.80% | 5.24% | 8.71% | 9.37% | 0.45% | 0.45% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell 1000 TR USD | | | 2.75% | 24.51% | 24.51% | 8.41% | 14.28% | 12.87% | | | | |
| JPMorgan Large Cap Growth Fund Class R6 (JLGMX) ^{4,8,9} | Large Growth | 11/30/10 | 5.32% | 34.17% | 34.17% | 10.63% | 20.27% | 17.87% | 0.50% | 0.44% | 10/31/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. |
| Benchmark: Russell 1000 TR USD | | | 2.75% | 24.51% | 24.51% | 8.41% | 14.28% | 12.87% | | | | |

| Equities - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|----------------------|----------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| MassMutual Small Cap Growth Equity Fund Class I (MSGZX) ^{4,6,8} | Small Growth | 11/15/10 | -0.16% | 15.53% | 15.53% | 0.06% | 9.28% | 10.12% | 0.87% | 0.87% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell 2000 Growth TR USD | | | 1.70% | 15.15% | 15.15% | 0.21% | 6.86% | 8.09% | | | | |
| MFS Growth Fund Class R6 (MFEKX) ^{4,8,9} | Large Growth | 08/26/11 | 4.73% | 31.79% | 31.79% | 7.36% | 15.07% | 15.22% | 0.52% | 0.51% | 03/31/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell 1000 Growth TR USD | | | 7.07% | 33.36% | 33.36% | 10.47% | 18.96% | 16.78% | | | | |
| MFS International Diversification Fund Class R6 (MDIZX) ^{4,9,10} | Foreign Large Blend | 10/02/17 | -7.58% | 6.52% | 6.52% | 0.38% | 4.70% | 5.71% | 0.74% | 0.73% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: MSCI ACWI Ex USA NR USD | | | -7.60% | 5.53% | 5.53% | 0.82% | 4.10% | 4.11% | | | | |
| MFS Mid Cap Growth Fund Class R6 (OTCKX) ^{4,6,8,9} | Mid-Cap Growth | 01/02/13 | 1.49% | 14.79% | 14.79% | 0.00% | 9.17% | 11.60% | 0.67% | 0.66% | 12/31/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Russell 3000 TR USD | | | 2.63% | 23.81% | 23.81% | 8.01% | 13.86% | 12.55% | | | | |
| Vanguard FTSE Social Index Fund Institutional Shares (VFTNX) ^{4,11} | Large Blend | 01/14/03 | 3.60% | 26.01% | 26.01% | 7.97% | 14.55% | 13.48% | 0.12% | 0.12% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Morningstar US Large-Mid Cap TR USD | | | 21.76% | -2.29% | 8.13% | 10.96% | 10.59% | 14.08% | | | | |
| Vanguard Institutional Index Fund Institutional Shares (VINIX) ⁴ | Large Blend | 07/31/90 | 2.40% | 24.97% | 24.97% | 8.90% | 14.49% | 13.07% | 0.04% | 0.04% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: S&P 500 TR USD | | | 2.41% | 25.02% | 25.02% | 8.94% | 14.53% | 13.10% | | | | |
| Vanguard Mid-Cap Index Fund Institutional Shares (VMCIX) ^{4,6} | Mid-Cap Blend | 05/21/98 | 0.45% | 15.23% | 15.23% | 2.81% | 9.86% | 9.56% | 0.04% | 0.04% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: CRSP US Mid Cap TR USD | | | 0.46% | 15.25% | 15.25% | 2.82% | 9.86% | 9.57% | | | | |

| Equities - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Vanguard Small-Cap Index Fund Institutional Shares (VSCIX) ^{4,6} | Small Blend | 07/07/97 | 1.66% | 14.23% | 14.23% | 3.63% | 9.31% | 9.10% | 0.04% | 0.04% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: CRSP US Small Cap TR USD | | | 1.66% | 14.22% | 14.22% | 3.57% | 9.26% | 9.06% | | | | |
| Vanguard Total International Stock Index Fund Institutional Shares (VTSNX) ^{4,10,11} | Foreign Large Blend | 11/29/10 | -7.40% | 5.18% | 5.18% | 0.69% | 4.31% | 5.09% | 0.09% | 0.09% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: MSCI ACWI Ex USA NR USD | | | -7.60% | 5.53% | 5.53% | 0.82% | 4.10% | 4.80% | | | | |

| Real Estate - Variable Annuity | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|----------------------|----------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|--|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| TIAA Real Estate Account (QREARX) ^{2,12,13} | Miscellaneous Sector | 10/02/95 | 0.68% | -4.12% | -4.12% | -3.59% | 0.93% | 3.24% | 1.02% | 1.02% | - | Transfers out: Limit 1 per quarter. Limitations may apply to any transaction resulting in a balance > \$150,000. Pln Svcs Credit: 0.172%/quarterly |

| Fixed Income - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|-----------------------------|----------------|---------------|-------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| JPMorgan Core Plus Bond Fund Class R6 (JCPUX) ^{4,9} | Intermediate Core-Plus Bond | 02/22/05 | -2.82% | 3.00% | 3.00% | -1.50% | 0.59% | 2.04% | 0.39% | 0.38% | 06/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Bloomberg US Aggregate Bond TR USD | | | -3.06% | 1.25% | 1.25% | -2.41% | -0.33% | 1.35% | | | | |

| Fixed Income - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|--------------------------|----------------|---------------|-------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|--|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| PGIM High Yield Fund- Class R6 (PHYQX) ^{4,11,14} | High Yield | 10/31/11 | -0.14% | 8.46% | 8.46% | 2.52% | 3.93% | 5.38% | 0.38% | 0.38% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: ICE BofA US High Yield TR USD | | | 0.16% | 8.20% | 8.20% | 2.91% | 4.04% | 5.08% | | | | |
| Vanguard Inflation-Protected Securities Fund Institutional Shares (VIPIX) ⁴ | Inflation-Protected Bond | 12/12/03 | -3.02% | 1.86% | 1.86% | -2.32% | 1.81% | 2.14% | 0.07% | 0.07% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Bloomberg US Treasury US TIPS TR USD | | | -2.88% | 1.84% | 1.84% | -2.30% | 1.87% | 2.24% | | | | |
| Vanguard Total Bond Market Index Fund Institutional Shares (VBTIX) ⁴ | Intermediate Core Bond | 09/18/95 | -3.04% | 1.25% | 1.25% | -2.40% | -0.30% | 1.34% | 0.04% | 0.04% | - | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Bloomberg US Aggregate Float Adjusted TR USD | | | -2.99% | 1.33% | 1.33% | -2.39% | -0.27% | 1.39% | | | | |

| Multi Asset - Variable Annuity | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| CREF Social Choice Account (R4) (QSCCFX) ^{1,2,3} | Moderate Allocation | 09/16/22 03/01/90 | -2.83% | 9.04% | 9.04% | 1.97% | 6.28% | 6.67% | 0.07% | 0.07% | - | Round Trip: If a round trip is made within 60 calendar days, exchanges into the same account will be restricted for 90 calendar days. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Morningstar Moderate Target Risk TR USD | | | -2.86% | 8.27% | 8.27% | 1.47% | 5.37% | 6.05% | | | | |
| Benchmark: CREF Social Choice Account Composite Index | | | -1.70% | 10.85% | 10.85% | 2.82% | 6.75% | 6.91% | | | | |

| Multi Asset - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|--|--------------------------|----------------------|---------------|-------|------------------------------|--------|--------|-----------------------------|---|-------|-----------------------|---|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Nuveen Lifecycle 2010 Fund (R6) (TCTIX) ^{9,15,16,17} | Target-Date 2000-2010 | 01/17/07 10/15/04 | -1.38% | 7.59% | 7.59% | 1.51% | 4.46% | 5.19% | 0.52% | 0.37% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2010 Fund Composite Index | | | -1.74% | 7.46% | 7.46% | 1.30% | 4.56% | 5.15% | | | | |
| Benchmark: S&P Target Date 2010 TR USD | | | -2.10% | 6.74% | 6.74% | 1.55% | 4.17% | 4.66% | | | | |
| Nuveen Lifecycle 2015 Fund (R6) (TCNIX) ^{9,15,16,17} | Target-Date 2015 | 01/17/07 10/15/04 | -1.47% | 7.86% | 7.86% | 1.45% | 4.69% | 5.48% | 0.53% | 0.38% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2015 Fund Composite Index | | | -1.78% | 8.09% | 8.09% | 1.52% | 4.99% | 5.56% | | | | |
| Benchmark: S&P Target Date 2015 TR USD | | | -1.96% | 7.25% | 7.25% | 1.62% | 4.56% | 5.11% | | | | |
| Nuveen Lifecycle 2020 Fund (R6) (TCWIX) ^{9,15,16,17} | Target-Date 2020 | 01/17/07 10/15/04 | -1.50% | 8.33% | 8.33% | 1.63% | 5.05% | 5.87% | 0.53% | 0.39% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2020 Fund Composite Index | | | -1.77% | 8.77% | 8.77% | 1.78% | 5.43% | 6.01% | | | | |
| Benchmark: S&P Target Date 2020 TR USD | | | -1.91% | 8.09% | 8.09% | 1.91% | 4.88% | 5.52% | | | | |
| Nuveen Lifecycle 2025 Fund (R6) (TCYIX) ^{9,15,16,17} | Target-Date 2025 | 01/17/07 10/15/04 | -1.49% | 9.06% | 9.06% | 1.88% | 5.67% | 6.43% | 0.55% | 0.40% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2025 Fund Composite Index | | | -1.74% | 9.57% | 9.57% | 2.09% | 6.06% | 6.60% | | | | |
| Benchmark: S&P Target Date 2025 TR USD | | | -2.00% | 8.44% | 8.44% | 2.10% | 5.55% | 6.14% | | | | |

| Multi Asset - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------------|---------------|--------|------------------------------|--------|--------|-----------------------------|--|-----------------|-----------------------|--|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Nuveen Lifecycle 2030 Fund (R6) (TCRIX) ^{9,15,16,17} | Target-Date 2030 | 01/17/07 10/15/04 | -1.46% | 10.16% | 10.16% | 2.31% | 6.41% | 7.04% | 0.57% \$5.70 | 0.41% \$4.10 | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2030 Fund Composite Index | | | -1.67% | 10.74% | 10.74% | 2.58% | 6.81% | 7.26% | | | | |
| Benchmark: S&P Target Date 2030 TR USD | | | -1.94% | 9.90% | 9.90% | 2.77% | 6.46% | 6.87% | | | | |
| Nuveen Lifecycle 2035 Fund (R6) (TCIIX) ^{9,15,16,17} | Target-Date 2035 | 01/17/07 10/15/04 | -1.51% | 11.36% | 11.36% | 2.88% | 7.22% | 7.67% | 0.60% \$6.00 | 0.42% \$4.20 | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2035 Fund Composite Index | | | -1.58% | 12.07% | 12.07% | 3.24% | 7.68% | 7.95% | | | | |
| Benchmark: S&P Target Date 2035 TR USD | | | -1.93% | 11.38% | 11.38% | 3.37% | 7.44% | 7.60% | | | | |
| Nuveen Lifecycle 2040 Fund (R6) (TCOIX) ^{9,15,16,17} | Target-Date 2040 | 01/17/07 10/15/04 | -1.40% | 12.76% | 12.76% | 3.61% | 8.17% | 8.34% | 0.63% \$6.30 | 0.43% \$4.30 | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2040 Fund Composite Index | | | -1.42% | 13.78% | 13.78% | 4.10% | 8.67% | 8.69% | | | | |
| Benchmark: S&P Target Date 2040 TR USD | | | -1.77% | 12.87% | 12.87% | 4.04% | 8.27% | 8.19% | | | | |
| Nuveen Lifecycle 2045 Fund (R6) (TTFIX) ^{9,16} | Target-Date 2045 | 11/30/07 | -1.34% | 13.80% | 13.80% | 3.98% | 8.86% | 8.81% | 0.65% \$6.50 | 0.44% \$4.40 | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2045 Fund Composite Index | | | -1.27% | 14.94% | 14.94% | 4.52% | 9.42% | 9.22% | | | | |
| Benchmark: S&P Target Date 2045 TR USD | | | -1.89% | 13.58% | 13.58% | 4.43% | 8.75% | 8.54% | | | | |

| Multi Asset - Mutual Fund | Morningstar Category | Inception Date | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------|---------------|--------|------------------------------|--------|--------|-----------------------------|---|-------|-----------------------|--|
| | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Nuveen Lifecycle 2050 Fund (R6) (TFTIX) ^{9,16} | Target-Date 2050 | 11/30/07 | -1.34% | 14.27% | 14.27% | 4.14% | 9.09% | 8.97% | 0.66% | 0.45% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2050 Fund Composite Index | | | -1.19% | 15.49% | 15.49% | 4.70% | 9.67% | 9.39% | | | | |
| Benchmark: S&P Target Date 2050 TR USD | | | -1.67% | 14.30% | 14.30% | 4.72% | 9.06% | 8.77% | | | | |
| Nuveen Lifecycle 2055 Fund (R6) (TTRIX) ^{9,16} | Target-Date 2055 | 04/29/11 | -1.29% | 14.46% | 14.46% | 4.23% | 9.19% | 9.06% | 0.67% | 0.45% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2055 Fund Composite Index | | | -1.17% | 15.70% | 15.70% | 4.79% | 9.79% | 9.51% | | | | |
| Benchmark: S&P Target Date 2055 TR USD | | | -1.75% | 14.32% | 14.32% | 4.74% | 9.11% | 8.84% | | | | |
| Nuveen Lifecycle 2060 Fund (R6) (TLXNX) ^{9,16} | Target-Date 2060 | 09/26/14 | -1.31% | 14.56% | 14.56% | 4.29% | 9.31% | 9.16% | 0.69% | 0.45% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2060 Fund Composite Index | | | -1.14% | 15.91% | 15.91% | 4.89% | 9.92% | 9.62% | | | | |
| Benchmark: S&P Target Date 2060 TR USD | | | -1.70% | 14.44% | 14.44% | 4.80% | 9.14% | 8.91% | | | | |
| Nuveen Lifecycle 2065 Fund (R6) (TSFIX) ^{9,16} | Target-Date 2065+ | 09/30/20 | -1.30% | 14.71% | 14.71% | 4.42% | - | 10.52% | 0.96% | 0.45% | 09/30/25 | Round Trip: You cannot exchange into the fund within 30 calendar days of exchanging out of the fund. Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: Lifecycle 2065 Fund Composite Index | | | -1.12% | 16.11% | 16.11% | 4.98% | - | 11.28% | | | | |
| Benchmark: S&P Target Date 2065+ TR USD | | | -1.59% | 14.83% | 14.83% | 4.97% | - | 11.12% | | | | |

| Money Market - Mutual Fund | Morningstar Category | Inception Date | 7-Day Yield** | Total Returns | | Average Annual Total Returns | | | | Total Annual Operating Expenses (%/Per \$1000) | | Fee Waiver Expiration | Shareholder Fees & Restrictions* |
|---|----------------------|----------------|---------------|---------------|-------|------------------------------|--------|--------|--------------------------|--|-------|-----------------------|----------------------------------|
| | | | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year/ Since Inception | Gross | Net | | |
| Vanguard Federal Money Market Fund Investor Shares (VMFX) ^{4,18} | Money Market-Taxable | 07/13/81 | 4.39% | 1.17% | 5.23% | 5.23% | 3.94% | 2.44% | 1.72% | 0.11% | 0.11% | - | Pln Svcs Fee: 0.068%/quarterly |
| Benchmark: FTSE Treasury Bill 3 Month USD | | | | 1.23% | 5.45% | 5.45% | 4.05% | 2.54% | 1.79% | | | | |

You could lose money by investing in a money market fund. Although a money market fund seeks to preserve the value of your investment at \$1.00 per share, it cannot guarantee it will do so. An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. A money market fund's sponsor has no legal obligation to provide support to a money market fund, and you should not expect that the sponsor will provide financial support to a money market fund at any time.

**The current yield more closely reflects the earnings of this investment choice.

| Guaranteed - Fixed Annuity | Inception Date | Total Returns | | Average Annual Total Returns | | | | Current Rates | | |
|--|----------------|---------------|-------|------------------------------|--------|--------|---------|-----------------|-------|-------------------------|
| | | 3 Month | YTD | 1 Year | 3 Year | 5 Year | 10 Year | Since Inception | Rate | Guaranteed Minimum Rate |
| TIAA Traditional Annuity - Retirement Choice ^{19,20,21} | 08/01/05 | 1.14% | 4.66% | 4.66% | 4.54% | 4.23% | 4.20% | 4.38% | 5.25% | 3.00% |

Additional Information:

An annual plan servicing credit of 0.082% is credited on a quarterly basis.

The current rate shown applies to premiums remitted during the month of January 2025 and will be credited through 2/28/2025. This rate is subject to change in subsequent months. Up-to-date rate of return information is available on your plan-specific website noted above or at 800-842-2733. TIAA Traditional guarantees your principal and a minimum annual interest rate. The current guaranteed minimum interest rate for premiums remitted in 2024 is 3.00%, and is effective through 2033. The account also offers the opportunity for additional amounts in excess of the minimum interest rate. When declared, additional amounts remain in effect for the twelve-month period that begins each March 1 for accumulating annuities and January 1 for payout annuities. Additional amounts are not guaranteed for the future years. All guarantees are subject to TIAA's claims paying ability. TIAA Traditional is designed primarily to help meet your long-term retirement income needs; it is not a short-term savings vehicle. Therefore, some contracts require that benefits are paid in installments over time and/or may impose surrender charges on certain withdrawals. TIAA has rewarded participants who save in contracts where benefits are paid in installments over time instead of in an immediate lump-sum by crediting higher interest rates, typically 0.50% to 0.75% higher. Higher rates will lead to higher account balances and more retirement income for you. For Retirement Choice (RC) contracts, and subject to the terms of your employer's plan, lump-sum withdrawals are available from the TIAA Traditional account only within 120 days after termination of employment and are subject to a 2.5% surrender charge. All other withdrawals and transfers from the account must be paid in 84 monthly installments (7 years). If the Contractholder elects to remove TIAA Traditional, the contract's entire TIAA Traditional accumulation will be paid out in 60 monthly installments without any surrender charge.

A Note About Risk

Equity risk refers to the risk of loss due to the market price of shares falling. Equity funds and variable annuity accounts generally carry a higher degree of risk than fixed income funds and accounts. Fixed income funds and variable annuity accounts are not guaranteed and are subject to interest rate, inflation and credit risks.

Variable annuity accounts that invest in real estate securities are subject to various risks, including fluctuation in property values, higher expenses or lower income than expected, and potential environmental problems and liability.

Guaranteed investments offer a guaranteed rate of return but such guarantees are subject to the claims-paying ability of the issuing insurance company.

More detailed information on risks applicable to a particular investment option can be found in the prospectus or other product literature.

Fees and Expenses

*Some Plans may allocate plan costs to participants to offset the cost of recordkeeping and other plan services. When the Plan allocates these costs at the investment-level there may be a plan services fee or credit displayed in the "Shareholder fees & restrictions" column. If the costs are allocated at the plan-level (regardless of investment) it is not displayed on the Quarterly Investment Update.

Fee and expense information for the variable return investment options include the Total Annual Operating Expenses expressed as a percentage and a dollar amount based upon a \$1,000 accumulation both as net (after) and gross (before) of expenses. Total Annual Operating Expenses is a measure of what it costs to operate an investment, expressed as a percentage of its assets, as a dollar amount or in basis points. These are costs the investor pays through a reduction in the investment's rate of return. Expense information shown is based on the most recent information available, but may not reflect all updates and may differ slightly from the prospectus due to rounding. Please consult the most recent prospectus or offering document for more detailed information.

For more information on the impact of fees and expenses associated with your plan, please visit TIAA.org/fees. Fees are only one of many factors to consider when making an investment decision.

About the Benchmark

A benchmark provides an investor with a point of reference to evaluate an investment's performance. One common type of benchmark used to compare investment performance is called an index. Indexes are unmanaged portfolios of securities designed to track the performance of a particular segment of the market. For example, a large cap stock fund or account will usually be compared to an index that tracks a portfolio of large-cap stocks. Conversely, a bond fund or account is typically compared to an index that tracks a portfolio of bonds that is comparable to the fund or account's portfolio in terms of credit quality, maturity and liquidity. Each mutual fund or account shown in the table includes performance information for an index that the advisor determined provides a fair comparison of the fund or account's investment performance. Indexes are for comparison purposes only. You cannot invest directly in any index. Index returns do not reflect a deduction for fees or expenses.

Data Providers

Unless otherwise noted, data on nonproprietary investment products, including performance, Morningstar Category and expenses, is provided by Morningstar, Inc. All other data provided by Teachers Insurance and Annuity Association of America - College Retirement Equities Fund. Benchmark performance shown across proprietary and nonproprietary funds/accounts is provided by TIAA with the exception of Since Inception periods calculated using a nonproprietary fund's inception date. TIAA reserves the rights to all proprietary data herein, and is not responsible for any damages or losses arising from any use of this information.

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The Morningstar Category classifies a fund based on its investment style as measured by underlying portfolio holdings (portfolio statistics and compositions over the past three years). If the fund is new

and has no portfolio, Morningstar estimates where it will fall before assigning a more permanent category. When necessary, Morningstar may change a category assignment based on current information.

Important Information

1 Total annual expense deductions, which include investment advisory, administrative, and distribution (12b-1) expenses, and mortality and expense risk charges, are estimated each year based on projected expense and asset levels. Differences between actual expenses and the estimate are adjusted quarterly and are reflected in current investment results. Historically, adjustments have been small.

2 The Account's total annual expense deduction appears in the Account's prospectus, and may be different than that shown herein due to rounding. Please refer to the prospectus for further details.

3 The performance shown for Classes R1, R2, and R4 that is prior to their respective inception dates is based on the performance of the Accounts' Class R3. The performance for Classes R1 and R2 for periods prior to their inception has not been restated to reflect the current expenses of Classes R1 and R2, which may be higher or lower than Class R3 for the same period. The performance for Class R4 for the periods prior to its inception has not been restated to reflect the lower expenses of Class R4. Class R3 is now considered the oldest share class for CREF, previously it was R1.

4 Accumulations in funds not managed by TIAA may be subject to administrative charges. These charges are subject to change. Please review current documents related to your plan.

5 Value stocks may perform differently from the market as a whole and may be undervalued by the market for a long period of time.

6 Securities of smaller companies may be more volatile than those of larger ones, and they are also often less liquid than those of larger companies because there is a limited market for them.

7 Funds that focus their investments in real estate are subject to the risks associated with real estate ownership, including fluctuations in property values, higher expenses or lower income than expected, and potential environmental problems and liability.

8 Due to their relatively high valuations which are generally a function of expected earnings growth, growth stocks will be more volatile than value stocks and such earnings growth may not occur or be sustained.

9 The net expense ratio reflects a contractual arrangement that has the effect of reducing or limiting the fund's expenses. Without such an arrangement, currently or in the past, returns would have been lower. The arrangement will remain in effect until terminated. Please see the prospectus for details.

10 Securities of foreign issuers may lose value because of erratic market conditions, economic and political instability or fluctuations in currency exchange rates, which may be magnified in emerging markets.

11 The index shown is for comparative purposes only, and may not match other websites or publications.

12 Funds that focus their investments in a specific sector (such as health care or technology) are more vulnerable to developments that affect those industries or sectors than more broadly diversified funds.

13 The total annual expense deduction, which includes investment management, administration, and distribution expenses, mortality and expense risk charges, and the liquidity guarantee, is estimated each year based on projected expense and asset levels. Differences between actual expenses and the estimate are adjusted quarterly and are reflected in current investment results. Historically, adjustments have been small.

14 Investments in high-yield bonds (commonly known as junk bonds) are subject to greater risk of loss of principal and interest and an increased risk of default in comparison to higher-rated bonds.

15 When more than one inception date is shown, the performance displayed for periods prior to the investment's inception date is hypothetical. The second inception date is that of the fund/account to which such performance is based. Please refer to the investment's performance disclosure for more details.

16 As Target Retirement Date Funds are actively managed, their asset allocations are subject to change and may vary from those indicated. They invest in many underlying funds and are exposed to the risks of different areas of the market. Please note that, as with all mutual funds, the principal value of a Target Retirement Date Fund is not guaranteed. The higher a fund's allocation to stocks, the greater the risk. After the target date has been reached, some of these funds may be merged into a fund with a more stable asset allocation. In addition to the fund level expenses these funds are also subject to the expenses of their underlying investments. Please consult the prospectus for more complete information.

17 Performance shown for the Since Inception period and prior to the inception of the Institutional Class is based on the performance of the fund's Retirement Class. Performance has not been restated to reflect the lower expenses of the Institutional Class. If the expense differential had been reflected, performance for these periods would have been higher.

18 Closed to new investors.

19 The TIAA Traditional Annuity guarantees principal and a specified interest rate (based on TIAA's claims paying ability). It also offers the potential for greater growth through additional amounts, which may be declared on a year-by-year basis by the TIAA Board of Trustees. These additional amounts, when declared, remain in effect for the "declaration year" which begins each March 1. Additional amounts are not guaranteed. For more up to date information please visit your employer's microsite or TIAA.org. TIAA Traditional is a guaranteed insurance contract and not an investment for federal securities law purposes.

20 Accumulations are credited with interest based on when contributions and transfers are received, and your performance will reflect your pattern of contributions. The returns shown in the table reasonably represent what an individual making level monthly premiums would have historically earned over the time periods. Returns for different time periods are calculated in two steps: monthly performance returns are calculated from an accumulation created by a series of level monthly premiums over the prior 10 years (or the inception date of the product if later), and those monthly returns are linked together to determine historical performance for each of the return periods shown.

21 The Current Rates, Minimum Guaranteed Rates and Fees (if applicable) shown for guaranteed annuities are the rates in effect as of the first day of the month following quarter end. Depending upon the contract, these may apply to new money only or to both new money and existing accumulations. See your annuity contract or certificate for details.



BUILT TO PERFORM.

CREATED TO SERVE.

Mutual funds are offered through your plan sponsor's retirement plan, which is recordkept by TIAA. Funds are offered at that day's net asset value (NAV), and the performance is displayed accordingly. Performance at NAV does not reflect sales charges, which are waived through your retirement plan. If included, the sales charges would have reduced the performance as quoted.

Before making your investment choices and completing your enrollment form, you should consider the investment objectives, risks, charges and expenses carefully. Please call 877-518-9161 for paper copies of the product and fund prospectuses that contain this and other information. Please read the prospectuses carefully before investing.

Unless otherwise noted, annuity contracts and certificates are issued by Teachers Insurance and Annuity Association of America (TIAA) and College Retirement Equities Fund (CREF), New York, NY. TIAA-CREF Individual & Institutional Services, LLC and Nuveen Securities, LLC, Members FINRA and SIPC, distribute securities products.

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