MainStay VP CBRE Global Infrastructure Portfolio
(formerly known as MainStay VP Cushing® Renaissance Advantage Portfolio)

Before you invest, you may want to review the Portfolio's Prospectus, which contains more information about the Portfolio and its risks. You can find the Portfolio's Prospectus, reports to shareholders and other information about the Portfolio by going online to nylinvestments.com/vpdocuments, by calling 800-598-2019 or by sending an e-mail to MainStayShareholderServices@nylin.com. The Portfolio’s Prospectus and Statement of Additional Information, both dated May 1, 2020, as may be amended from time to time, are incorporated by reference into this Summary Prospectus.

Beginning on January 1, 2021, paper copies of a Portfolio’s annual and semi-annual shareholder reports will no longer be sent by mail, unless you specifically request paper copies of the reports from the insurance company that offers your policy. Instead, the reports will be made available online, and you will be notified by mail and provided with a website address to access the report. Instructions for requesting paper copies will be provided by your insurance company.

If you already elected to receive shareholder reports electronically, you will not be affected by this change and you need not take any action. At any time, you may elect to receive reports and other communications from the insurance company electronically by following the instructions provided by the insurance company.

You may elect to receive all future shareholder reports in paper form free of charge. You can inform the insurance company that you wish to receive paper copies of reports by following the instructions provided by the insurance company. Your election to receive reports in paper form will apply to all portfolio companies available under your contract.

Investment Objective
The Portfolio seeks total return.

Fees and Expenses of the Portfolio
The table below describes the fees and expenses that you may pay if you buy and hold shares of the Portfolio. The table does not include any separate account or policy fees or charges imposed under the variable annuity policies and variable universal life insurance policies for which the Portfolio is an investment option. If they were included, your costs would be higher. Investors should consult the applicable variable annuity policy or variable universal life insurance policy prospectus for more information.

<table>
<thead>
<tr>
<th>Annual Portfolio Operating Expenses (fees paid directly from your investment)</th>
<th>Initial Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Fees (as an annual percentage of the Portfolio’s average daily net assets)</td>
<td>0.85%</td>
</tr>
<tr>
<td>Distribution and Service (12b-1) Fees</td>
<td>None</td>
</tr>
<tr>
<td>Other Expenses</td>
<td>0.43%</td>
</tr>
<tr>
<td><strong>Total Annual Portfolio Operating Expenses</strong></td>
<td><strong>1.28%</strong></td>
</tr>
<tr>
<td>Waiver / Reimbursement</td>
<td>(0.33)%</td>
</tr>
<tr>
<td><strong>Total Annual Portfolio Operating Expenses After Waivers / Reimbursements</strong></td>
<td><strong>0.95%</strong></td>
</tr>
</tbody>
</table>

1. Restated to reflect current management fees.
2. Restated based on amounts expected to be incurred during the current fiscal year.
3. New York Life Investment Management LLC (“New York Life Investments”) has contractually agreed to waive fees and/or reimburse expenses so that Total Annual Portfolio Operating Expenses (excluding taxes, interest, litigation, extraordinary expenses, brokerage and other transaction expenses relating to the purchase or sale of portfolio investments, and acquired (underlying) portfolio/fund fees and expenses) of Initial Class shares do not exceed 0.95% of the Portfolio’s average daily net assets. This agreement will remain in effect until May 1, 2021, and shall renew automatically for one-year terms unless New York Life Investments provides written notice of termination prior to the start of the next term or upon approval of the Board of Trustees of the Portfolio.

Example
The Example is intended to help you compare the cost of investing in the Portfolio with the cost of investing in other mutual funds. The Example does not include any separate account or policy fees or charges imposed under the variable annuity policies and variable universal life insurance policies for which the Portfolio is an investment option. If they were included, your costs would be higher. The Example assumes that you invest $10,000 in the Portfolio for the time periods indicated whether or not you redeem all of your shares at the end of those periods. The Example also assumes that your investment has a 5% return each year and that the Portfolio’s operating expenses remain the same. The Example reflects the contractual fee waiver and/or expense reimbursement arrangement, if applicable, for the current duration of the arrangement only. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

<table>
<thead>
<tr>
<th>Initial Class</th>
<th>1 Year</th>
<th>3 Years</th>
<th>5 Years</th>
<th>10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ 97</td>
<td>$ 373</td>
<td>$ 671</td>
<td>$ 1,516</td>
</tr>
</tbody>
</table>
The Subadvisor may sell securities for a variety of reasons, such as to secure gains, limit losses, or redeploy assets into opportunities believed to be more stable and growth potential of cash flows and dividends, the location of the company's assets, the regulatory environment in which the company operates relative to their peers. The Subadvisor's in-house valuation process examines several factors, including the company's management and strategy, the sectors. The Subadvisor then uses an in-house valuation process to identify infrastructure companies whose risk-adjusted returns it believes are compelling geographic regions in which to invest, and determines the degree of representation in the portfolio of such sectors and regions, through a systematic geographic region and infrastructure sector allocation with bottom-up individual stock selection. The Subadvisor first selects infrastructure sectors in certain countries outside of the United States.

The principal risks of investing in the Portfolio are summarized below.

### Principal Investment Strategies

Under normal circumstances, the Portfolio invests at least 80% of its assets (net assets plus borrowings for investment purposes) in securities issued by infrastructure companies. The Portfolio expects to invest primarily in equity securities of companies located in a number of different countries, including the United States.

Under normal market conditions, the Portfolio will invest more than 25% of the value of its total assets at the time of purchase in the securities of issuers conducting their business activities in the infrastructure group of industries. The Portfolio’s Subadvisor, CBRE Clarion Securities LLC, defines an infrastructure company as a company that derives at least 50% of its revenues or profits from, or devotes at least 50% of its assets to, the ownership, management, development, construction, renovation, enhancement, or operation of infrastructure assets or the provision of services to companies engaged in such activities. Examples of infrastructure assets include transportation assets (such as toll roads, bridges, railroads, airports, and seaports), utility assets (such as electric transmission and distribution lines, gas distribution pipelines, water pipelines and treatment facilities, and sewer facilities), energy assets (such as oil and gas pipelines, storage facilities, and other facilities used for gathering, processing, or transporting hydrocarbon products as well as contracted renewable power assets), and communications assets (such as communications towers, data centers, fiber networks, and satellites).

Under normal circumstances, the Portfolio invests primarily in common stock, but may also invest in other equity securities including preferred stocks, convertible securities, rights or warrants to buy common stocks, and depositary receipts with characteristics similar to common stock. The Portfolio may also invest up to 25% of its net assets in master limited partnerships.

The Portfolio may invest up to 30% of its assets in securities of companies located or doing business in emerging markets. The Portfolio’s investments may be denominated in U.S. dollars, non-U.S. currencies, or multinational currency units. The Portfolio may hedge its currency exposure to securities denominated in non-U.S. currencies. The Portfolio may invest in securities of companies of any market size.

The Portfolio may invest in other investment companies, including exchange-traded funds.

Under normal market conditions, the Portfolio will invest a significant amount of its net assets (at least 40%, unless the Subadvisor deems market conditions to be unfavorable, in which case the Portfolio will invest at least 30%) in foreign securities. Generally, foreign securities are issued by companies organized outside the United States or that trade primarily in non-U.S. securities markets. The Portfolio will normally invest in companies located in at least three countries outside of the United States.

### Investment Process:

The Subadvisor uses a multi-step investment process for constructing the Portfolio’s investment portfolio that combines top-down geographic region and infrastructure sector allocation with bottom-up individual stock selection. The Subadvisor first selects infrastructure sectors in certain geographic regions in which to invest, and determines the degree of representation in the portfolio of such sectors and regions, through a systematic evaluation of the regulatory environment and economic outlook, capital market trends, macroeconomic conditions, and the relative value of infrastructure sectors. The Subadvisor then uses an in-house valuation process to identify infrastructure companies whose risk-adjusted returns it believes are compelling relative to their peers. The Subadvisor’s in-house valuation process examines several factors, including the company’s management and strategy, the stability and growth potential of cash flows and dividends, the location of the company’s assets, the regulatory environment in which the company operates and the company’s capital structure.

The Subadvisor may sell securities for a variety of reasons, such as to secure gains, limit losses, or redeploy assets into opportunities believed to be more promising, among others.

### Principal Risks

You can lose money by investing in the Portfolio. An investment in the Portfolio is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency. The investments selected by the Subadvisor may underperform the market in which the Portfolio invests or other investments. The Portfolio may receive large purchase or redemption orders which may have adverse effects on performance if the Portfolio were required to sell securities, invest cash or hold a relatively large amount of cash at times when it would not otherwise do so.

The principal risks of investing in the Portfolio are summarized below.

#### Market Risk:

The value of the Portfolio’s investments may fluctuate because of changes in the markets in which the Portfolio invests, which could cause the Portfolio to underperform other funds with similar investment objectives and strategies. Such changes may be rapid and unpredictable. From time to time, markets may experience periods of stress for potentially prolonged periods that may result in: (i) increased market volatility; (ii) reduced market liquidity; and (iii) increased redemptions of Portfolio shares. Such conditions may add significantly to the risk of volatility in the net asset value of the Portfolio’s shares.

#### Portfolio Management Risk:

The investment strategies, practices and risk analyses used by the Subadvisor may not produce the desired results. In addition, the Portfolio may not achieve its investment objective, including during periods in which the Subadvisor takes temporary positions in response to unusual or adverse market, economic or political conditions, or other unusual or abnormal circumstances.

Investments selected using quantitative methods or based on models that analyze information and data (“quantitative tools”) may perform differently from the market as a whole. The quantitative tool used by the Subadvisor, and the investments selected based on the quantitative tool, may not perform as expected. The quantitative tool may contain certain assumptions in construction and implementation that may adversely affect the Portfolio’s performance. There may also be technical issues with the construction and implementation of quantitative tools (for example, software or other technology malfunctions, or programming inaccuracies). In addition, the Portfolio’s performance will reflect, in part, the Subadvisor’s ability to make active qualitative decisions and timely adjust the quantitative tool, including the tool’s underlying metrics and data.
**Equity Securities Risk:** Investments in common stocks and other equity securities are particularly subject to the risk of changing economic, stock market, industry and company conditions and the risks inherent in the portfolio managers' ability to anticipate such changes that can adversely affect the value of the Portfolio's holdings.

**Infrastructure Investment Risk:** The Portfolio's investments in infrastructure-related securities expose the Portfolio to potential adverse economic, regulatory, political, legal and other changes affecting such investments. Issuers of securities in infrastructure-related businesses are subject to a variety of factors that may adversely affect their business or operations, including high interest costs in connection with capital construction programs, high leverage, costs associated with environmental or other regulations and the effects of economic slowdowns. Rising interest rates could lead to higher financing costs and reduced earnings for infrastructure companies.

**Rights and Warrants Risk:** Rights and warrants may provide a greater potential for profit or loss than an equivalent investment in the underlying securities. Prices of these investments do not necessarily move in tandem with the prices of the underlying securities, and warrants are speculative investments. If a right or warrant is not exercised by the date of its expiration, the Portfolio will lose its entire investment in such right or warrant.

**Preferred Stock Risk:** Preferred stock is subject to many of the risks associated with debt securities, including interest rate risk. In addition, preferred stocks may not pay dividends, an issuer may suspend payment of dividends on preferred stock at any time, and in certain situations an issuer may call or redeem its preferred stock or convert it to common stock. To the extent that the Portfolio invests a substantial portion of its assets in convertible preferred stocks, declining common stock values may also cause the value of the Portfolio's investments to decline.

**Convertible Securities Risk:** Convertible securities are typically subordinate to an issuer's other debt obligations. In part, the total return for a convertible security depends upon the performance of the underlying stock into which it can be converted. Also, issuers of convertible securities are often not as strong financially as those issuing securities with higher credit ratings, are more likely to encounter financial difficulties and typically are more vulnerable to changes in the economy, such as a recession or a sustained period of rising interest rates, which could affect their ability to make interest and principal payments. If an issuer stops making interest and/or principal payments, the Portfolio could lose its entire investment.

**Master Limited Partnership ("MLP") Risk:** MLPs carry many of the risks inherent in investing in a partnership. State law governing partnerships is often less restrictive than state law governing corporations. Accordingly, there may be fewer protections afforded investors in a MLP. Limited partners may also have more limited control and limited rights to vote on matters affecting the MLP.

**Foreign Securities Risk:** Investments in foreign (non-U.S.) securities may be riskier than investments in U.S. securities. Foreign regulatory regimes and securities markets can have less stringent investor protections and disclosure standards and less liquid trading markets than U.S. regulatory regimes and securities markets, and can experience political, social and economic developments that may affect the value of the Portfolio’s investments in foreign securities. Foreign securities may also subject the Portfolio’s investments to changes in currency rates. Changes in the value of foreign currencies may make the return on an investment increase or decrease, unrelated to the quality or performance of the investment itself. The Portfolio may seek to hedge against its exposure to changes in the value of foreign currency, but there is no guarantee that such hedging techniques will be successful in reducing any related foreign currency valuation risks.

**Emerging Markets Risk:** The risks related to investing in foreign securities are generally greater with respect to securities of companies that conduct their business activities in emerging markets or whose securities are traded principally in emerging markets. The risks of investing in emerging markets include the risks of illiquidity, increased price volatility, smaller market capitalizations, less government regulation, less extensive and less frequent accounting, financial and other reporting requirements, loss resulting from problems in share registration and custody, substantial economic and political disruptions and the nationalization of foreign deposits or assets.

**Investments in Other Investment Companies Risk:** The Portfolio’s investment in another investment company may subject the Portfolio indirectly to the risks of that investment company. The Portfolio also will bear its share of the underlying investment company’s fees and expenses, which are in addition to the Portfolio’s own fees and expenses.

**Exchange-Traded Fund ("ETF") Risk:** The risks of owning an ETF generally reflect the risks of owning the securities in which the ETF invests or is designed to track, although lack of liquidity in an ETF could result in it being more volatile than its underlying portfolio securities. Disruptions in the markets for the securities underlying ETFs purchased or sold by the Portfolio could result in losses on the Portfolio's investment in ETFs. ETFs also have management fees and transaction costs that may make them more expensive than owning the underlying securities directly.

**Market Capitalization Risk:** To the extent the Portfolio invests in securities issued by small-, mid-, or large-cap companies, the Portfolio will be subject to the risks associated with securities issued by companies of the applicable market capitalization. Securities of small- and mid-cap companies may be subject to greater price volatility, significantly lower trading volumes, cyclical, static or moderate growth prospects and greater spreads between their bid and ask prices than securities of larger companies. Smaller capitalization companies frequently rely on narrower product lines and niche markets and may be more vulnerable to adverse business or market developments. Securities issued by larger companies may have less growth potential and may not be able to attain the high growth rates of successful smaller companies, especially during strong economic periods. In addition, larger companies may be less capable of responding quickly to competitive challenges and industry changes, including those resulting from improvements in technology, and may suffer sharper price declines as a result of earnings disappointments. There is a risk that the securities issued by companies of a certain market capitalization may underperform the broader market at any given time.

**Small-Cap and Mid-Cap Stock Risk:** The general risks associated with equity securities and liquidity risk are particularly pronounced for stocks of companies with market capitalizations that are small compared to other publicly traded companies. These companies may have limited product lines, markets or financial resources or they may depend on a few key employees. Stocks of small-capitalization and mid-capitalization companies may trade less frequently and in lesser volume than more widely held securities, and their values may fluctuate more sharply than those of other securities. They may also
trade in the over-the-counter market or on a regional exchange, or may otherwise have limited liquidity. Generally, the smaller the company, the greater these risks become.

**Liquidity and Valuation Risk:** The Portfolio’s investments may be illiquid at the time of purchase or liquid at the time of purchase and subsequently become illiquid due to, among other things, events relating to the issuer of the securities, market events, operational issues, economic conditions, investor perceptions or lack of market participants. The lack of an active trading market may make it difficult to sell or obtain an accurate price for a security. If market conditions or issuer specific developments make it difficult to value securities, the Portfolio may value these securities using more subjective methods, such as fair value pricing. In such cases, the value determined for a security could be different than the value realized upon such security’s sale. As a result, an investor could pay more than the market value when buying shares or receive less than the market value when selling shares. This could affect the proceeds of any redemption or the number of shares an investor receives upon purchase.

The Portfolio is subject to the risk that it could not meet redemption requests within the allowable time period without significant dilution of remaining investors’ interests in the Portfolio. To meet redemption requests or to raise cash to pursue other investment opportunities, the Portfolio may be forced to sell securities at an unfavorable time and/or under unfavorable conditions, which may adversely affect the Portfolio.

**Concentration Risk:** Because the Portfolio concentrates its investments in the securities of issuers conducting their business activities in the infrastructure group of industries, the Portfolio may be subject to greater risks and market fluctuations than a fund whose portfolio has exposure to a broader range of industries. The Portfolio is particularly susceptible to financial, economic, political, or market events, as well as government regulation, impacting the infrastructure group of industries, including high interest costs in connection with capital construction programs, high leverage, costs associated with environmental or other regulations and the effects of economic slowdowns. The Portfolio is subject to the risk that: (1) its performance will be closely tied to the performance of those particular industries; (2) its performance will be adversely impacted when such industries experience a downturn; and (3) it will perform poorly during a slump in demand for securities of companies in such industries.

**Past Performance**

The following bar chart and table indicate some of the risks of investing in the Portfolio. The bar chart shows you how the Portfolio’s calendar year performance has varied over time. The average annual total returns table shows how the Portfolio’s average annual total returns compare to those of two broad-based securities market indices. Separate variable annuity and variable universal life insurance account and policy fees and charges are not reflected in the bar chart and table. If they were, returns would be less than those shown. The Portfolio has selected the FTSE Global Core Infrastructure 50/50 Index as its primary benchmark as a replacement for the Standard & Poor’s 500® Index (“S&P 500® Index”) because it believes that the FTSE Global Core Infrastructure 50/50 Index is more reflective of its current investment style. The FTSE Global Core Infrastructure 50/50 Index is a market-capitalization-weighted index of worldwide infrastructure and infrastructure-related securities. Constituent weights are adjusted semi-annually according to three broad industry sectors: 50% utilities, 30% transportation, and a 20% mix of other sectors. The S&P 500® Index is widely regarded as the standard index for measuring large-cap U.S. stock market performance.

Past performance is not necessarily an indication of how the Portfolio will perform in the future. Effective February 28, 2020, the Portfolio replaced its subadvisor and modified its principal investment strategies. The past performance in the bar chart and table prior to that date reflects the Portfolio’s prior subadvisor and principal investment strategies.

**Annual Returns, Initial Class Shares**

(by calendar year 2016-2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>28.77</td>
</tr>
<tr>
<td>2017</td>
<td>7.90</td>
</tr>
<tr>
<td>2018</td>
<td>-27.69</td>
</tr>
<tr>
<td>2019</td>
<td>5.33</td>
</tr>
</tbody>
</table>

**Average Annual Total Returns**

(for the periods ended December 31, 2019)

<table>
<thead>
<tr>
<th></th>
<th>Inception</th>
<th>1 Year</th>
<th>Since Inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Class</td>
<td>5/1/2015</td>
<td>5.33%</td>
<td>-4.44%</td>
</tr>
<tr>
<td>FTSE Global Core Infrastructure 50/50 Index (reflects no deductions for fees, expenses, or taxes)</td>
<td>25.13%</td>
<td>7.89%</td>
<td></td>
</tr>
<tr>
<td>S&amp;P 500® Index (reflects no deductions for fees, expenses, or taxes)</td>
<td>31.49%</td>
<td>12.13%</td>
<td></td>
</tr>
</tbody>
</table>
Management

New York Life Investment Management LLC serves as the Portfolio’s Manager. CBRE Clarion Securities LLC serves as the Subadvisor. The individuals listed below are jointly and primarily responsible for the day-to-day portfolio management of the Portfolio.

How to Purchase and Sell Shares

Shares of the Portfolio are currently offered to certain separate accounts to fund variable annuity policies and variable universal life insurance policies issued by New York Life Insurance and Annuity Corporation (“NYLIAC”) and may also be offered to fund variable annuity policies and variable universal life insurance policies issued by other insurance companies. Shares of the Portfolio are also offered as underlying investments of the MainStay VP Asset Allocation Portfolios (“Asset Allocation Portfolios”) and other variable insurance funds.

Individual investors do not transact directly with the Portfolio to purchase and redeem shares. Rather, investors select underlying investment options offered by the applicable policy. Please refer to the prospectus for the variable annuity policy or variable universal life insurance policy that offers the Portfolio as an underlying investment option for information on the allocation of premium payments and on transfers among the investment divisions of the separate account.

Tax Information

Because the Portfolio’s shareholders are the separate accounts of NYLIAC or other insurance companies through which you purchased your variable annuity policy or variable universal life insurance policy and the Asset Allocation Portfolios and other variable insurance funds, no discussion is included here as to the federal income tax consequences at the shareholder level. For information concerning the federal income tax consequences to variable annuity and variable universal life insurance policy owners, consult the prospectus relating to the appropriate policy.

Compensation to Broker/Dealers and Other Financial Intermediaries

The Portfolio and/or its related companies may pay NYLIAC or other participating insurance companies, broker/dealers, or other financial intermediaries for the sale of Portfolio shares and related services. These payments may create a conflict of interest by influencing the broker/dealer or other financial intermediary or your sales person to recommend the Portfolio over another investment and/or a policy that offers this Portfolio over another investment. Ask your individual salesperson or visit your broker/dealer’s or other financial intermediary firm’s website for more information. For additional information about these payments, please see the section entitled “The Fund and its Management” in the Prospectus.

Subadvisor | Portfolio Managers | Portfolio Service Date
--- | --- | ---
CBRE Clarion Securities LLC | T. Ritson Ferguson, CEO and Co-CIO Real Estate Securities Division | Since February 2020
| Jeremy Anagnos, CIO Infrastructure Division | Since February 2020
| Daniel Foley, CFA | Since February 2020
| Hinds Howard | Since February 2020

*New York Life Investments* is both a service mark, and the common trade name, of certain investment advisors affiliated with New York Life Insurance Company.

To Statutory Prospectus | To Statement of Additional Information