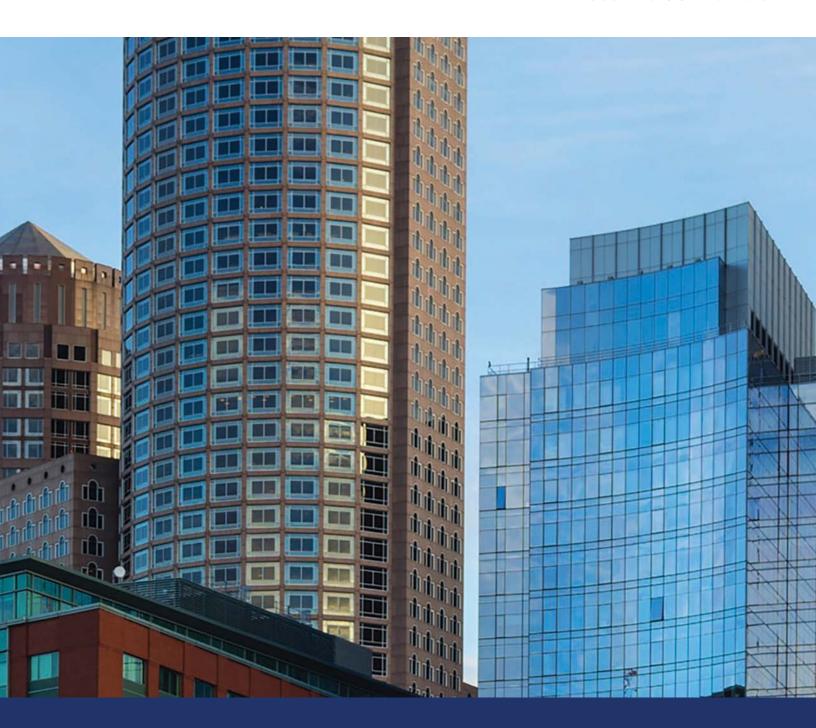
... MassMutual



Institutional Solutions

Partnering to make institutions stronger

Market presence:

who we serve

Our leading expertise and reputation in the institutional markets comes from developing comprehensive solutions that deliver results for a wide variety of entities. Experience how our team can provide institutional solutions to help your organization.



Innovative solutions to address today's complex challenges

We tailor our resources to develop integrated protection, investment, accumulation and de-risking solutions for your business. Put our vast experience, multi-disciplined team and consultative approach and talent to work for you.

"We believe people are the true core of business success. At MassMutual, our leaders bring an expertise and genuine interest to creating clear and compelling outcomes for our clients."

- KEITH MCDONAGH, HEAD OF INSTITUTIONAL SOLUTIONS, MASSMUTUAL

Our multi-disciplined, consultative approach to serve you

The complex and evolving financial needs of your business demand customized, sophisticated solutions. Developing the integrated, institutional strategies to help address these needs requires a breadth and depth of knowledge, marketplace presence and a spectrum of interdependent disciplines that only a select few can provide.

Our experienced, multi-disciplined team works with you and your advisor to understand the financial intricacies of your business. By developing a keen understanding of your institution's goals, we operate as an extension of your team to help advance your mission.

By leveraging our extensive experience with institutions of varying sizes and industries, we provide thorough and strategic insights to help you meet your financial needs, goals and vision.

YOU BENEFIT FROM:

- Dedicated teams with extensive insight in select markets
- Customized solutions, tailored to your specific needs
- Financial strength and investment expertise of a market leader

MassMutual has achieved leading positions in several institutional businesses



Institutional Insurance



Funding Agreements



Institutional Longevity



Institutional Investments



Defined Benefits



Institutional Insurance

Expertise and leadership for a dynamic market

Properly structured life insurance solutions can help you manage the business risks associated with the loss of highly compensated key employees, and serve as a tax-efficient balance sheet asset. Your company can benefit from our institutionally priced solutions to offset costs associated with employee benefit programs, including retiree health care and non-qualified benefit programs, designed to incentivize key executives.

Working with specialized distribution relationships, our full-service team of professionals deliver Bank-Owned Life Insurance (BOLI) and Corporate-Owned Life Insurance (COLI) solutions to meet the benefit funding, insurance, and asset-diversification needs of a variety of institutional businesses.

A long-time leader in the institutional insurance market, MassMutual has delivered a broad spectrum of life insurance solutions with unparalleled expertise and service.

A LEGACY OF LEADERSHIP

Long-term commitment of nearly 31 years

\$20.6 billion BOLI & \$5.9 billion COLI assets under management:

- \$21.2 billion General
 Account assets
- \$5.4 billion Separate
 Account assets
- 3200+ client plans

Note: Past performance is not indicative of future results. Information as of 12/31/2018



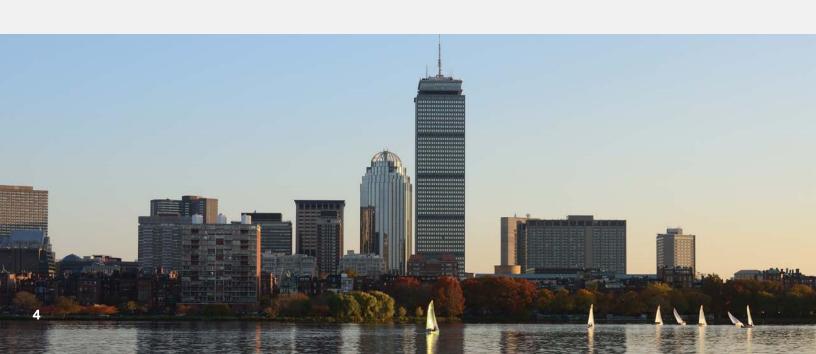
Funding Agreements

High-quality investment solutions

For investors seeking high-quality investments, MassMutual's historically strong credit rating provides you with guaranteed investment solutions for your near term investment needs.

A MARKET LEADER

- Top-quality investments for institutions
- Excellent historical financial-strength ratings
- Seamless servicing platform to manage contract terms
- Customized solutions





Institutional Longevity

Pension risk transfer and meeting longevity management needs

Several years of low interest rates and a volatile market have made it more difficult for institutions to keep their defined benefit pension plans properly funded. In addition, the Pension Benefit Guaranty Corporation (PBGC) has significantly increased its premiums during a climate of growing regulatory issues and changing actuarial tables. All these factors have made pension plans more expensive and burdensome.

A growing number of institutions are looking to transfer all or a portion of their pension risk to remove the long-term liability from their balance sheet and reduce the volatility of the plan's funded status, while meeting commitments to their former employees.

MassMutual's institutional longevity team of professionals has an average tenure of 15 years and more than 30 years of experience helping

institutions assess, mitigate and transfer risk. We deliver a consultative, client-focused approach to transfer pension risks and manage your longevity exposure.

A MARKET LEADER

- \$11 billion in assets managed for over 230,000 annuitants
- \$860 million in benefit payments paid annually
- Over 50 pension risk transfer specialists
- Large plan expertise for all plan sizes



Institutional Investments

MassMutual Funds and stable value investments powered by performance

Our seasoned teams of experts, working across asset classes and investment disciplines, have the skills and expertise to deliver a broad spectrum of fund solutions for your needs.

We provide you choices across a wide variety of investment solutions. Our thorough due diligence process uncovers the expertise of top, institutional-quality investment talent in specific asset-class disciplines to meet the particular investment objectives of a given strategy. This approach allows us to provide unique solutions by accessing a full spectrum of retail, institutional and boutique investment managers.

Our Stable Value solutions offer customization and differentiated features backed by the financial strength of one of the highest-rated companies in any industry.

Put our experience, discipline and talent to work for your business with MassMutual Funds and Stable Value solutions. Unique products, led by some of the industry's best managers.

MASSMUTUAL FUNDS

- Specialized, best-in-class asset managers
- Unique multi-manager due diligence, selection, portfolio construction and management process
- Historically top-performing, award-winning mutual funds
- Portfolios designed for retirement plans

STABLE VALUE

- Stable value investment
- Financial strength, commitment and stable value expertise
- Premier fixed-income management
- Flexible product design

Note: Past performance is no guarantee of future results.



Defined Benefit

Integrated investment and de-risking strategies designed to "simplify the complex"

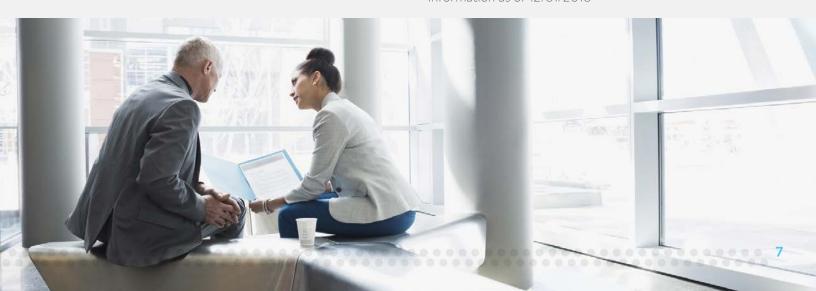
Our integrated investment and de-risking solutions provide transparency and can help meet your long-term defined benefit plan financial goals. Our investment and risk management skills combined with our pension administration expertise help us to create customized solutions to keep your plan costs low and its funding status met.

No matter where your company's defined benefit plan is in its lifecycle — implementation, active, closed, frozen or on target to be terminated — our expertise and flexible service models can support all aspects of your plan.

A LONG-TERM COMMITMENT

- Since 1947
- 2,600+ Defined Benefit
 Plans Serviced
- Over \$20 billion in assets
- Total retirement solutions provider

Information as of 12/31/2018



Mutuality matters

We have built our success by staying focused on what matters — earning our clients' trust and delivering solutions to help meet their complex financial needs — while maintaining financial strength and stability for the future.

As a mutual company, Massachusetts Mutual Life Insurance Company (MassMutual) doesn't have shareholders. We do business with the long-term interests of our clients in mind and are not subject to the expectations of Wall Street analysts or stockholders.

Our investment management strategy is built on diversification, prudent security selection and value. Because of it, we've been able to achieve solid long-term investment returns — even in unpredictable markets and challenging economic times. Financial strength ratings are a key indicator of a company's ability to meet its financial obligations.

MassMutual financial strength ratings are among the highest of any company in any industry.

FINANCIAL STRENGTH RATINGS¹

AM Best Company	A++ (Superior; top category of 15)
Fitch Ratings	AA+ (Very Strong; second category of 21)
Moody's Investors Service	Aa3 (High Quality; Fourth category of 21)
Standard & Poor's	AA+ (Very Strong; second category of 21)

¹ Ratings apply to Massachusetts Mutual Life Insurance Company and its subsidiaries, C.M. Life Insurance Company and MML Bay State Life Insurance Company. Ratings are as of 5/28/2019 and are subject to change.



PARTNERING TO MAKE INSTITUTIONS STRONGER

For more information, please go to institutional.massmutual.com



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