

# Asset / Liability Study



The benefits of ongoing asset/liability work to help limit funded status volatility

## Organization

A utility located in the southwestern United States with approximately \$780 million in pension plan assets supporting over 4,000 employees and retirees. This plan was open and ongoing with an accounting funded status of approximately 70%. Its portfolio consisted of approximately 65% return-seeking and 35% core fixed income with little consideration given to the risk associated with funded status volatility within the investment program.

## The challenges

During the on-boarding process, the fiduciaries for the pension plan wanted a fresh assessment of the amount of risk they were exposed to via the pension plan. The fiduciaries were trying to achieve two goals:

1. Limiting funded status volatility and managing any cash contributions they might need to make to the plan.
2. Develop a clear plan to reduce funded status volatility over time.

### Goal

Reduce funded status volatility, helping to manage volatility of required cash contributions over time.

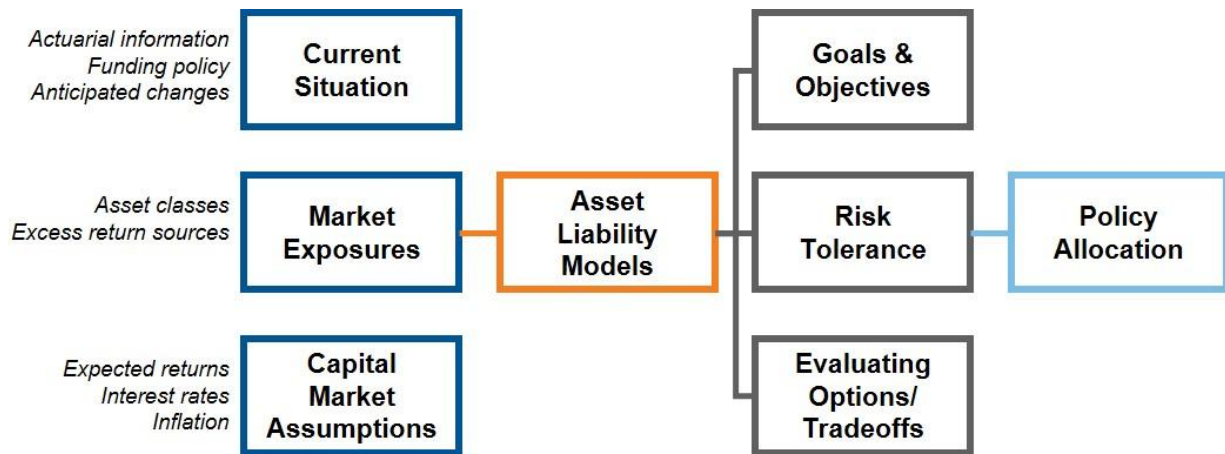
## The solution

To help the plan sponsor assess its current situation and provide a range of options to consider, Russell Investments conducted a full asset/liability study. Our asset/liability modeling is designed to help the plan sponsor understand how assets and liabilities interact over an extended time period. The results provide the plan sponsor with a range of projected outcomes across various strategic asset allocations and Liability Driven Investing (LDI) strategies in many different capital market environments. This analysis is particularly helpful from a strategic long-term perspective. Once the study is complete, we discuss the results of this analysis with the plan sponsor to establish an investment strategy with risk and return characteristics that are aligned with the plan sponsor's specific goals, objectives, contribution requirements, and risk tolerance. Exhibit 1 highlights our asset and liability modeling process.

**Our asset / liability modeling is designed to help the plan sponsor understand how assets and liabilities interact over an extended time period.**



## Exhibit 1: Our asset and liability modeling process



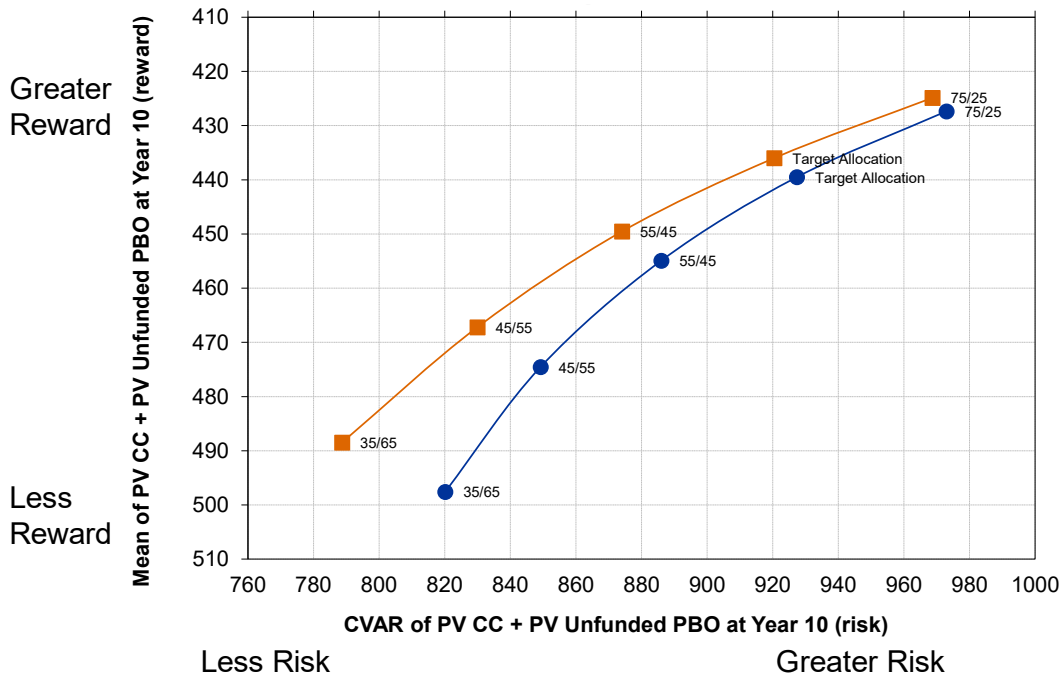
To begin the process of conducting an asset/liability study for the utility, Russell Investments incorporated the plan sponsor’s actuarial data into our modeling tools. To capture the liability information, we used a questionnaire that helped us assemble a 10-year projection of liabilities, expected benefit payments, sensitivity of the liability measures to changes in yields, and other information to calculate metrics relevant to the sponsor’s regulatory environment. We also included accounting funded status and IRS funding rules under the Pension Protection Act (PPA). This information, along with our capital markets assumptions, was input into our proprietary asset and liability modeling tool. This model was used to construct a Monte Carlo simulation of a variety of policy alternatives in which both assets and liabilities are consistently valued across 1,000 paths of interest rates, inflation, and returns to individual asset classes. The output from the model tracked assets, liabilities, funded status for both accounting, Pension Benefit Guarantee Corporation (PBGC) and cash contribution purposes, required contributions, pension expense, and a number of other pension metrics of interest to the plan’s decision makers. These metrics were then summarized in the form of statistics that capture the average levels, as well as the variability and range of outcomes across the distribution of market scenarios. This statistical summary allowed the plan sponsor to compare the potential impact that various asset allocation alternatives may have on its funded status and cash contributions.

While the 10-year assessments resulting from our strategic reviews are critical decision-making tools, we also felt it was important to test the conviction of the fiduciaries over shorter time periods. This is because shorter-term market dislocations can severely test the ability of fiduciaries to maintain an investment strategy that made sense over a long-time horizon. Capitulation to reducing risk in the event of a market surprise is a behavior seen all too often in stressful markets. For these reasons, Russell Investments augmented its long-term forecasting models with stress testing over shorter horizons and historical periods of market stress such as the Global Financial Crisis. This information proved to be valuable to help the fiduciaries honestly assess their ability to weather tough markets.

**The implemented asset allocation was specifically designed to aid in closing the funded status shortfall by maintaining the allocation to return-seeking assets while reducing the funded status impact of falling interest rates.**

The implemented asset allocation was specifically designed to aid in closing the funded status shortfall by maintaining the allocation to return-seeking assets while reducing the funded status impact of falling interest rates. Exhibits 2 and 3 summarize the key modeling results showing the move to the northwest in risk/return space over a 10-year time horizon and the reduction in VaR measures over the one-year time horizon.

### Exhibit 2: 10-year contribution impact analysis on strategic allocations

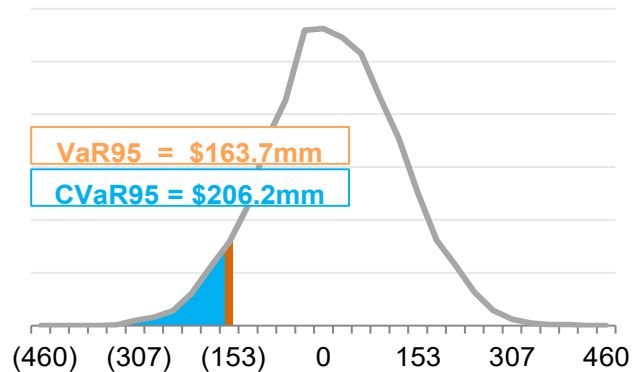
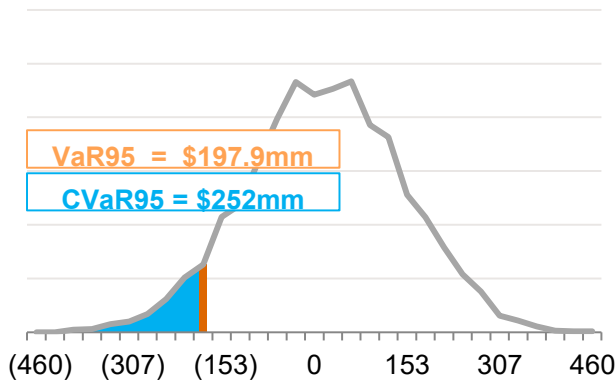


Source: Russell Investments. Exhibit 2's analysis is calculated using the study input and assumptions outlined in this report. Forecasting represents predictions of market prices and/or volume patterns utilizing varying analytical data. It is not representative of a projection of the stock market, or of any specific investment. There is no guarantee that the stated results will occur.

### Exhibit 3: Funding surplus risk one-year risk distribution

Current allocation—core bonds  
Surplus Risk Distribution(12 months)

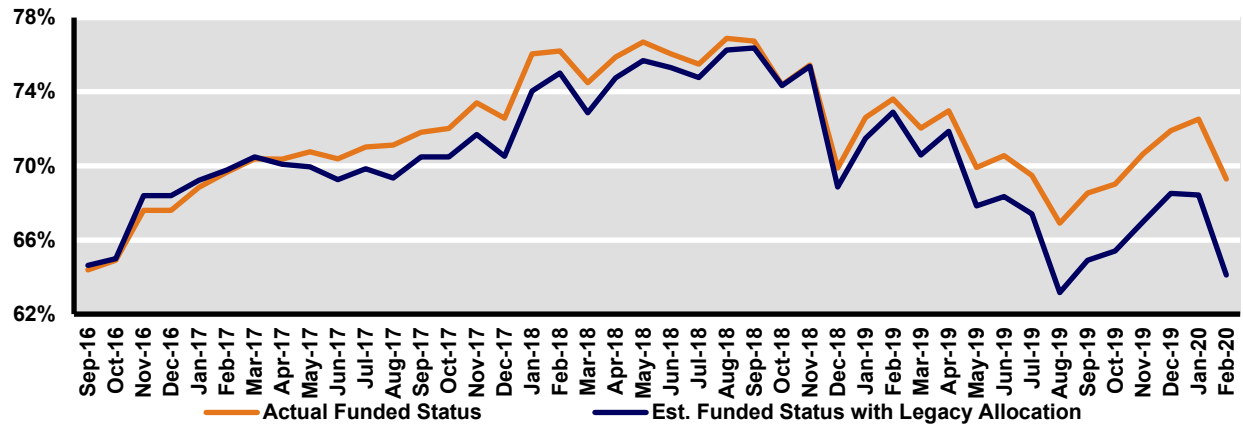
New allocation—duration extension  
Surplus Risk Distribution (12 months)



Source: Russell Investments Forecasting represents predictions of market prices and/or volume patterns, utilizing varying analytical data. It is not representative of a projection of the stock market, or of any specific investment. X-axis numbers represent the range of funded status improvement or decline that could occur over the course of a year from each allocation. We scale them identically to reflect the relative change between the frequency of these results. A more conservative overall exposure reflects few instances of values at the extreme positive and negative outcomes.

## Exhibit 4: Client funded status improvement from implemented strategy

Estimated funded status comparison, as of February 29, 2020



Source: Russell Investments.

## Results

As a result of the initial asset/liability study:

- The pension plan maintained its allocation to 65% return seeking assets while shifting their return seeking exposure towards a global equity orientation.
- The plan reallocated its 35% core fixed income exposure to a new LDI strategy. Rather than simply matching the duration of the fixed income portfolio to that of the pension liability, we proposed extending the duration of the portfolio even further to increase the overall hedge ratio of the plan to approximately 30%. This resulted in a bond portfolio duration of approximately 20 years, relative to the plan's liability duration of 15 years.

Three years later, as part of Russell Investments' ongoing review of the plan sponsor's strategic asset allocation, we produced an updated asset/liability study. This study was instrumental in reaffirming the current strategic asset allocation of 65% return seeking assets and 35% liability hedging assets. The hedge ratio target of 30% was also maintained. The study was crucial in assessing how further diversifying the return seeking portfolio through the addition of listed real estate securities and private equity could reduce expected cumulative cash contributions over the next 10 years, while the plan sponsor is in the process of evaluating an allocation to private capital. The increase in the client's hedge ratio that was implemented as a result of the previous study continues to benefit the sponsor given the challenging interest rate environment. As shown in Exhibit 4, the plan's realized funded status is approximately 500 basis points higher as of February 29, 2020 and has been less volatile than an estimate of these measures under the legacy strategy.

# Where to next?



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### Important Disclosures

This case study represents a unique situation faced by a utility located in the southwestern US seeking to reduce funded status volatility and manage any cash contributions that might need to be added to the plan. Case studies are problem-solving stories. We select a situation that is indicative of problems clients in this category are facing. The recommendations described do not represent a standard strategy or set of recommendations made for all advisory clients with similar issues. Each client has unique requirements, challenges, and constraints, and our advisory solutions are tailored to each client's specific needs. Every client's situation, experience and needs are different, and Russell Investments does not imply that the solution herein is appropriate for any other client.

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First used: April 2020. Revised: November 2022.

AI-29493-11-25

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