



Warrant Committee Town of Belmont Pension Report

October 2015

Warrant Committee Members

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Executive Summary

Belmont will contribute \$7.9 million in fiscal year 2016 from the town budget to the Belmont Contributory Retirement System as part of the system's funding schedule, or payment plan, to fully fund the pension commitments that have been made to current and retired town employees (not including teachers, who participate in a separate pension system administered by the state). This past June, Town Meeting passed a warrant article requesting the Warrant Committee to provide a Pension Report to assess the impact of the funding schedule on the operating budget and to discuss different options including: a) maintaining the current schedule, b) modifying the schedule, or c) issuing pension obligation bonds. In creating this report, the Warrant Committee wishes to express its full support of the town's commitment to fully fund and pay for all pension promises made to Belmont's current and retired public employees.

It is important to clarify that the funding schedule for pensions is established by the Belmont Retirement Board and, upon approval by the state actuary, is submitted to the town for inclusion in the budget. The current schedule calls for annual contributions from the budget to the pension fund that increase by 7% each year to fully fund the system by 2027. The schedule is reviewed by the Retirement Board on a biennial basis – with the next review scheduled for the late summer of 2016 – and the decision rights to modify the schedule rest solely with the Board.

An illustrative example comparing the 7% increase in annual contributions to a long-term growth of 3.5% in town budget resources indicates that the impact of the current funding plan on the town's operating budget could be significant. Based on this analysis, as much as \$1 million annually may need to be diverted from other spending by 2019 and more than \$4 million, or 3% of the projected budget, by 2025. A funding schedule with a lower rate of growth could reduce the impact on the operating budget while still maintaining a plan that compares favorably to other communities in Massachusetts that are Aaa rated by Moody's.

The latest report by the town actuary calculated a \$74M unfunded pension liability with a funded ratio of 51%—meaning the town currently has only about half of the assets on hand to pay for actuarially calculated pension liabilities. This funded ratio, a standard measure of fiscal health, ranks 9th among 12 comparable Aaa rated communities in the Commonwealth identified by the town's financial advisor. In contrast, Belmont's 2027 projected date for full funding ranks 1st as a measure of fiscal discipline in comparison to the other 11 communities, which average a projected year of 2033 to achieve full funding. Analysis provided by the town actuary at the July 29, 2015 Retirement Board meeting indicates that a modified funding plan based on annual contributions growing at 3% or greater would still be projected to achieve full funding by 2030, based on the results of the last actuarial valuation and current plan assumptions.

However, the actuarial and investment return assumptions used for these projections, including an assumed annual rate of return on pension investments of 7.75%, are inherently uncertain. And modification of the funding schedule would reduce flexibility to adjust if assumptions are not met. For example, if investment returns were only 6%, annual increases of 3% in contributions from the budget may not be sufficient to achieve full funding by 2040—the maximum date allowable under state law. In addition any modifications to the funding schedule would represent a change to the Town's messaging on fiscal planning to the bond rating

agencies. As noted above, the Retirement Board will be revisiting the funding schedule later next year based on the actuarial results as of January 1, 2016 and decision rights on establishing or modifying the funding schedule ultimately rest with the Retirement Board.

Pension Obligation Bonds (POBs) involve the government (e.g., Belmont) borrowing money through a bond issue and investing the proceeds in the pension investment fund. If investment returns exceed borrowing costs, this can generate substantial savings. But there is also financial market risk, as investment returns are inherently uncertain, and the potential for lower than expected savings or a net loss. We provide information below on sensitivity analysis and recent published reports on the topic to inform Town Meeting Members on this issue.

The Warrant Committee intends to hold a public forum to discuss the findings of this report, and will continue to study the issue, review specific proposals on pension funding and work with the Retirement Board and town officials as appropriate.

For a more comprehensive document on the town's retirement benefits and liabilities, see the October 20, 2014 Board of Selectmen (BOS) precinct meeting presentation in the Project, Reports, and Presentations section at www.belmont-ma.gov/selectmen.

Overview

This report is divided into six sections. The first section, *Pension Report and Scope of Work*, includes the language from the Warrant Article 12B on pensions (as amended), summarizes the topics to be addressed, and clarifies that while the town's ongoing study of OPEB liabilities is out of scope for this report, it remains part of a broader discussion on retirement liabilities. Section two, the *Current Pension Funding Schedule*, includes basic information on how funding schedules work as a payment plan to address unfunded pension liabilities and a comparison of Belmont's funded status and payment plan to comparable Moody's Aaa-rated communities in the Commonwealth.

The third section is an *Analysis of Funding Schedule Impact on the Town's Budget*, followed by a discussion in section four of the potential impact of *Modifying the Current Funding Schedule*. Section five summarizes the considerations associated with issuing *Pension Obligation Bonds*. Finally, the *Conclusion* summarizes the next steps that the Warrant Committee plans to follow based on the findings of this report.

1. Pension Report and Scope of Work

Pension Report

The language of the pension article passed by Town Meeting requesting a Pension Report from the Warrant Committee, as well as the explanatory note provided by the authors of the article's amendment, is provided below.

Warrant Article 12B on Pensions, as amended

MOVED: That the main motion (B) in Article 12 be amended to add after the words "Retirement expenses", the words "and that the Warrant Committee prepare a Pension Report that includes an analysis of the impact of the pension payments on the annual operating budget, such report must be delivered to Town Meeting Members by Oct 15th, 2015", so the motion reads: "**That under Employee Benefits, \$6,502,635 be raised and appropriated for Retirement expenses, and that the Warrant Committee prepare a Pension Report that includes an analysis of the impact of the pension payments on the annual operating budget, such report must be delivered to Town Meeting Members by Oct 15th, 2015.**"

Explanatory Note:

The purpose of this amendment is to make an official request that the Warrant Committee provide Town Meeting with a Pension Report. The Pension Report can give Town Meeting Members details about the current pension funding schedule. This schedule requires us to appropriate more than \$6 million this year toward reducing our unfunded pension liability and anticipates increasing this expenditure by about 7% per year each and every year through 2027 (at which point this appropriation will have risen to more than \$14 million).

The Pension Report can discuss how this rapidly growing expenditure might impact the Town's operating budget and assess different strategies for mitigating the impact on our annual operating budget. These potential strategies could include, but not be limited to, extending the current funding schedule from 2027 to 2040 (the maximum time allowed by Massachusetts law); the option of reducing annual increases from 7% to a figure that is in line with our historic revenue growth (i.e., about 3% to 4%); the option of paying off some or all of the liability with a pension obligation bond and/or debt exclusion; or the option of continuing the current funding schedule.

Scope of Work

This report provides information and analysis on the current funding schedule, the projected impact of the schedule on the town's operating budget, potential modifications to the schedule, and pension obligation bonds. Issues related to OPEB and the details of the town's retirement benefits are considered out of scope for this report, but remain part of a broader conversation on managing the town's long-term liabilities in a fiscally responsible manner that the Warrant Committee will continue to evaluate.

2. Current Pension Funding Schedule

Background

The majority of state and local pension systems in the US have less in pension plan assets than is needed to pay for the value of pension liabilities calculated by government actuaries. These plans typically adopt a **funding schedule** to close the gap between pension liabilities and assets over time and to help ensure that there are sufficient resources in future decades to pay for promised pension benefits.

A funding schedule identifies the contributions to be made from the government’s budget into the pension system on an annual basis. These schedules are developed based on a number of actuarial and investment return assumptions, and often designed to achieve **full funding** (i.e., Assets equal to or greater than Liabilities) by a defined **target date**. The schedule identifies an annual contribution for each year that includes (1) the amount required to pay for new benefits being earned or accrued by current workers (**service cost**) and (2) an amount to reduce the unfunded liability over time (**amortization payments**).

Belmont’s Funding Schedule

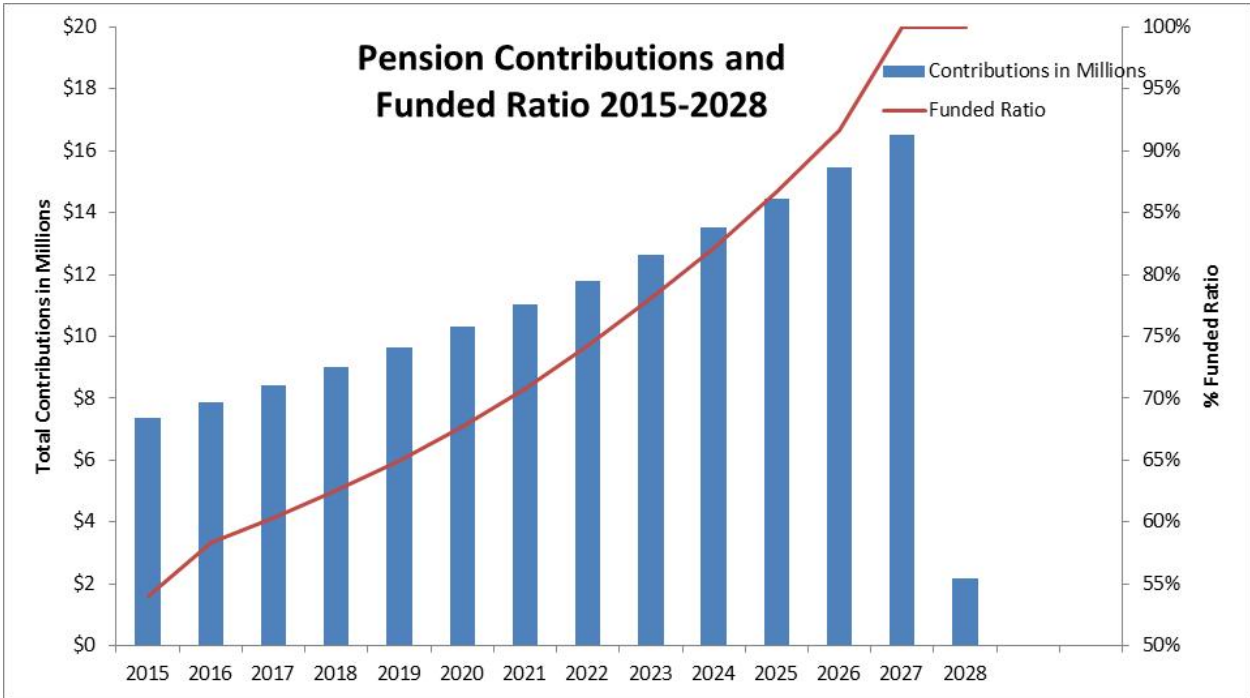
Belmont’s pension funding schedule is determined by the Belmont Retirement Board. Analysis provided by the board currently projects full funding by 2027. The table below shows projected pension contributions through 2027 broken down by service cost and amortization payments. Amortization payments comprise over 80% of total pension costs, and total contributions are currently projected to grow by 7% annually.

Fiscal Year	Service Cost	Amortization Payments*	Total Pension Contribution	Increase
2015	1,297,269	6,067,254	7,364,523	
2016	1,349,160	6,528,798	7,877,958	7.0%
2017	1,403,126	7,024,063	8,427,189	7.0%
2018	1,459,251	7,555,460	9,014,711	7.0%
2019	1,517,621	8,125,572	9,643,193	7.0%
2020	1,578,326	8,737,165	10,315,491	7.0%
2021	1,641,459	9,393,201	11,034,660	7.0%
2022	1,707,118	10,096,850	11,803,968	7.0%
2023	1,775,402	10,851,508	12,626,910	7.0%
2024	1,846,418	11,660,807	13,507,225	7.0%
2025	1,920,275	12,528,639	14,448,914	7.0%
2026	1,997,086	13,459,168	15,456,254	7.0%
2027	2,076,970	14,456,854	16,533,824	7.0%

Source: Segal Consulting, Actuarial Valuation and Review as of January 1, 2014, page 14.

*Amortization payments include amounts to fund past early retirement incentive programs

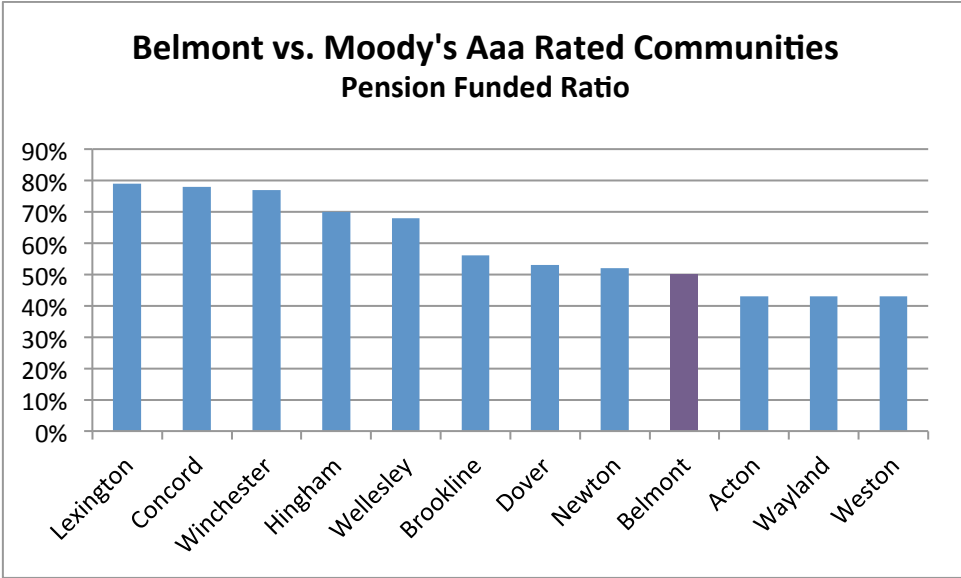
After the plan achieves full funding, the actuarial projections show a substantial reduction in costs as amortization payments drop off. Town officials have identified the reduction in amortization payments as the primary resource and strategy to fund OPEB liabilities in the future. Note that these projections are based on an assumed rate of return on pension investments of 7.75%. In addition, the pension liability is based on a number of actuarial assumptions such as longevity, salary levels, and employee turnover rates. The year that full funding is achieved could be sooner or later depending on investment performance and actual results relative to these assumptions.



Comparison to other Moody’s Aaa Cities and Towns in Massachusetts

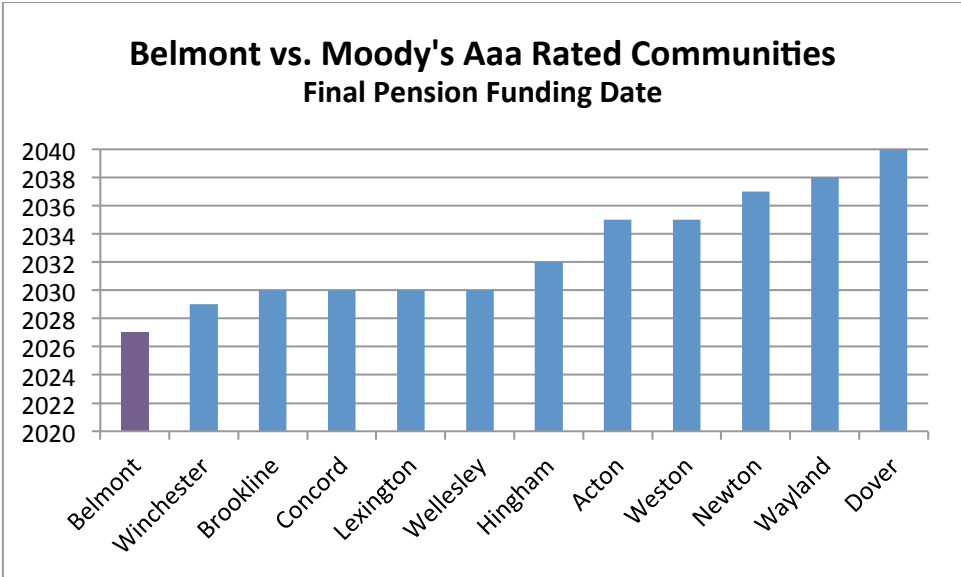
The latest report by the town actuary calculated a \$74M unfunded pension liability with a funded ratio of 51%—meaning the town currently has only about half of the assets on hand to pay for actuarially calculated pension liabilities. This funded ratio ranks 9th among 12 Moody’s Aaa rated communities in the Commonwealth that were identified by the town’s financial advisor at the precinct meeting in October of last year. Belmont’s 2027 projected date for full funding ranks 1st among the 12 comparable cities and towns as a measure of fiscal discipline, with an average full funding year for the other 11 communities of 2033. Note that the comparison includes communities that were identified by the town’s financial advisor as comparable and rated Aaa by Moody’s, which rates Belmont’s bonds. (A larger number of communities are rated AAA by other rating agencies including S&P).

The first table below shows where Belmont ranked in terms of funded ratio at the time of the presentation in 2014. The other 11 communities averaged approximately 60%.



Source: FirstSouthwest. October 20, 2014 BOS Precinct Meeting. Data modified for presentation

The next table below compares Belmont’s projected date of 2027 for full funding with other Moody’s Aaa communities. The other 11 communities average 2033 for full funding.



Source: FirstSouthwest. October 20, 2014 BOS Precinct Meeting. Data modified for presentation

A shorter funding schedule is generally viewed as a positive by fiscal watchdogs and can be expected to reduce long-term costs if plan investment return assumptions are met. However, it does require a greater share of budget resources in the near-term in order to make larger amortization payments. Appendix 1 includes additional information on the distribution of funded ratios and the projected date for full funding for all 106 state and local systems in

Massachusetts. Consistent with the comparison to other Aaa rated communities above, Belmont is currently in the bottom third on funded ratio and in the top quartile in terms of the projected date for full funding.

Continuing the Current Funding Schedule

The plan to fully fund the town’s pension system by 2027 has been in place since FY2011, when the schedule was extended from 2025 in response to market losses in the pension investment fund during the onset of the Great Recession. The town has stayed on track with that revised plan, and the current pension funding plan is regularly discussed by town officials with the bond rating agencies as an important component of Belmont’s long term fiscal planning. However, the projected annual increase of 7% is likely to have an impact on other budgetary spending as described below.

3. Analysis of Funding Schedule Impact on the Town’s Budget

We estimate the potential impact on the town budget by calculating “excess amortization growth”, defined as the difference between the annual projected increase in pension contributions and an illustrative example of 3.5% growth in overall resources for budget spending. The example below outlines how the formula works.

Example of Excess Amortization Calculation		
A. Pension Contribution FY2015		7,364,523
B. Pension Contribution FY2016		7,877,958
C. Increase in \$ (B-A)		513,435
D. Increase in % (C/A)		7.0%
E. Example of long-term budget growth rate		3.5%
F. Excess Amortization Growth % (D-E)		3.5%
G. Excess Amortization Growth \$ (F x A)		255,677

The next table shows that the cumulative effect of excess amortization growth could be substantial over time. In the first two years, the projected impact is less than one half of one percent of the total operating budget and these cost increases were incorporated in the Financial Task Force budget forecasts. In four years, however, excess growth is expected to reach about \$1M and within a decade will represent close to 3% of the total projected budget. In other words, pension contributions would increase from approximately 8% of the current budget to about 11% by 2025.

Fiscal Year	(1) Total Pension Contribution	% Increase	(2) Increase at 3.5%	(1-2) Excess Growth	Estimated % of Budget
2015	7,364,523				
2016	7,877,958	7.0%	7,622,281	255,677	0.3%
2017	8,427,189	7.0%	7,889,061	538,128	0.5%
2018	9,014,711	7.0%	8,165,178	849,533	0.8%
2019	9,643,193	7.0%	8,450,960	1,192,233	1.1%
2020	10,315,491	7.0%	8,746,743	1,568,748	1.4%
2021	11,034,660	7.0%	9,052,879	1,981,781	1.7%
2022	11,803,968	7.0%	9,369,730	2,434,238	2.0%
2023	12,626,910	7.0%	9,697,670	2,929,240	2.3%
2024	13,507,225	7.0%	10,037,089	3,470,136	2.6%
2025	14,448,914	7.0%	10,388,387	4,060,527	3.0%
2026	15,456,254	7.0%	10,751,981	4,704,273	3.3%
2027	16,533,824	7.0%	11,128,300	5,405,524	3.7%
			Cumulative	\$29,390,038	

4. Modifying the Current Funding Schedule

Analysis Provided by Town Actuary

At the July 29, 2015 Belmont Retirement Board meeting, the town actuary provided analysis of several different funding schedules based on the elements identified by Town Meeting for the Pension Report. These examples were mainly to assess what the impact of lower growth in contributions – which would mitigate the budget impact described above—would be on the projected date for full funding.

For example, the analysis included a projected full funding date of 2028 assuming a 5% annual increase in pension contributions (instead of the current 7%) and 2029 assuming a 4% annual increase. Note again that these projections assume that plan assumptions, including the 7.75% investment return, are met. In addition, the next actuarial valuation will reflect the impact of lower than expected investment returns during 2014 and 2015, which may extend the projected full funding dates relative to the projections provided in July.

Sensitivity Analysis

Sensitivity analysis can be applied to determine how the different funding policy options may perform under different economic and investment return scenarios. Returns above the plan's assumed rate of return could result in an accelerated date for full funding. Lower than expected

returns could mean that the full funding year would be further in the future, unless pension contributions were increased.

For purposes of discussion, the example below is focused on downside risk where investment returns underperform the assumed rate of return. Specifically, we show what the projected date of full funding would be if investments return 6% annually instead of 7.75%, using the same funding schedule scenarios provided by Segal in July. The 6% investment return scenario was selected based on standard statistical and simulation models that indicate that for an expected return of 7.75%, the probability that longer term returns could be at or below 6% is approximately 25% or more. (A recent Blue Ribbon Panel report sponsored by the Society of Actuaries recommends doing this kind of analysis at 3% above or below the plan’s assumed rate of return).

Assumed Increase in Annual Pension Contributions	Projected Full Funding Year By Rate of Return on Investments			
	Rate of Return	Change in Years	Rate of Return	Change in Years
	7.75%*	From Current	6.00%**	From Current
7.0%	2027	0	2030	0
6.0%	2027	0	2031	1
5.0%	2028	1	2033	3
4.0%	2029	2	2037	7
3.0%	2030	3	>2040	TBD

*Source: Segal. July 29, 2015 presentation to the Belmont Retirement Board

**Source: Warrant Committee analysis

The July analysis results show that changes to the annual increase in pension contributions would have a relatively modest impact on the projected full funding date if all plan assumptions are met. This result is based in part on the fact that: (1) employees also make substantial contributions into the plan, (2) the different funding schedules do not assume any reduction in contributions from the town—just lower rates of annual increases, and, (3) compounded investment returns are a substantial driver of reducing the unfunded liability over time. However, in the case of lower than expected investment returns at 6%, we see the impact in the form of a reduced flexibility to adjust if plan assumptions were not met. In the case of 3% increase in annual contributions, for example, the projected date for full funding would extend by more than 10 years over the current plan and potentially beyond the current state maximum of 2040.

The updated analysis to be performed next year may result in a projected date for full funding that is further in the future after taking account for recent investment performance in the pension fund. Similarly, all of the 6% return scenarios listed above could have full funding further in the future. This could be driven by our recent returns and/or the possibility that an extended period of lower returns could require using different assumptions to calculate the pension liability and therefore increase the projected unfunded liability.

Extending the Funding Schedule to 2040

Preliminary analysis indicates that if the town were to maintain annual contributions at the current \$7.8 million dollar level for each year in the future, and if the investment return and other plan assumptions were met, Belmont could come close to achieving full funding by 2040. However, as indicated above, this approach would leave little if any margin for error if investment returns underperform. In addition, extending the funding schedule to the state maximum could have a negative impact on the town's bond rating.

Decision Rights

Decision rights on setting the pension funding schedule rest with the Belmont Retirement Board pursuant to General Laws Chapter 32, s. 22(7)(c)(iii). While the Board has indicated a willingness to take feedback from others in the town, this means that any decision to modify the schedule would ultimately be at the discretion of the Board and be subject to approval by the Public Employee Retirement Administration Commission (PERAC). As a practical matter, the Board reviews the funding schedule every two years concurrent with the actuarial valuation of the system conducted by its actuary. The current funding schedule is based on the valuation as of January 2014 and includes the contribution rate for the FY16 and FY17 budget. The next valuation, based on results as of January 2016, will be performed in the summer of 2016, at which time the contribution rate for FY18 and FY19 will be established.

5. Pension Obligation Bonds

Pension Obligation Bonds (POBs) involve the government borrowing money through a bond issue and investing the proceeds in the pension investment fund. If investment returns exceed borrowing costs, this can reduce long-term costs. But there is also financial market risk, as investment returns are inherently uncertain, and the potential exists for lower than expected savings or a net loss.

The most fundamental analysis of POBs involves comparing the borrowing cost on the bonds to the pension plan's expected rate of return on investments, as well as a range of possible rates of return. Pension Obligation Bonds are not tax-exempt like most municipal bonds and therefore the interest rate would be higher than the rate Belmont pays on other borrowings. According to one analysis provided by the town's financial advisor, Belmont could issue POBs at an effective borrowing rate of approximately 4.75% over 20 years. This may be a conservative estimate – a presentation given to Norfolk County in November of 2014 included an estimated borrowing rate of 3.53% for a jurisdiction with a lower credit rating. In either case, borrowing rates at these levels would generate substantial savings at the plan's assumed 7.75% rate of return. And historically, Belmont has seen results close to this level—posting gains of 7.3% for the 10-year period ending August 31, 2015.

However, investment returns are inherently uncertain and past performance is not necessarily an indicator of future results. In addition, the retirement board's investment portfolio is highly sensitive to the economy and the performance of the stock market with an investment policy that

targets an asset allocation with 79% of investments in stocks and alternative investments, including real estate, private equity, and hedge funds (see table below). And we see the volatility of returns in recent results; in the one-year period ending August 31, 2015 the fund returned only 0.3%, mainly as a result of recent stock market performance.

Asset Class	Target Allocation
Large Cap Equities	23%
Small/Mid Cap Equities	5%
Int'l Equities	12%
Total Equity	40%
Core Bonds	10%
Global Multi-Sector Fixed Income	11%
Total Fixed Income	21%
Private Equity	7%
Real Estate	12%
Hedge Funds	10%
Total Alternatives	29%
Real Assets	10%
Total Other	10%

Over the long-term, there is always a chance that investment returns will not exceed the town’s cost of borrowing. And over shorter time horizons, a net loss between investment returns and the interest rate on a pension obligation bond could impact the Town’s cost of borrowing for infrastructure. Standard statistical models, for example, indicate that there is a more than 25% chance of returns being lower than 4.75% over 5 years and at least a 10% chance over 20 years.

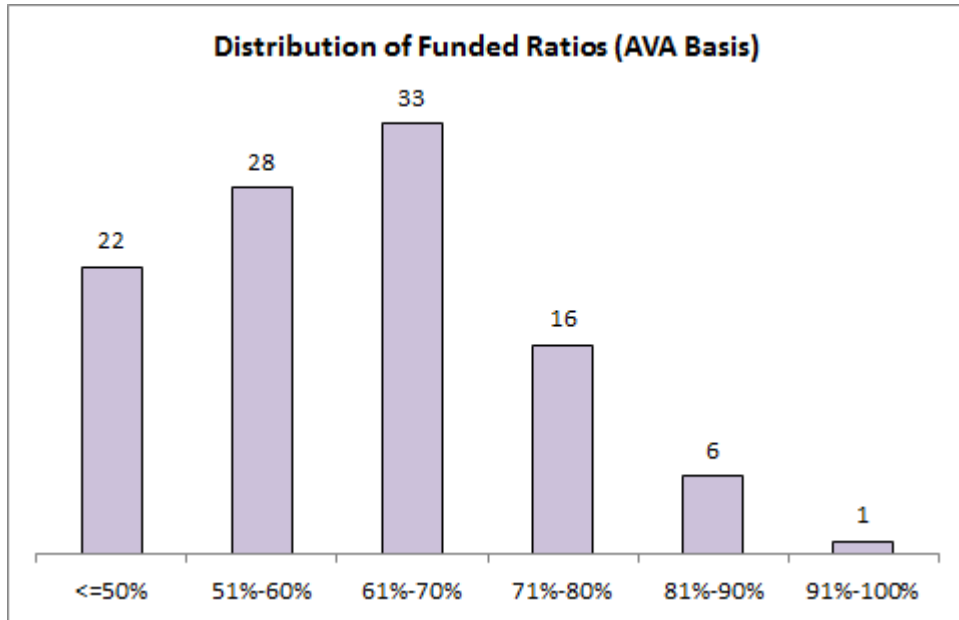
Ultimately, the consideration of pension obligation bonds comes down to a question of policymakers’ assessment of potential savings, risk, and comfort with using leverage in an effort to reduce expected costs. Appendix 2 includes some basic information on other POB borrowings in the state. Appendix 3 provides reference to a number of recent articles and research on the POB topic.

6. Conclusion

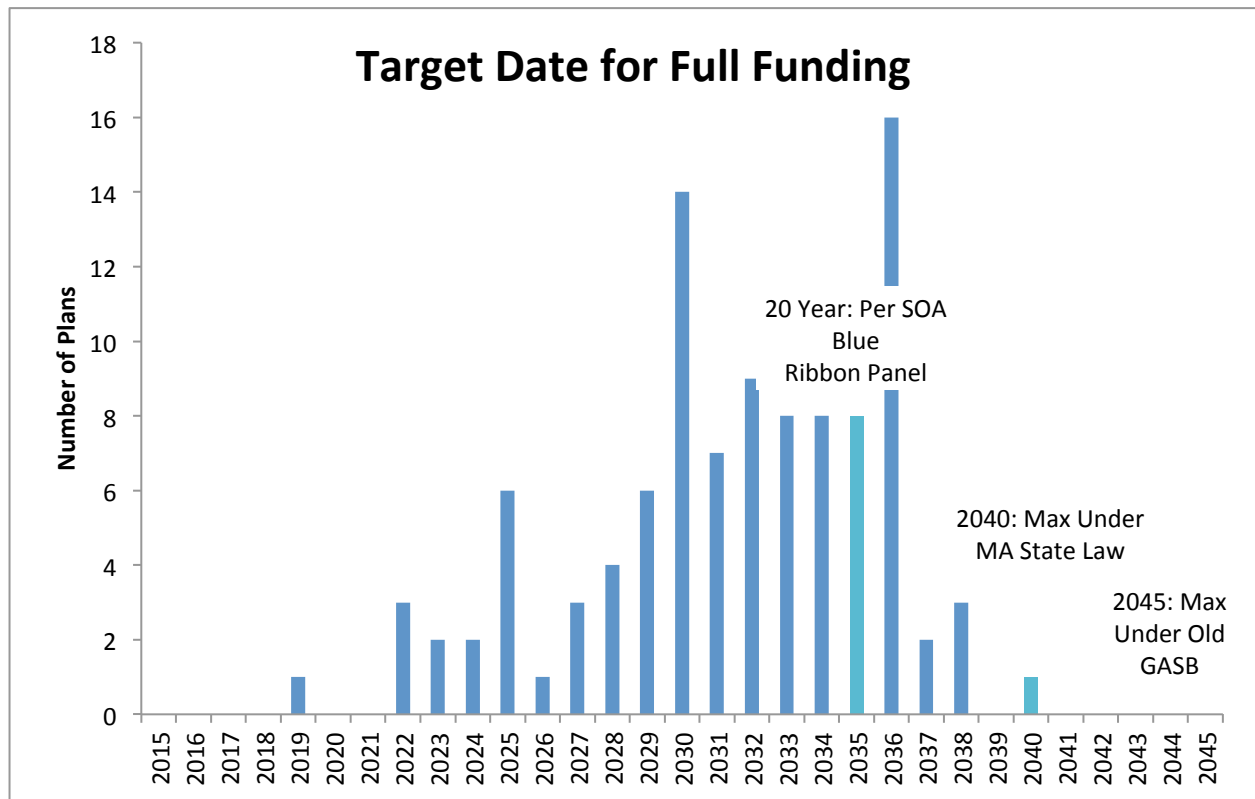
As noted above, the Warrant Committee will hold a public forum to discuss the findings of this report, and will continue to study the issue, review specific proposals on pension funding, and work with the Retirement Board and town officials as appropriate.

Appendix 1

Distribution of Funded Ratios for Full Funding for State and Local Retirement Systems in MA



Distribution of Target Date for Full Funding for State and Local Retirement Systems in MA



Note: SOA refers to Society of Actuaries.

Appendix 2

- Worcester issued a POB in 1999 and Brockton issued a POB to address a portion of the unfunded liability in November 2005.
- There are 13 other instances in which legislation was approved to allow POBs but no borrowing occurred: Everett & Holyoke, 1998; Chelsea, 1999; Springfield, 2002; Fall River, 2003; Brookline & Hingham, 2004; Quincy, 2006; Arlington, Littleton, Melrose, Tewksbury, & Wakefield, 2008.

Appendix 3

Additional Reading on Pension Obligation Bonds (POBs)

- “When Wall Street Offers Free Money, Watch Out”, ProPublica, Washington Post, July 10, 2015: <https://www.propublica.org/article/when-wall-street-offers-free-money-watch-out>
- “An Update on Pension Obligation Bonds”, Center for Retirement Research at Boston College, July 2014: http://crr.bc.edu/wp-content/uploads/2014/07/slp_40.pdf
- “US State and Local Governments Face Risk with Pension Funding Bonds”, Moody’s Investor Service, December 11, 2012: https://www.moodys.com/login.aspx?lang=en&cy=global&ReturnUrl=https%3a%2f%2fwww.moodys.com%2fviewresearchdoc.aspx%3fdocid%3dPBM_PBM147919%26lang%3den%26cy%3dglobal
- “Benefits Bonds Revisited”, Governing, November 10, 2011: <http://www.governing.com/columns/public-money/Benefits-Bonds-Revisited.html>
- “The Underfunding of State and Local Pension Plans”, Congressional Budget Office, May 2011: <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12084/05-04-pensions.pdf>
- “Bonding for Benefits: POBs and ‘OPEB-OBs’ “, Governing, January 15, 2009: <http://www.governing.com/columns/public-money/Bonding-for-Benefits-POBs.html>
- CT Act 07-186 (POB with ARC Covenant Section 8), July 2007: <https://www.cga.ct.gov/2007/ACT/PA/2007PA-00186-R00HB-06141-PA.htm>
- “Pension Obligation Bonds and Other Post-Employment Benefits”, Orrick, 2006: <https://www.orrick.com/Events-and-Publications/Documents/247.pdf>