

# **Decennial Retirement Commission**

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**Final Report**  
**January 10, 2018**

## **Decennial Retirement Commission**

Chair: Former Representative David W. Hess, Public member

Senator Sharon Carson, Co Vice-Chair, Senate Executive Departments and Administration Committee, Senate member

Linda Hodgdon, Co Vice-Chair, former Commissioner of the Department of Administrative Services, Public member

Representative Carol McGuire, Chair, House Executive Departments and Administration Committee, House member

Representative Fred Doucette, House Labor, Industrial and Rehabilitative Services Committee, Assistant Majority Leader, House member (resigned 11/14/17)

Representative Bill Ohm, House Ways and Means and Rules Committees, Deputy Majority Whip, House member

Senator David Watters, Senate Capital Budget, Education, and Transportation Committees, Senate member

Dr. Richard Gustafson, Chair New Hampshire Retirement System, Ex-officio member

Jack Dunn, Business Manager, Concord School District, Group I member

Deborah Converse, Group I member (resigned 9/25/17)

Kelly Espinola, Assistant Principal, Beech Street School, Manchester, Group I member (resigned 12/1/17)

Chief Nathan Liebenow, Newfields Police Department, Group II member

Captain Michael McMahon, Hampton Fire Department, Group II member

Former Representative Brian Gallagher, Retired School Finance Official, Municipal/School employer

Cathy Stacey, Rockingham County Register of Deeds, Municipal employer

Dennis Corrigan, Actuary, Public member

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## Introduction

### Background on the New Hampshire Retirement System

The New Hampshire Retirement System, established in 1967, administers a defined benefit plan with assets valued at \$8.29 billion, as of June 30, 2017. NHRS provides retirement, disability, and death benefits to its eligible members and their beneficiaries. Eligible members can receive a lifetime pension at retirement. The benefit is calculated based on service time and average salary using formulas outlined in state law. (RSA 100-A)

The membership consists of two groups, Group I (Employee and Teacher) and Group II (Police and Fire). Different benefit provisions apply to each group; additionally, there are benefit variations within each group based on date of vesting and/or date of hire.

The retirement system has 471 participating employers; the State of New Hampshire is the largest single employer. Most political subdivisions in New Hampshire participate in the retirement system for their Employee members. Participation is mandatory for Police, Fire, and Teacher members.

In FY 2017, nearly 48,000 public employees were active, contributing plan members. That year, the trust paid \$706.3 million in pension benefits to more than 35,000 retirees and beneficiaries, making NHRS one of the State's largest payrolls, with average benefits of about \$20,000. Eighty percent of annuitants continue to live in New Hampshire.

The plan is qualified as a tax-exempt entity under sections 401(a) and 501(a) of the Internal Revenue Code. It was 61.8% funded at the close of fiscal year 2017. The NHRS has a plan in place to completely amortize the unfunded liability of \$5.04 billion (as of June 30, 2017) by June 30, 2039.

### Welcome to the Decennial Commission's Report

The report begins with an Executive Summary listing the Commission's twelve specific charges under RSA 100-A:57, and an overview of the work of the Commission, which was charged generally with making recommendations to ensure the long-term viability of the New Hampshire Retirement System. The overview is followed by a list of the recommendations adopted by the Commission, and a description of the process used by the Commission, followed by and a list of proposals that were suggested by one or more Commission members that did not receive majority support.

The body of the report contains twelve chapters - one for each charge. Each chapter is comprised of background information on the topic, and any recommendations considered by the Commission on that subject. The chapters include detail about each of the proposed recommendations, motions made and votes taken, as well as statements by Commission members in support of their positions on the topics.

The Appendix contains a list of all documents received by the Commission, various reference materials, and a glossary of terms. Among those documents is "The New Hampshire Retirement System: A Look Backward and Forward" prepared by the Center for Retirement Research at Boston College.

## Executive Summary

The Decennial Commission convened, as required by RSA 100-A:57, to make recommendations to ensure the long-term viability of the New Hampshire Retirement System. The Commission had the following specific charges:

- (a) Study the previous decade's history of funding, benefits, and investment results of the New Hampshire Retirement System.
- (b) Review the structure and governance of the New Hampshire Retirement System.
- (c) Analyze the financial status of the retirement system, and the challenges facing the system in the upcoming decade.
- (d) Assess any changes to general accounting standards and their potential effect on the retirement system.
- (e) Make recommendations for ensuring the long-term viability of the retirement system, including an appropriate funding methodology.
- (f) Monitor the sustainability and affordability of cost of living increases for plan participants.
- (g) Study other matters deemed necessary by the Commission.
- (h) Seek technical assistance as necessary from the New Hampshire Retirement System and from other independent financial, investment, actuarial, and retirement experts. Subject to available appropriations, the Commission may employ support staff for the purposes of its duties.
- (i) Evaluate the plan for amortization of the unfunded accrued liability of the retirement system and the impact on contribution rates.
- (j) Review the effects of retirees returning to work for retirement system employers and make recommendations for legislative changes, if necessary.
- (k) Consider the effects that changes to contribution rates have on municipalities and evaluate the options to minimize the changes.
- (l) Study the feasibility and cost of eliminating the reduction in a retiree's retirement allowance upon reaching the age of 65.

### *Overview of the Report*

The Decennial Commission reviewed extensive documentation covering the period (2007-2017) since the work of the Commission to Make Recommendations for the Long-term Viability of the NH Retirement System established by HB 876 (Viability Commission.)

There are several noteworthy themes which developed over the past ten years.

The work of the Viability Commission manifested itself in several ways, perhaps the most impactful being the creation of an Independent Investment Committee (IIC). The investment performance it has generated places it in the top decile of public plans, which translates to hundreds of millions of additional dollars in earnings deposited to the pension trust. System assets now stand at \$8.29B at the close of FY 2017 as compared to \$5.96B in 2007. Fiscal year 2017 returns were 13.5%.

However, this strong relative investment performance and asset growth was overshadowed by the devastating effect of the financial crisis in 2008 – 09 which immediately thrust the system into a difficult financial position, resulting in direct losses totaling \$650 million in fiscal years 2008 and 2009.

In response, the legislature acted in 2011 in an effort to mitigate the adverse financial implications of the crisis by reducing benefits for newly hired employees and those who were not vested, and also increasing member contributions by 25% to 40%. Litigation ensued and ultimately, the New Hampshire Supreme Court ruled in favor of the State’s right to legislate these changes in two separate lawsuits challenging their constitutionality.

Despite the financial benefits to the system generated by these pension reforms, the effects of the financial crisis rippled forward, impacting investment returns and payroll growth, two important cost drivers for determining actuarial gains and losses, and ultimately, employer contribution rates. Actuarial experience studies in 2010 and 2015 noting the lagging economic recovery, the outlook for lower investment returns, and mortality tables indicating longer life expectancies, led the Board to be conservative and sequentially lowered its assumptions, resulting in substantial increases in the system’s unfunded actuarial accrued liability (UAAL). The accuracy of the assumptions adopted in 2015 is still unknown. Over the past decade the UAAL has risen from \$2.397 billion in 2007 to \$5.097 billion in 2016, an increase of \$2.035 billion more than projected. These increases have translated directly into increases in employer contribution rates, which have grown from between 64% for non-state employees to 175% for teachers. Part of these increases were due to changing the actuarial calculation method from open group aggregate to entry age normal.

The development of the unfunded liability over the past ten years is illustrated in this chart:

<b>2007 UAAL</b>	\$2.397 billion	Initial Unfunded Actuarial Accrued Liability. (A positive number indicates an increase in the UAAL. Numbers in parentheses indicate a reduction in the UAAL.)
<b>SOURCES OF CHANGE</b>		
	\$915 million	(Gain) Loss from Investment Experience
	\$665 million	UAAL Growth, 2007-2016, Negative Amortization
	\$(523) million	Changes from Updated Benefits
	\$1.746 billion	Changes from Updated Actuarial Assumptions
	\$(103) million	(Gain) Loss from Liability Experience
<b>2016 UAAL</b>	\$5.097 billion	

*Source: GRS, 10/30/17*

The current unfunded liability of \$5.1B is being amortized on a 30-year “level percent of payroll” schedule with 22 years remaining. The “level percent of payroll” method is used by most public retirement funds. In 2018, the UAAL is expected to begin a slow and gradual decline with a final payment scheduled for 2039. This approach “backloads” the schedule in that the employer contributions in the early years are lower than a “level dollar” method. This results in an increase in the UAAL in the early years.

With this backdrop, the Decennial Commission engaged the Boston College Center for Retirement Research (BC-CRR) to act as a consultant to evaluate and analyze the historical performance of the system over the past ten years and to offer recommendations on a go-forward basis, with a primary focus on improving the plan's funded status. The BC-CRR report noted that despite the fact NHRS current assumptions regarding the assumed rate of return (7.25%), payroll growth and mortality are more conservative than those currently adopted by a majority of large defined benefit public pension plans in the country, they have resulted in an increase in the UAAL over the past ten years. BC-CRR made two recommendations: (1) revise the assumed rate of return methodology to recognize the possibility of short-term rate of returns which are likely to be less than those expected in the long term, and; (2) to change from a level percent of payroll amortization to a level dollar approach in order to increase the amount of employer contributions on the "front end." The Commission took no action on the first of the two recommendations and voted to recommend further study of the level dollar amortization approach. The author of the BC-CRR report also opined that more conservative assumptions would give the Retirement System a greater probability of meeting all of these assumptions in the future.

The Commission devoted considerable time to the matter of working after retirement. Employer reports for the past several years were reviewed and current practices of other states regarding hours permitted, waiting periods, contributions to the retirement fund, and penalties levied were discussed. Several recommendations for action were formulated.

Cost of living adjustments (COLA) for existing retirees have not been paid since 2010, and the Commission heard testimony regarding the burden many retirees face as even modest inflation reduces the purchasing power of fixed retirement payments. The Commission studied several approaches to providing COLAs and recommended the Legislature provide a one-time COLA payment ("TSA") of \$500 to each current retiree. An on-going COLA of 1.5% on the first \$30,000 for current and future retirees would substantially increase the existing UAAL.

Group I retirees experience a 10% reduction in their annual pension when they reach the age of 65. Again the actuarial cost of eliminating this reduction would increase the UAAL. The Commission has recommended, however, that the age for this reduction be moved forward to age 67.

In addition to its consideration of the BC-CRR report and actuarial studies on several scenarios, the Commission systematically analyzed and evaluated data, presentations and testimony relevant to each of its charges under RSA 100-A:57, debated the merits of various approaches, and developed a series of recommendations which are listed here and detailed within the report.

## *Commission Recommendations*

Recommendations are listed here in bulleted format; details are provided under the section of the report that corresponds to the recommendation.

### **Commission Recommendations for Legislative Action**

- Amend the statute that establishes the Decennial Retirement Commission to extend the time period for the work of the Commission to permit the work of the Commission to begin earlier and thus provide more overall time for its work; no specific timeframe recommended.
- Change the terms of office for members of the Board of Trustees of the New Hampshire Retirement System from two to three years, with a provision for staggered terms to achieve implementation.
- Retain the current end date of 2039 for the amortization of the existing UAAL.
- Authorize layered amortization for all future increases and decreases in the UAAL for a fixed period between 15 and 20 years.
- Establish a legislative study committee to consider the potential benefit of a level dollar amortization schedule.
- Re-establish a state subsidy of an unspecified amount for local subdivision contributions.
- Enhance the reporting and compliance criteria to aid the NHRS in monitoring and enforcing the law addressing retired members working part-time after retirement for participating employers.
- Replace the current 32-hour weekly limitation provision with an annual calendar year limit of 1,040 hours and require participating employers to report retiree work hours and compensation on an annual basis.
- Enact a penalty which would authorize the NHRS to suspend the state portion of a retiree's annuity benefit for a 12-month period if the retiree exceeds the annual 1,040 hour threshold.
- Enact a waiting period so that a retiree shall not return to part-time employment for any participating NHRS employer for a minimum of 60 days from the effective date of retirement.
- Defer the reduction in benefits for Group I active employees from age 65 to age 67.
- Authorize a one-time payment of \$500 per retiree, in 2018, and whenever funding is available.

## *Commission Procedure*

The Commission followed general legislative protocol for conducting business, including the opportunity for members to submit minority reports. Both majority and minority summary statements by Commission members appear within the report.

For matters of inquiry, such as requests for calculations by NHRS' actuary Gabriel Roeder Smith & Company (GRS), Commission Chair Dave Hess established a six-member minimum. Commission meetings were open to the public. Stakeholders, including organizations representing active and retired members, and employer groups, were invited to provide testimony.

### **Amortization of Gains and Losses**

The Commission issued two related recommendations concerning the end date for the amortization of the current Unfunded Actuarial Liability (UAAL), and the use of layered amortization for management of any future gains and losses. These policies are consistent with recommended practices from the Conference of Consulting Actuaries. These matters are discussed in detail in Chapters E and I.

- Recommendation: Retain the current end date of 2039 for the amortization of the existing UAAL.
- Recommendation: Authorize layered amortization for all future increases and decreases in the UAAL for a fixed period between 15 and 20 years.

Summary: First, maintain the amortization of the existing UAAL in its current configuration, that is, a level percentage of payroll reaching 100% funding in 2039. Second, amortize changes to the funding required in layers, each layer amortized by either a fixed percentage of payroll or a fixed dollar amount going forward, over a fixed period not exceeding 20 years. These layers (which may be positive or negative) may be due to benefits changes, revised actuarial assumptions, changes in demographics, or extreme changes in returns.

This change will achieve multiple goals: amortization of the existing UAAL will continue without change, paying off the shortages from the past as quickly as practical; the cost of any benefits change will be immediately apparent, and amortized over an appropriate period; the effects of revised assumptions, likewise; and extreme swings in returns – beyond the level appropriately smoothed – will be spread over a period longer than the five years used for smoothing. Altogether, this approach will hopefully minimize fluctuations in employer payments, maintain transparency of the effects of changes, and help maintain intergenerational equity by not amortizing liabilities over excessively long periods.

### **Payment Schedule of the current UAAL**

The Commission gave serious consideration to the recommendation by the Center for Retirement Research that New Hampshire should pay off the current UAAL more quickly by changing from a level percentage of payroll to a level dollar amortization schedule. Since the change would require additional funds in the near-term, the Commission agreed that the legislature would need to consider the matter.

Recommendation: Establish a legislative study committee to consider the potential benefit of a level dollar amortization schedule.

Summary: The Commission acknowledged the potential benefit in moving towards this mode and adopted this recommendation in recognition of the need for further study by the Legislature, given the limited time available for the Commission's work and the need for Legislative consideration of the financial impact. Detail on the potential long-term savings and the near-term cost increases are provided in Chapters E and I.

### **Consideration of a COLA or TSA**

**Definitions:** A compounded cost-of-living-adjustment (COLA) is an automatic, generally annual, increase to a pension benefit, generally provided “for the purpose of offsetting or reducing the effects of inflation, which erodes the purchasing power of retirement income,” according to the National Association of State Retirement Administrators (NASRA). A temporary supplemental allowance (TSA), sometimes referred to as a “thirteenth check” is a lump-sum payment that does not become a permanent addition to the monthly pension benefit. (RSA 100-A:41-d)

Cost of living adjustments (COLA) for existing retirees have not been paid since 2010, and the Commission heard testimony regarding the burden many retirees face as even modest inflation reduces the purchasing power of fixed retirement payments.

The Commission requested actuarial calculations for an on-going COLA of 1.5% on the first \$30,000 for current and future retirees. The cost was determined to be more than \$1.5 billion. (GRS valuation data is in Chapter F, along with an overview of the history of the Special Account and the Viability Commission’s recommendations.)

**Recommendation:** Authorize a one-time payment of \$500 per retiree, in 2018, and whenever funding is available.

**Summary:** A compounded cost-of-living allowance (COLA) is prohibitively expensive. A one-time temporary supplemental allowance creates no future obligations, and can be funded in the normal budget process. \$500 is an amount that is large enough to be helpful, while still low enough that the total cost (approximately \$8 million) is reasonable to consider in the context of other demands for funding.

### **Consideration of the Age 65 Reduction for Group I Retirees**

**Overview:** When Group I members (employees and teachers) who were hired before January 1, 2011 retire between the ages of 60- 64, their average final compensation (AFC) is divided by 60 and that amount is multiplied by the member’s months and years of creditable service. Upon attainment of age 65, the formula changes so that a member’s AFC is divided by 66 instead of 60.

For example, a member hired prior to July 1, 2011, who retires at age 60 with an AFC of \$40,000 and 30 years of service would receive an annual pension of \$20,000 until he/she reaches age 65, at which time the annual pension would be adjusted down to \$18,182.

The Commission requested actuarial calculations on the cost of eliminating the reduction and on the cost of deferring it to age 67.

**Recommendation:** Defer the reduction in benefits for Group I active employees from age 65 to age 67.

Summary: The Commission reviewed the cost analysis and found that the elimination of the reduction for Group I at age 65 for all current retired and active members is estimated to cost \$788.2 million. Deferral of the reduction for Group I active employees to age 67 is estimated to cost \$45 million. There was sentiment to remove the reduction in its entirety, but the reality of budget constraints makes that option unrealistic at this time. The cost calculations and detail on the discussions are in Chapter L.

### **Consideration of NHRS retirees working part-time for participating employers**

Overview: NHRS retirees are permitted to work for non-participating employers without restriction, but are only permitted to work part-time for NHRS participating employers. Current law defines part-time as 32 hours or less per week, with the exception that, "Employment in some instances may exceed 32 hours in any normal calendar week provided that in such case, the part-time employment of the retired member shall not exceed 1,300 hours in a calendar year, so long as such part-time employment does not occur outside of a 5-consecutive-month period in any 12-month period." (RSA 100-A:1, XXXIV) However, the Legislature has not identified consequences in cases where a retiree is working in excess of the statutory standard, but is not working enough hours to meet the definition of full-time.

The Commission received input from stakeholders and researched the regulations governing post-retirement work in other state retirement systems. They did not find other systems where part-time work was authorized to exceed 1040 hours per year. Four recommendations were issued:

#### Recommendations:

- Enhance the reporting and compliance criteria to aid the NHRS in monitoring and enforcing the law addressing retired members working part-time after retirement for participating employers.
- Replace the current 32-hour weekly limitation provision with an annual calendar year limit of 1,040 hours and require participating employers to report retiree work hours and compensation on an annual basis.
- Enact a penalty which would authorize the NHRS to suspend the state portion of a retiree's annuity benefit for a 12-month period if the retiree exceeds the annual 1,040 hour threshold.
- Enact a waiting period so that a retiree shall not return to part-time employment for any participating NHRS employer for a minimum of 60 days from the effective date of retirement.

Summary: Other states' part time work hour ceilings typically do not exceed 1,040 hours per year, while New Hampshire's is 1,300 hours per year. Currently, there is an onerous reporting process in place; the NHRS sends out letters notifying retirees if they exceed the maximum, but there are no consequences to either the employee or the employer.

Enacting the four recommendations would accomplish a series of policy objectives: reduction of the allowable number of hours for NHRS retirees working part-time for participating employers, the establishment of an appealable penalty, shifting the responsibility of tracking the work hours from the employer to the employee, and the establishment of a waiting period for the (re)hiring of retirees.

Detail on the Commission's discussions on the topic, along with Minority Reports on three of the recommendations, are in Chapter J.

## Highlights of Recommendations for NHRS Governance

**Recommendation:** Change the terms of office for members of the Board of Trustees of the New Hampshire Retirement System from two to three years, with a provision for staggered terms to achieve implementation.

**Summary:** NHRS trustees currently serve two-year terms upon the nomination of the Governor and appointment by the Executive Council, except for the State Treasurer, who serves by virtue of office. With members serving two-year terms, approximately one half of the Board comes up for appointment or reappointment every year. This has presented challenges in keeping Board positions filled and is a near continuous process of bringing forward names for consideration. Amending RSA 100-A: 14, I. to provide three-year terms for NHRS Trustees would align Trustee terms with those of the Independent Investment Committee, promote continuity, and improve administrative efficacy.

## Other Recommendations

**Recommendation:** Amend the statute that establishes the Decennial Retirement Commission to extend the time period for the work of the Commission to permit the work of the Commission to begin earlier and thus provide more overall time for its work; no specific timeframe recommended.

**Summary:** The Commission unanimously felt that it has been unduly rushed to comply with its statutory deadline and still consider all relevant issues in sufficient detail. Some other states that implement similar commissions and committees allocate a whole year to complete their work. States with longer timeframes for retirement commissions may tend to receive and implement recommendations that are better considered and more far reaching after hearing in-depth testimony and reports unavailable in shorter timeframes such as the one this Commission was forced to operate under.

**Recommendation:** Re-establish a state subsidy of an unspecified amount for local subdivision contributions.

**Overview:** In 1967, RSA 100-A required the state to pay 40% of the employer contributions on behalf of Teachers. In 1977, the statute was amended to provide 35% on behalf of all full-time Teachers, Police Officers, and Firefighters employed by political subdivisions. (Those job classifications are mandatory members of NHRS; sub-divisions may also choose to enroll their Employees). In 2009, a further amendment reduced the state's share to 30% for FY 2010 and 25% in FY 2011; with the state's share to revert to 35% in FY 2012. In 2011, the legislature eliminated the subsidy entirely.

The elimination of this subsidy had a significant impact on employer contribution rates for municipalities and other political subdivisions. Reinstating a subsidy at 15%, as proposed in HB 413 in 2017, would have reduced municipal pension costs by more than \$40 million. This topic is discussed in detail in Chapter K.

## Minority Recommendations

All Commission members had the opportunity to propose recommendations, which were adopted (or failed) by a majority vote of those present. The proposed recommendations listed below failed to be adopted by a majority of Commission members. Detail concerning the discussion of each proposal is contained in the Chapter related to each of the topics, along with the full text of any Minority Reports.

### **Minority Recommendations**

The following proposed recommendations were not adopted; detail on each topic can be found in the Chapters referenced below:

- Add one retired member with the appropriate qualifications to the Independent Investment Committee. (Discussed in Chapter B)
- Add one retired member with the appropriate qualifications as a non-voting member to the Independent Investment Committee. (Discussed in Chapter B)
- Establish a cash balance plan as an alternative means to provide COLAs. (Discussed in detail in Chapter F, including a Minority Report)
- Amend the statute that establishes the Decennial Retirement Commission to convene the Commission every five years, rather than every 10 years. (Discussed in Chapter G)
- Authorize automatic enrollment of new employees into the State's 457(b) Public Employee Deferred Compensation Plan, with automatic escalation of contributions based on increases in pay. New hires will have an opt-out provision, and existing employees shall have an opt-in requirement. The provision shall be in accordance with applicable labor agreements. This would apply to the State and to subdivisions that have chosen to participate in the State's plan. (Discussed in detail in Chapter G, including a Minority Report)

## Decennial Commission’s Charges under RSA 100-A:57

### A. Study the previous decade's history of funding, benefits, and investment results of the New Hampshire Retirement System.

The Decennial Commission’s study covers the period from 2007-2017. This report begins with the status of the recommendations of the Viability Commission, which was established in 2007 by HB 876, to ensure the long-term viability of the New Hampshire Retirement System. Based on the first Commission’s recommendation, RSA 100-A:57 was enacted, requiring a similar Commission to be convened every 10 years. Therefore, this Decennial Commission’s first task was to examine the past decade before looking forward to the future.

### Status of the Viability Commission’s Recommendations

Priority Recommendations	Status
Establish a strong committee structure for the NHRS Board that facilitates and enables meaningful work to be accomplished, utilizing the experience and expertise of not only Board members, but appropriate outside individuals. <ul style="list-style-type: none"> <li>Establish an Investment Committee that includes non-board members who are investment professionals</li> <li>Establish an Audit Committee that includes non-board members who are accounting professionals.</li> </ul>	Independent Investment Committee (IIC) established HB 1645 in 2008, Chapter 300, Section 17 (300:17); The Audit Committee includes appropriately qualified trustees; non-board members have not been added; four additional Board Committees were established (Benefits, Governance, Legislative, and Personnel, Performance and Compensation (PPC)).
Freeze the medical subsidy amount in 2010, subject to biennial review	Enacted by HB 1645, 2008, 300:5-7 (freeze extended indefinitely by HB2, 2011, 224:176)
Establish a new health care subsidy plan, separate from the pension plan, by 7/1/09	Not enacted
Transfer \$250 million from the Special Account into the corpus, which will bring the trust up to 66.8%, and lessen the impact of medical contributions on employer rates	Funds transferred by HB 1645 in 2008, 300:8
Establish an employee-funded COLA program	Not enacted
Allow non-vested members to leave money in the system, credited at a rate 2% below the assumed rate of return	Enacted by HB1645, 2008, 300:3-4

Majority Recommendations for Legislative Action	Status
Amend the statute requiring 25% of the employer contributions to be paid toward the Medical Subsidy, to authorize the lesser of the actuarially required contribution to keep the program solvent, up to a maximum of 25%.	Enacted by HB1645, 2008, 300:9
Remove the phrase “and other compensation paid to the member by the employer” from RSA 100-A:1, XVII.	Enacted by HB1645, 2008, 300:1
Endorse the position on equity of employee and employer contribution rates established in HB 653: The annual employer contribution requirements effective July 1, 2008 and as calculated each year thereafter shall not be less than the employee contribution rates	(Previously) enacted by HB653, 2007, 268:9
Clarify and affirm the fiduciary obligations of all NHRS trustees are not subordinate to any other role or position, or basis of selection to the NHRS Board	Enacted by HB1645, 2008, 300:18

Adopt the American Law Institute “prudent expert” standard for the management of NHRS funds. It requires fiduciaries to become experts and/or to hire, carefully delegate and rigorously monitor those charged with fund management duties	Enacted by HB1645, 300:18
Establishment of a preferential tax vehicle for employees to make contributions that would provide additional funds for post-employment medical expenses. Employer contributions would be negotiated. The vehicle would provide all public employees the opportunity for access to funds to assist with the costs of post-retirement health care.	Endorsed by Senate Joint Resolution 2, 2010, 379
Provide current retirees with a minimum annual increase. Authorize COLAs paid as a 13th check, set at a rate of 2½% up to the median sub-group pension level, with a \$500/year minimum amount for each retiree rising at the CPI-U each year.	Not enacted
Allow members to make additional contributions	Not enacted
Reduce the threshold for gain sharing from the 85% funding level to 75%. When the trust fund reaches 75%, annual investment gains in excess of 10.5% will be transferred to the Special Account	Not enacted. Gains sharing was eliminated entirely when the Special Account was repealed by HB 1483, 2012, 261:14

<b>Majority Recommendations for NHRS Governance</b>	
Amend the NHRS bylaws to commit all trustees to participate in ongoing orientation and educational activities relating to pension plan governance, investments, and other germane topics – with the expectation and goal of maintaining high levels of engagement and competence	Implemented by the NHRS Trustee Education Policy
Commit in NHRS Bylaws to full transparency for all actions impacting participants, including reasonably complete Board/committee minutes. In addition, the NHRS would adopt as a guiding principle the responsibility to regularly and openly communicate with stakeholders	Implemented by NHRS
The assumed rate of return must be reasonable and sound, not set to minimize employer contributions.	NHRS Actuarial Funding Policy
The Board should adopt a timetable for reviewing and renewing or replacing: actuaries, auditors, consultants, counsel on an appropriate timetable (3-5 years). Investment managers are under continuous review.	Implemented by the NHRS Procurement Policy
The system should develop a method of communicating, in addition to the Comprehensive Annual Financial Report (CAFR), to facilitate stakeholders’ and policy makers’ understanding of the issues facing the system	Implemented by the Summary CAFR plus other vehicles
Expand the current system’s Investment Policy Statement and elevate its importance in the governance structure	Implemented by the Investment Manual
The board should set high standards, knowing how the investment results compare not only with its own benchmark but relative to its peers	Enacted by HB1645, 300:18 and the NHRS Investment Manual
In any instance where the system suffers a loss as a result of alleged fraud there should be a process to ensure that it is collecting all securities class action money that may be due. The system should adopt a policy to include reasonable standards for determining when it is appropriate to serve as a plaintiff and/or representative party in shareholder litigation.	Adopted by the NHRS Securities Litigation Policy
The NHRS board should meet with appropriate legislative leaders and the governor at least twice per year.	This specific recommendation was not adopted, but the Board is required to submit quarterly report to the General Court (HB2, 2011, 224:175)
Establish a joint legislative committee to maintain a liaison relationship with the retirement system.	Not adopted
Establish in NHRS bylaws a committee structure that enables greater involvement of non-Board individuals with specialized expertise and experience	Not adopted
Consider incentive policies for the CIO and the Executive Director tied to investment benchmarks	Not adopted

<b>Minority Recommendations</b>	<b>Status</b>
Modify the make-up of the NHRS Board of Trustees	Enacted by HB2, 2011, 224:174

Change from 3 to 5 years the required timeframe for calculation of average final compensation (AFC)	Enacted by HB 2, 2011, 224:163
Increase the age and service requirements for Group II to 55 years of age with 25 years of creditable service and lower the annual accrual to 2.0%.	Enacted by HB 2, 2011, 224:166, with age increased to 52.5
Cap the amount of every retirement annuity at 100% of a retiree's final base pay plus mandatory overtime.	This specific recommendation was not adopted, but the maximum benefit limit was subsequently modified. HB 1645, 2008, 300:14; HB 2, 2011, 224:164; SB 244, 2012, 194:6
Fund COLAs by calculating costs into employer contribution rate	Not enacted

## Funding and Benefit Changes

Since 2007, more than 90 changes have been made to NHRS plan provisions contained in RSA 100-A. These changes were enacted in dozens of separate bills. In addition, dozens of additional bills related to NHRS were introduced but not enacted, including one proposal to create a defined benefit cash balance plan for future hires that was introduced in successive legislative sessions and 4 proposals to create or study a defined contribution plan for future hires.

In 2008, HB 1645 addressed several of the recommendations that came out of the Viability Commission in 2007 and made additional changes to the retirement system. This bill, among other things, modified the definition of Earnable Compensation (a key factor in pension calculations), froze the Medical Subsidy benefit amount for retirees through 2011, changed the funding method for the Medical Subsidy, created the Independent Investment Committee, created the Decennial Commission, set a maximum benefit limit for members hired after 7/1/09, and transferred \$250 million from the "special account" to fund pension benefits.<sup>1</sup>

In 2011, more sweeping changes were made to the retirement system in HB 2 and other legislation. Benefit provisions for some current members and all future members were changed by amending the definition of Earnable Compensation to a more restrictive one; increasing the calculation of Average Final Compensation from 3 to 5 years; further capping the maximum allowable benefit; increasing the Service Retirement age; and reducing the Group II benefit formula. These changes essentially created a three-tier benefit structure based on whether a member was vested for a pension benefit by January 1, 2012, hired prior to July 1, 2011, but not vested by January 1, 2012, or hired on or after July 1, 2011.

HB 2 also increased the member contribution rates, modified the makeup of the Board of Trustees, froze the Medical Subsidy benefit payment at 2008 levels indefinitely, created a definition of part-time for

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<sup>1</sup> The Special Account, which was repealed in 2012, contained segregated funds for supplemental benefits, primarily cost-of-living adjustments. History: In 1983, the legislature created a Special Account to set aside "excess earnings" for the purpose of providing COLAs and other post-retirement benefits. The Viability Commission found serious flaws in the construction of the gains-sharing mechanism, identifying it as a contributing factor in the growth of the UAAL. Annual earnings more than ½% above the assumption rate were transferred into the Special Account, with no downside protection for the trust. While the adoption of the Open Group Aggregate funding methodology in 1991 artificially reduced employer contribution rates, funds continued to move to the Special Account. Between 1990 and 2000, approximately \$900 million was transferred to the Special Account.

retirees working for participating employers, and transferred most of the remaining funds from the special account to fund pension benefits.

Cumulatively, plan changes were expected to reduce future pension costs for employers by more than \$2 Billion.

Employee costs increased by 24% to 40% as a result of increases to the member contribution rates effective July 1, 2011.

Employer rates increased from 2006-2016 by 64% for Non-state Employees; 84% for State Employees; 175% for Teachers, 77% for Police, and 32% for Fire.

FY	Employer Rates*				
	Non-State Employees	State Employees	Teachers	Police	Fire
2006-07	6.81%	6.81%	5.70%	14.90%	22.09%
2008-09**	8.74%	8.74%	8.93%	18.21%	24.49%
2010-11	9.16%	11.05%	10.70%	19.51%	24.69%
2012^	11.09%/8.80%	12.31%/10.08%	13.95%/11.30%	25.57%/19.95%	30.90%/22.89%
2013	8.80%	10.08%	11.30%	19.95%	22.89%
2014-15	10.77%	12.13%	14.16%	25.40%/25.30%∞	27.85%/27.74%∞
2016-17	11.17%	12.50%	15.67%	26.38%	29.16%

\* Employer Rates: (1) The rates listed above are the total employer contribution rates. In 2008, legislation was passed to include both a pension and a Medical Subsidy portion as part of the total employer contribution rate, which may result in a difference in the employer rates for state and non-state Employee members

\*\* Employer rates prior to FY 2010 were calculated under the Open Group Aggregate actuarial method, which is one of the factors that contributed to the structural underfunding of the plan.

^ Employer rates were recertified effective Aug. 1, 2011, to reflect 2011 legislative changes. Employers paid the higher rate shown for July 2011 only.

∞ The two rates listed in this column represent differing employer contribution rates for the state and political subdivisions, respectively. Group II employer contribution rates differed in this biennium only due to the timing of 2011 statutory changes in relation to the state payroll schedule.

### *Detail on Three Tiers of Member Benefits for Service Retirement*

#### Three Tiers of Pension Eligibility for Group I Employees & Teachers

Hired on or after 7/1/11	Not vested by 1/1/12	Vested by 1/1/12 No change
Full Service Retirement Age at 65	No change: Full Service Retirement Age at 60	Full Service Retirement Age at 60
AFC on high 5 years of service Pay-outs excluded	AFC on high 5 years of service Pay-outs excluded	AFC on high 3 years of service
Formula = AFC divided by 66 x years of service	Formula = AFC divided by 60 x years of service	Formula = AFC divided by 60 x years of service
Formula = AFC divided by 66 x years of service	Formula = AFC divided by 60 x years of service (Age 60-64); AFC divided by 66 x years of service (age 65)	Formula = AFC divided by 60 x years of service (Age 60-64); AFC divided by 66 x years of service (age 65)

Three Tiers of Pension Eligibility for Group II\*  
Police Officers and Firefighters

Hired on or after 7/1/11	Not vested by 1/1/12	Vested by 1/1/12 No change
Age 52.5 with 25 years of service 2% multiplier	Sliding scale of Minimum age, required amount of service and multiplier - based on years of service as of 1/1/12 At least 8 years = age 46 with 21 years; 2.4% 6-8 years = 47/22; 2.3% 4-6 years = 48/23; 2.2% <4 years = 49/24; 2.1%	Age 45 with 20 years of service, or age 60 Multiplier = 2.5%
AFC on high 5 years Payouts excluded Special duty pay excluded	AFC on high 5 years Payouts excluded Limit on special duty pay	AFC on high 3 years w/ payouts Limit on special duty pay

\* Group II members do not participate in Social Security for their Group II service. While they may contribute to Social Security in other jobs during their careers, those Social Security benefits may be subject to reductions under the Windfall Elimination Program (WEP), and their spouses' or widow(er)s' benefits may be reduced by the Government Pension Offset (GPO). [www.socialsecurity.gov](http://www.socialsecurity.gov)

*Note: These are general examples only. These summaries do not include descriptions of death benefits, disability retirement (both service-related and non-service related), early service, vested deferred, split benefits, or the medical subsidy. Members should visit the NHRS website for detailed information [www.nhrs.org](http://www.nhrs.org)*

## Litigation

In response to investment losses during the Great Recession, many state legislatures reduced pension benefits and/or increased member contribution rates. The National Association of State Retirement Administrators (NASRA) reported that “pension benefits already earned are protected by contract clauses of the US Constitution and state constitutions, but the right to future benefits varies from state to state.”

In New Hampshire, litigation on pension benefit and contribution increases began earlier than in most states, with challenges to legislation passed as a result of Viability Commission recommendations, and reduction in the State subsidy for political subdivision employer contributions. The summary below is excerpted from material provided by NHRS:

Concord, et. al – State share of employer contributions re: 2009 Chap. Law 144:52: A class action suit filed in March 2010 on behalf of nearly 300 local communities, counties, and school districts against both the State and NHRS. The Petitioners claimed that, as a result of HB 2 in 2009, the reduction in the State's share of the employer contributions from 35% to 30% in FY 10 and to 25% in FY 11 on behalf of political subdivision teachers, police, and firefighters was an unfunded mandate in violation of Part 1, Article 28-a of the New Hampshire Constitution. On May 13, 2011, the Merrimack County Superior Court found the reduction in the State's share did not create an unfunded mandate, and subsequently denied a motion for reconsideration. The matter was appealed to the Supreme Court in June 2011, which affirmed the Superior Court’s decision on August 31, 2012, and denied a motion for reconsideration.

Fire Fighters I - 2011 HB 2 Contributions: In June 2011, a coalition of union groups filed suit claiming that the increased member contribution rates passed in HB 2 (2011) resulted in an unconstitutional impairment of vested contract rights. On September 9, 2013 the Merrimack County Superior Court

issued an Order finding that it was unconstitutional to increase the level of contributions required from those members who were vested at the time of the legislative enactment. Both parties filed appeals in Supreme Court in October 2013. On December 10, 2014, the Supreme Court overruled the Superior Court and adopted the “unmistakability doctrine”; finding that there was no constitutional impairment of a contract because there was no unmistakable intent by the legislature to create a contractual obligation binding itself from prospectively changing the member contribution rate.

AFT: Members and unions filed suit in August 2009 against the State and NHRS, claiming that HB 1645 (2008) unconstitutionally impaired vested contract rights. Changes included: the definition of earnable compensation; the freezing of COLAs; the manner in which the Special Account was funded; and the transfer of \$250 million from the Special Account to the trust corpus. On July 10, 2013, the Court ruled that vesting takes place at ten years of service and those retired members who completed ten years of service under the 1991 definition of earnable compensation had a vested right to that definition. The Court ruled against the Petitioners on their claim of a vested right to a COLA. The State filed an appeal to the Supreme Court in July 2013. On January 16, 2015, the Court ruled that there was no constitutional impairment of a contract due to the 2009 legislative changes because there was no unmistakable intent by the legislature to create a contractual obligation.

Fire Fighters II – 2011 HB 2 Benefits: The same coalition of union groups who were plaintiffs in the Fire Fighters I case filed suit to challenge the benefit reductions in HB 2 on the similar claims of impaired vested contract rights. On May 23, 2013, the Hillsborough County Superior Court found that the Petitioners had constitutionally protected contract rights that vested at the time of permanent employment. In July 2013 the Court issued a stay in further proceedings pending the resolution of the HB 2 Contributions and AFT cases in the NH Supreme Court. The State filed a Motion to Dismiss. On February 12, 2016, the Court issued a decision dismissing all claims based upon the Supreme Court’s earlier rulings in the HB 2 Contributions and the AFT cases. The Petitioners filed an appeal with the Supreme Court. On October 13, 2016, the Supreme Court upheld the Superior Court decision to dismiss the case because there was no “unmistakable intent by the Legislature to contractually bind itself against prospectively changing the terms contained.”

## The Medical Subsidy

The Medical Subsidy is a payment made by NHRS to a retired member’s former employer or health insurance administrator toward the cost of health insurance for a qualified retiree, his/her qualified spouse, and his/her certifiably dependent children with a disability who are living in the household and being cared for by the retiree.

Subsidy payments are made by NHRS directly to the former employer or the employer’s health insurance administrator, not to the retiree or beneficiary.

The current maximum monthly Subsidy payment amounts are: \$375.56 monthly for each eligible person who is not entitled to Medicare benefits and \$236.84 monthly for those on Medicare, toward the cost of a Medicare supplement policy. There have been no increases in the monthly maximum subsidy amounts payable since the 8% annual increase ended in July 1, 2007.

In Fiscal Year 2016, NHRS paid \$51.8 million in Medical Subsidy benefits. The amount of Medical Subsidy benefits paid will decline over time as eligible retirees age into Medicare and eventually pass away. At June 30, 2016, there were 10,160 retirees or beneficiaries eligible for the Medical Subsidy benefits. Another 3,100 retirees would have been eligible, but they are not currently receiving insurance through their former employer.

Medical Subsidy for Group II: Enacted in 1988 for Police and Fire members who were active or retired as of June 30, 1988, and subsequently extended. Current provisions apply to those who were active or retired on June 30, 2000. There are currently 880 active Group II members who meet the eligibility criteria but have not yet retired.

Medical Subsidy for Group I: Enacted for Teachers in 1999, Political Subdivision Employees in 2000 and Group I State Employees in 2001. Eligibility was subsequently closed to Group I state employees who retired after July 1, 2004, and for Teachers and Political Subdivision Employees who retired after July 1, 2009.

Funding: The Medical Subsidy benefits were initially funded by the Special Account, and are currently funded by the various employer groups on a pay-as-you-go basis. As part of the biennial rate-setting process, a Medical Subsidy portion of the total employer contribution rates for each member group sufficient to pay annual benefits is calculated by the actuary and certified by the Board of Trustees.

**Employer Contribution Rates by Category for FY '18 and '19**

Member category	Pension Normal Cost	UAAL	Medical Subsidy	Total Employer Rate
Employee - State	2.16%	8.92%	1.07%	12.15%
Employee – Subdivision	2.16%	8.92%	0.30%	11.38%
Teacher	2.07%	13.63%	1.66%	17.36%
Police	5.67%	19.66%	4.10%	29.43%
Fire	7.05%	20.74%	4.10%	31.89%

**Notes:**

- NHRS does not provide retiree health insurance coverage; NHRS’ role is that of an administrator, deducting insurance premium payments from retiree annuity checks and paying Medical Subsidy benefits to employers or insurance administrators pursuant to the statute. The Viability Commission had recommended the establishment of a separate trust (not part of NHRS) to provide funds for post-retiree health benefits, but this was not enacted.
- Some state retirees may be eligible for post-retirement health care coverage under RSA 21-I:30, which is administered by the Department of Administrative Services.
- RSA 100-A:50 requires other NHRS-participating employers to allow retiring members, upon retirement, to continue to participate in the employer’s group health insurance plan; Medical Subsidy eligible retirees receiving coverage under another employer-sponsored plan will be permitted to return to the former employer’s plan in order to receive the Medical Subsidy when other coverage is no longer available. Employers are not required to pay any of the cost of coverage, although some may do so.

## Investment Returns

Pursuant to one of the priority recommendations of the Viability Commission, the Independent Investment Committee (IIC) was established by legislation effective January 1, 2009.

The five-member IIC manages investments based on the investment policy and asset allocation approved by the Board of Trustees. The IIC continuously monitors and evaluates performance, and makes determinations regarding the hiring and retention of fund managers.

For the five, six, seven, and eight years ending June 30, 2009, a period during which the Retirement Board made the investment decisions, total fund performance was in the third quartile.

For the five, six, seven, and eight years ending June 30, 2017, a period during which the Independent Investment Committee made the investment decisions, total fund performance was in the top decile.

The underperformance of 60 basis points relative to the DB median for the eight years ending June 30, 2009 represents approximately \$198 million in reduced investment returns compared to the median public employee defined benefit pension plan.

The outperformance of 150 basis points relative to the DB median for the eight years ending June 30, 2017 represents approximately \$508 million in increased investment returns over the median public employee defined benefit pension plan.

### Comparison of NHRS investment performance before and after the establishment of the IIC

	Ending June 30, 2009								Ending June 30, 2017							
	5yrs%	Rank	6yrs%	Rank	7yrs%	Rank	8yrs%	Rank	5yrs%	Rank	6yrs%	Rank	7yrs%	Rank	8yrs%	Rank
Total fund composite	1.8	61	3.8	53	3.6	<b>71</b>	2.2	75	9.8	6	8.3	9	10.2	6	10.6	<b>7</b>
Total fund composite Index	2.3	45	4.4	32	4.4	<b>33</b>	2.8	44	9.9	5	8.5	5	10.4	5	10.6	<b>7</b>
Investor Public DB Net Median	2.2		3.9		4.0		2.8		8.2		6.9		8.6		9.1	

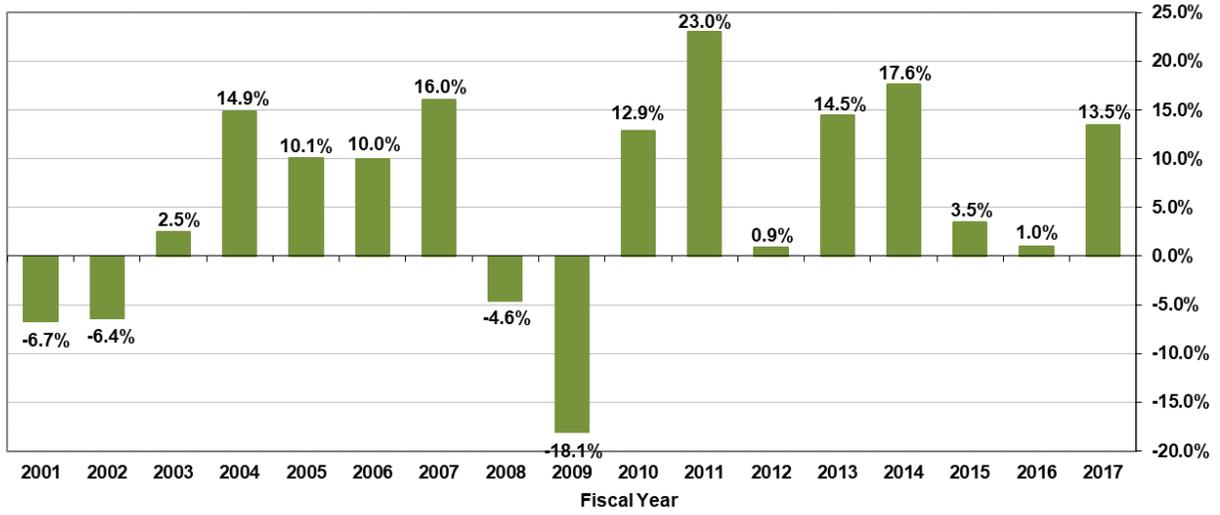
Source: NEPC

NHRS realized a 13.5% (unaudited) return on investments in the fiscal year ended June 30, 2017, outperforming the Total Fund benchmark return of 11.9%. The retirement system's assumed rate of investment return is 7.25%.

Compared to the members in the InvestorForce Public Defined Benefit Net Universe, which represents 283 public plans totaling more than \$599 billion in assets, NHRS performed better than 90% of its peers over the three and five-year periods.

The CRR report confirmed these findings, "since major reforms to the investment process in 2007, the investment performance of NHRS has exceeded most other plans." (p. 23)

### NHRS Investment Returns 2001-2017



Source Data: Time-weighted annual returns (net of fees) provided by NEPC, LLC

## B. Review the structure and governance of the New Hampshire Retirement System.

NHRS is a component unit of the State overseen by a 13-member Board of Trustees. The New Hampshire Legislature as the plan sponsor is responsible for enacting the provisions of RSA 100-A, which include plan benefits. Neither the Board nor the administrative staff determine the benefits.

The Executive Director reports to the Board, and manages the administrative staff. They are responsible for implementing the plan provisions in accordance with RSA 100-A and the Internal Revenue Code.

### The Board of Trustees

The trustees are fiduciaries bound by law to act solely in the interest of the participants and beneficiaries of the pension plan. The trust must be managed in accordance with Article 36-a of the New Hampshire State Constitution which protects funds for the exclusive purpose of providing benefits, requires the Board certify employer rates based on sound actuarial practice, and requires employers to pay the rates certified. This constitutional provision is a key safeguard to assuring that employer contribution rates are sufficient to fully fund pension liabilities in accordance with the statutorily mandated thirty year amortization schedule.

**[Art.] 36-a [Use of Retirement Funds.]** The employer contributions certified as payable to the New Hampshire Retirement System or any successor system to fund the system's liabilities, as shall be determined by sound actuarial valuation and practice, independent of the executive office, shall be appropriated each fiscal year to the same extent as is certified. All of the assets and proceeds, and income there from, of the New Hampshire Retirement System and of any and all other retirement systems for public officers and employees operated by the state or by any of its political subdivisions, and of any successor system, and all contributions and payments made to any such system to provide for retirement and related benefits shall be held, invested or disbursed as in trust for the exclusive purpose of providing for such benefits and shall not be encumbered for, or diverted to, any other purposes. *November 28, 1984*

The composition of the 13-member Board of Trustees was changed in 2011, eliminating the two members of the legislature, reducing the number of seats held by representatives of employee groups from eight seats to four, and increasing employer representation from one representative of management in local government to four seats for representatives of employer groups. The number of public members appointed by the Governor and Council increased from 2 to 4. The State Treasurer continues to serve as a member of the Board.

All Trustees – with the exception of the State Treasurer, who serves ex officio – are nominated by the Governor for two-year terms and must be confirmed by a vote of the Executive Council. Any newly appointed or reappointed Trustee must have familiarity with or experience in finance or business management. The Governor is responsible to designate one of the public Trustees to serve as Chair of the Board.

**Recommendation:** The Commission recommends the terms of office for members of the Board of Trustees of the New Hampshire Retirement System be changed from two to three years, with a provision for staggered terms to achieve implementation.

Moved by Dr. Gustafson, seconded by former Rep. Christie

Adopted 12-0, October 26, 2017

**Dr. Gustafson’s summary:** The NHRS Board of Trustees has 13 seats. Four members are from employee representative organizations, four members are from employer representative organizations, and four members are independent public members. All these members currently serve two-year terms upon the nomination of the Governor and appointment by the Executive Council. The Treasurer of the State of New Hampshire is an ex officio member and serves by virtue of office. All Trustees must have familiarity with or experience in finance or business management.

With members serving two-year terms, approximately one half of the Board comes up for appointment or reappointment every year. This has presented challenges in keeping Board positions filled and is a near continuous process of bringing forward names for consideration. It is not unusual to have several positions either vacant or in the process of reappointment at any given time. While the NHRS has a highly functioning Board, the short two-year terms work against coherence and continuity.

SB 140, effective on August 15, 2017, established three-year terms for the five members of the NHRS Independent Investment Committee (“IIC”), with the provision for reappointment. Prior to this legislation, terms on the IIC were open-ended. Three members are appointed by the Governor and the Executive Council, and two members from the NHRS Board of Trustees are appointed by the NHRS Board Chair. All IIC members must have extensive professional experience in the field of institutional investments or finance.

Amending RSA 100-A: 14, I. to provide three-year terms for NHRS Trustees would align Trustee terms with those of the Independent Investment Committee, promote continuity, and improve administrative efficacy.

### Independent Investment Committee

The Independent Investment Committee (IIC) was established on January 1, 2009, based on one of the priority recommendations of the Viability Commission.

The five-member IIC manages investments based on the investment policy and asset allocation approved by the Board of Trustees. The IIC continuously monitors and evaluates performance, and makes determinations regarding the hiring and retention of fund managers. Since its creation, the IIC had generated investment returns in the top quintile of the InvestorForce public pension universe, a recognized peer group for public pensions.

Pursuant to RSA 100-A:14-b, the IIC consists of three public members and up to two representatives of the Board of Trustees. Public members are nominated by the Governor and must be approved by the Executive Council. Trustee members are appointed by the chairperson of the Board of Trustees. By law, all IIC members must have “substantial experience in the field of institutional investment or finance.”

Proposed recommendations not adopted:

Add one retired member with the appropriate qualifications to the Independent Investment Committee.  
Moved by Sen. Watters; seconded by Mr. Dunn.

Failed 2-11, October 12, 2017

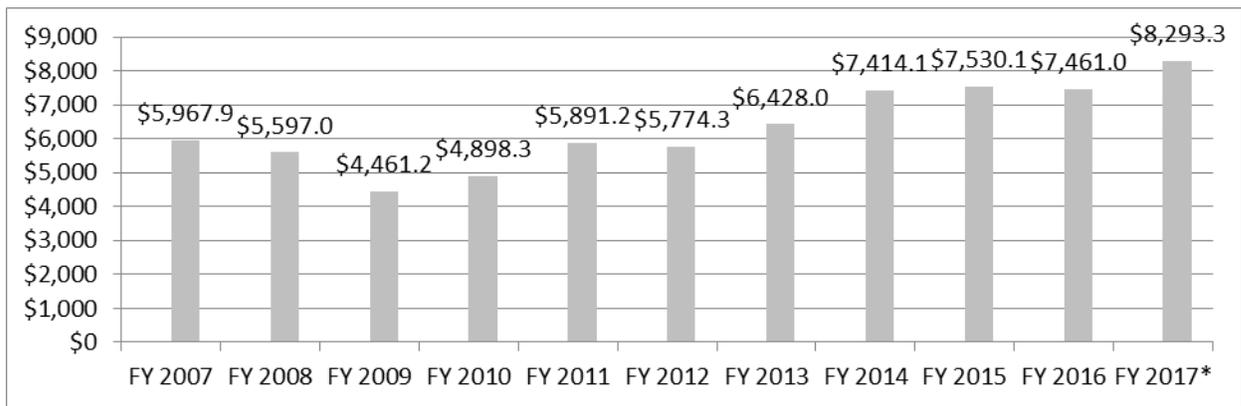
Add one retired member with the appropriate qualifications as a non-voting member to the  
Independent Investment Committee.  
Moved by Sen. Carson; seconded by Sen. Watters.

Failed 4-9, October 12, 2017

### C. Analyze the financial status of the retirement system, and the challenges facing the system in the upcoming decade.

Following the enactment of the Independent Investment Committee (IIC) in 2009 NHRS performed better than 90% of its peers over the three and five-year periods. With a 13.5% gain in FY 2017, the retirement trust was \$8.29 billion (unaudited), an increase of approximately \$820 million over the prior fiscal year. This was the first time NHRS assets have exceeded \$8 billion.

**NHRS Trust Fund Assets 2007-2017**



Source: NHRS

As of 6/30/17 the trust was 61.8% funded, with an unfunded liability of \$5.04 billion. A series of factors resulted in a growth of the trust's liabilities during the decade from 2007-2017, including several inter-related occurrences that increased the UAAL:

- Investment losses during the Great Recession caused NHRS assets to drop from \$5.97 billion in 2007 to \$4.46 billion in 2009.
- Statutorily required experience studies undertaken by the system's actuaries in 2010 and 2015 resulted in adjustments to actuarial assumptions, including reductions in future earnings expectations based on changes in capital markets, including near zero interest rates.
- Ongoing pressure on public budgets resulted in a lag in payroll growth.

Demographic factors unrelated to the recession included improvements in mortality (longevity), particularly among teachers, and a decrease in New Hampshire's school age population, which also contributed to the lag in payroll growth.

Based on actuarial valuations and experience studies and input from the IIC, the NHRS Board reduced the assumed rate of return from 8.5% to 7.75% in 2011 and from 7.75% to 7.25% in 2015. The investment losses combined with the reduced assumptions increased rates for employers.

	2005-10	2011-14	2015-present
Rate of Return	8.50%	7.75%	7.25%
Payroll Growth Rate	4.50%	3.75%	3.25%**
Mortality	RP-2000	RP-2000 with updated mortality projection scales	RP-2014 with updated mortality projection scales

\*\* 3.0% for Teacher group

### Experience of Maine Public Employees Retirement System (PERS): 22% to 80% funded

The Commission heard testimony from Sandy Matheson, the Executive Director of the State of Maine's retirement systems on September 28, 2017. Excerpts:

In 1986 with a study on the retirement plan, the plan was funded at 22% - at that time one of the three worst in the country.... Maine dug in... By 1991, they were up to 36% funded; and by 1995 there was a bipartisan effort to pass a Constitutional Amendment to keep that same thing from ever happening again. And it was very well-received. It passed by 69% of the public vote - they basically in the strongest way possible codified that they were going to pay the retirement plan costs, and today it's 80% funded...

The Constitutional Amendment states that, one; all normal costs have to be paid. No new unfunded liabilities can be created intentionally...So, a new benefit needs to be fully funded, not amortized and funded, but fully funded in the year that it's introduced..." Below are excerpts from a comparison of the New Hampshire and Maine retirement systems:

#### NHRS-Maine PERS Overview as of 6/30/16

	NHRS	Maine PERS
Participants	Employees, Teachers, Police, Fire	Employees & Teachers
Employers	State and political subdivisions	State and school districts
Members	48,000	40,000
Retirees	33,000	34,000
Average benefit	\$20,694 (Group I retirees only: \$17,679)	\$21,302*
COLA	No	Annual increase CPI-U, up to 3%, on the first \$21,475 (indexed)**
Assets	\$7.5 billion	\$10.5 billion
UAAL	\$5.1 billion	\$2.6 billion
Constitution	Requires certified rates based up sound actuarial valuation and practice	Requires Normal cost to be funded on a sound actuarial basis; new unfunded liabilities funded over 10 years (layered)
Amortization	30-year closed (2010-2039) 22 years remaining	31-year closed (1997-2028); 11 years remaining. Layered 10-year amortization of new gains/losses beginning in FY97. (now 20 years)
Funded ratio at start of amortization	<b>57.4% (FY 2010)</b>	<b>51% (FY 1996)***</b>
FY 16 Funded Ratio	<b>60.0%</b>	<b>80.4%</b>
Investment assumption	7.25%	6.875%

\*Maine's benefit formula is based on the highest three years, while NH changed to the highest five years for those not vested as of 1/1/12.

\*\*Prior to cut in 2011, the COLA had been the CPI-U, up to 4%

\*\*\*The constitutional amendment to pay down the unfunded liability took effect in FY 96, when the funded ratio was 51%. However, the commitment to fund the plan really began in the late 1980s when the fund was 28-30% funded. These funding efforts continued throughout the early 1990s and were codified in the 1996 constitutional amendment.

Maine was in a better position to weather the economic downturn of 2008-09 because they started paying down their UAAL much earlier (1996) than NHRS (2010). Director Matheson noted that Maine's consistent commitment to reduce the UAAL is finally paying off, with funding now at 80% and continuing to improve.

The constitutional and statutory structure of Maine's retirement system and their decision to institute a thirty-year amortization schedule for unfunded liability closely parallels the approach taken by the New Hampshire Legislature. Director Matheson's testimony included information about Maine's layered amortization of new gains and losses which will be discussed in Chapter (I): Evaluate the plan for amortization of the unfunded accrued liability of the retirement system and the impact on contribution rates.

## D. Assess any changes to general accounting standards and their potential effect on the retirement system.

The Governmental Accounting Standards Board (GASB) is an independent, non-profit organization that sets financial accounting and reporting standards for state and local governments.

In 2012, GASB approved two new standards – 67 and 68 – for public pension accounting.

Previous GASB standards provided a methodology to measure funded ratios and define the amount of annual required contributions needed to maintain healthy funding of public pensions. The new rules no longer provide a funding standard, they merely tell state and local governments how to account for and report pension liabilities and costs.

GASB 67 took effect for NHRS beginning in the fiscal year ended June 30, 2014. Under GASB 67, NHRS reports two pension liability calculations: the collective Net Pension Liability (NPL) for accounting purposes, and the Unfunded Actuarial Accrued Liability (UAAL) for funding purposes.

GASB 68 took effect for participating state and local governments beginning in fiscal years ending June 15, 2015, or later. GASB 68 requires employers to report their proportionate share of the NPL on their balance sheets and determine pension costs. Audited, employer-level information is posted on the NHRS website for employers and their auditors to access.

In 2015, GASB 74 and GASB 75 were released. These standards deal with reporting of other post-employment benefits (OPEB), which in NHRS' case, is the Medical Subsidy benefit. GASB 74 took effect for NHRS beginning in the fiscal year ended June 30, 2017. GASB 75 will take effect for participating state and local governments beginning in fiscal years ending June 15, 2018, or later. NHRS will make the relevant NHRS-related OPEB data available to participating employers.

By requiring all pension plans to use the same formula to calculate liabilities, the new standards provide a consistent framework for comparing the financial status of different plans. These reporting changes do not impact NHRS employer contribution rates, which are actuarially determined pursuant to the NHRS Actuarial Funding Policy, RSA 100-A, and the state Constitution.

Excerpted from information provided for the 2017 Decennial Commission by NHRS – July 2017

E. Make recommendations for ensuring the long-term viability of the retirement system, including an appropriate funding methodology.

NHRS: A Look Backward and Forward

On November 27, 2017, Jean Pierre Aubry, Director of State and Local Research presented the report he prepared for NHRS on behalf of the Center for Retirement Research (CRR) at Boston College.<sup>2</sup>

Background

The report gave NHRS high marks in several categories relative to its peers in the Public Pension Database, which covers a universe of 170 large state and local plans. NHRS uses the most conservative assumptions for mortality and rate of return, and NHRS’ investment gains exceed most other plans.

The benefits were found to be very modest compared with other plans, particularly because the NHRS plan lacks a COLA. The total normal cost (the estimated annual value of pension benefits as they are earned) is low relative to other plans.

	Employees	Teachers	Police	Fire
Total normal cost	9.16%	9.07%	17.22%	18.85%
Member rate	7.00%	7.00%	11.55%	11.80%
Employer normal cost	2.16%	2.07%	5.67%	7.05%

The report finds that employers are asked to contribute very little to the normal cost for ongoing pension benefits – only 2.7% of payroll compared to the national average of 5.9%.

These findings can be seen in the context of the increases in employer rates in recent years primarily to cover the cost of unfunded liabilities, which comprised 65-78.5% of the employer contribution rate in FY 2018-2019.

Member category	Pension Normal cost	Pension UAAL	Medical Subsidy	Total Employer Rate	UAAL as % of Total Rate
State employees	2.16%	8.92%	1.07%	12.15%	<b>73.4%</b>
Non-state employees	2.16%	8.92%	0.30%	11.38%	<b>78.4%</b>
Teachers	2.07%	13.63%	1.66%	17.36%	<b>78.5%</b>
Police	5.67%	19.66%	4.10%	29.43%	<b>66.8%</b>
Fire	7.05%	20.74%	4.10%	31.89%	<b>65.0%</b>

Because NHRS is a relatively small plan, its accrued liabilities are equal to 4.78 times annual payroll compared to a national average of 6.76. As such, the size of NHRS’ unfunded liability is about average

<sup>2</sup> The Commission voted to accept the report on December 7 with the understanding that the charts and graphs be revised to ensure that they can be copied clearly in black and white.

even though the NHRS has a much lower funded ratio than most plans. NHRS' unfunded liabilities are 1.95 times payroll compared to a national average of 1.81.

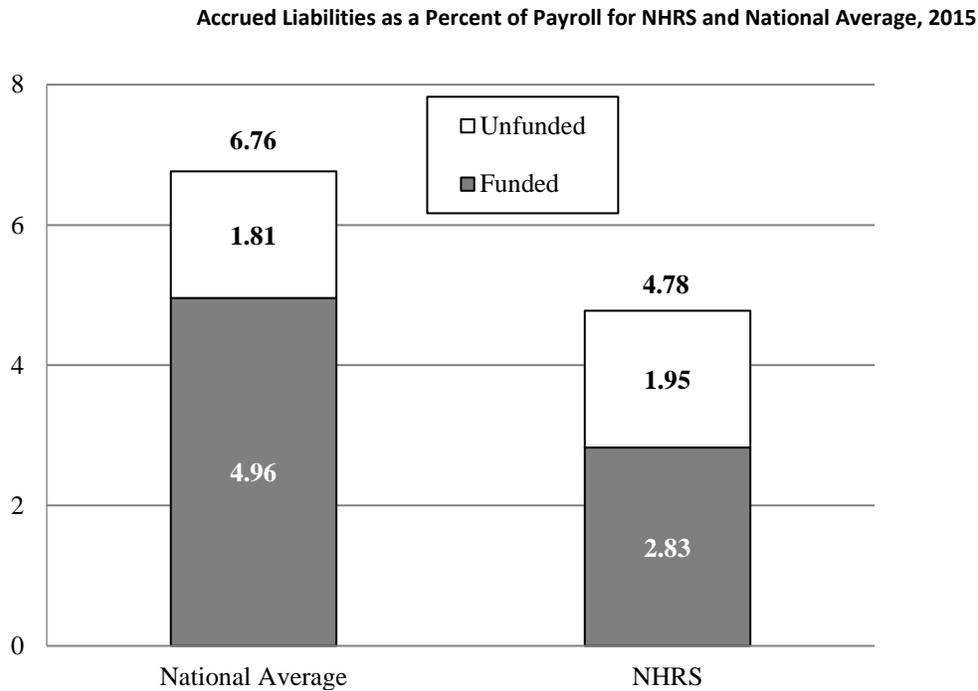


Chart source: CRR Report Figure 3. *Accrued Liabilities as a Percent of Payroll for NHRS and National Average, 2015*. Sources: CRR calculations based on the 2015 NHRS Actuarial Valuation and the *Public Plans Database* (2001-2016).

Because the state and local governments pay relatively little towards newly accruing benefits, and face about average UAAL costs, the total government costs for NHRS is currently about 15% of payroll compared to a national average of about 18%.

#### The UAAL

The report confirmed two of the Commission's findings regarding the two primary reasons for the increase in the UAAL from 2007-2017: investment losses of 2008-09 and revised actuarial assumptions.

### Sources of Change to NHRS' UAAL, 2007-2015

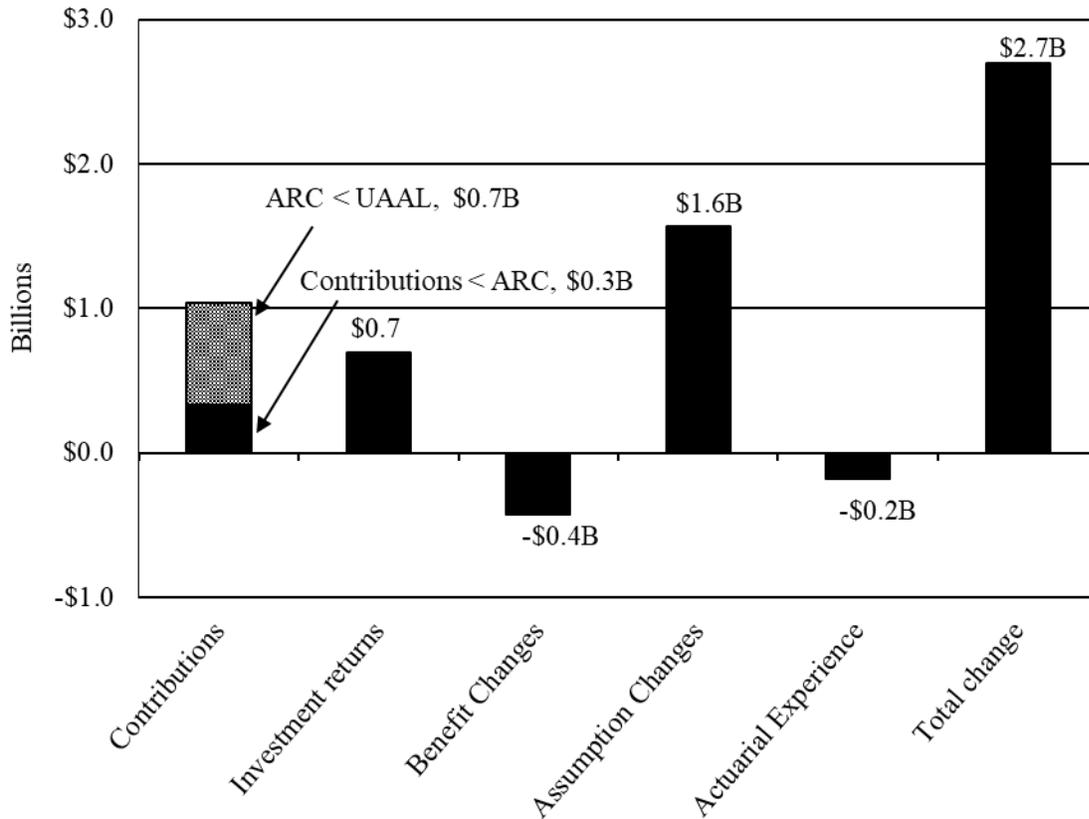


Chart source: CRR Report Figure 1. *Sources of Change to NHRS' UAAL, 2007-2015*. Source: CRR calculations based on various NHRS actuarial valuations from 2007-2016.

Much of the report focused on what CRR identified as a third cause: contributions which were intentionally set at a rate that would allow the UAAL to grow until 2018 (before declining) due to the backloaded amortization policy. The report noted that if NHRS had used level dollar payments, rather than level percent of payroll, the UAAL would have been reduced more quickly.

One of CRR's primary recommendations was to change amortization methods to a level dollar, rather than a level percent of payroll. The report noted that the level dollar is less costly in the long run because it pays down the UAAL more quickly. (The comparisons between the two approaches are presented in Chapter (I): Evaluate the plan for amortization of the unfunded accrued liability of the retirement system and the impact on contribution rates).

Commissioner Hodgdon estimated that the cost difference as \$800-\$900 million. After noting that \$900 million is a substantial sum, Mr. Kaloogian observed that those funds could also be invested to generate additional gains for the trust.

Although noting that the majority of funds use level percent of payroll, as NHRS does, the report identified a risk: if the payroll growth is less than assumed, then the payments may be insufficient.

A white paper published by the Conference of Consulting Actuaries contained a comment supporting CRR's recommendation: "Level dollar could be appropriate for sponsors and plans that want an extra measure of conservatism or protection against low or no future payroll growth." (p. 35)

*Note:* Commission members' commentaries on these topics can be found in Member Commentaries starting on page 71

#### Investment earnings assumption

The CRR report recommended using a "select and ultimate" rate which would be based on two factors – recent experience and expectations for long-term earnings. If implemented properly, the fund would collect more during good times and be able to adjust rates in bad times. Combined with the recommendation to adopt a more aggressive schedule to pay down the UAAL, the select and ultimate rate arguably could result in better funding levels.

#### Consideration of the CRR Report's Recommendations

Commission members discussed the recommendations in the CRR report at length, focusing on the recommendation to move to level dollar amortization. The potential for substantial savings was assessed, considering the significant cost of a front-loaded amortization schedule.

The Commission received a communication from the NH Municipal Association (NHMA) opposing a change from level percent of payroll to level dollar amortization. NHMA estimated that the \$106 million cost which would result in a 30% increase in employer contributions. While acknowledging the theoretical benefit of paying more now to pay less later, NHMA noted that future legislatures can change policy, and that the expected savings may not transpire as expected.

Larry Johansen (NHRS) testified that the change would cost \$106 million in the first year and \$201 million in the next biennium. In the first year, costs would increase by roughly \$20 million for the State and \$78 million for subdivisions. It would also require some administrative changes for both NHRS and participating employers. Commission Chair Dave Hess asked about the history. NHRS Executive Director George Lagos explained that HB 653, passed in 2007, authorized "level" amortization, but did not specify level percent of payroll or level dollar. The choice to use level percent of payroll was not surprising since it was, and continues to be, the most common practice, and that the employers were just beginning to absorb the cost of the change from the Open Group Aggregate to the Entry Age Normal actuarial method. Chair Hess reported that he had spoken with several members of the Viability Commission who confirmed that the choice of an amortization method was not a topic of study during their work.

As the Commission members discussed the potential long-term savings, Senator Watters estimated that the increased cost would be \$520 million over the next eight years, and Mr. Kaloogian estimated that payments would be \$1.4 billion less in the final 14 years. In response to a question by Captain McMahon, NHRS staff responded that they are unaware of any plans that have made such a transition during an amortization period. Commissioner Hodgdon pointed out that recommending a cost increase of that magnitude should not be viewed in a vacuum; that the state budget is constructed by making choices among competing priorities.

The discussion included the concept of intergenerational equity. According to Segal's Public Sector Letter (2011) on Planning a Successful Funding Policy, intergenerational equity "consists of ensuring a fair sharing of the costs of the plan across generations of taxpayers" and that amortization policies involve a balance between controlling contribution volatility and ensuring a fair allocation of costs among generations..." (p. 3)

As Mr. Dunn prepared to make a motion to encourage legislative study of the matter, he noted that such a change would cost the Concord School District an additional \$1.552 million in its budget. Several Commission members spoke about the advantages of a legislative study. Legislative study committees would have more time to examine the matter, and secondly, the legislature is the appropriate body to consider the near term and long term costs, since they need to make the decisions about funding. Some members argued that if the Commission thought the level dollar method had merit, then the motion should reflect that, rather than making a neutral recommendation for the topic to be studied.

**Recommendation:** The Commission sees a potential benefit in a level dollar amortization schedule and therefore recommends that the legislature form a study committee to look at the advantages and disadvantages of moving from a level percentage of payroll to the level dollar amortization plan.

Moved by Mr. Dunn, seconded by Rep. Ohm

Adopted 12-2, November 29, 2017

Mr. Dunn's comments: The Commission adopted this recommendation in recognition of the need for further study by the Legislature of the potential benefits of changing the current UAAL amortization of level percentage of payroll to a level dollar amortization. Taking into account the short period of time that the Commission has had to meet, make recommendations and finalize a report, we do not feel that there has been sufficient time to study this thoroughly. However, the Commission does feel there may be some potential benefit in moving towards this model. Also, taking into account the various bills (i.e. HB 413) that have been introduced to reinstate the State subsidy to municipalities and political subdivisions, it may be worthwhile for the State to consider funding the cost of moving to a level dollar amortization instead of subsidizing the contributions again.

## F. Monitor the sustainability and affordability of cost-of-living increases for plan participants.

A compounded cost-of-living-adjustment (COLA) is an automatic, generally annual, increase to a pension benefit.

A COLA is generally provided “for the purpose of offsetting or reducing the effects of inflation, which erodes the purchasing power of retirement income,” according to the National Association of State Retirement Administrators (NASRA).

A 2016 NASRA Issue Brief outlined a wide variation in the benefit design and administration of COLAs. “The overarching distinction among COLAs is whether they are provided automatically or on an ad hoc basis. An ad hoc COLA requires a governing body to actively approve a post-retirement benefit increase. By contrast, an automatic COLA occurs without action, and is typically predetermined by a set rate or formula.”

Marty Karlon (NHRS) testified that a survey by the Wisconsin Retirement System (2015) looked at some 90 systems around the country and found that 24 of them or about a quarter, including New Hampshire, do ad hoc COLAs. About 42% or 37 have a COLA indexed to the CPI at some trip point. Four have no COLAs at all. Nineteen have an automatic COLA, and three have it tied to investment earnings.

### Background on COLAs in New Hampshire:

The first NHRS post-retirement allowances were granted by the Legislature in 1974, funded through general fund appropriations and/or employer assessments.

In 1983, the Legislature created a Special Account to set aside “excess earnings” for the purpose of providing COLAs and other post-retirement benefits. The Viability Commission found serious flaws in the construction of the gains-sharing mechanism, identifying it as a contributing factor in the growth of the UAAL. Annual earnings more than ½% above the assumption rate were transferred into the Special Account. However, there was no downside protection for the corpus of the trust during years when earnings failed to meet expectations – a situation that Senator Harold Janeway, former Chair of the Independent Investment Committee and Viability Commission member, describes as “heads, I win; tails you lose.” Between 1990 and 2000, approximately \$900 million was transferred to the Special Account.

Addressing both the long-term viability of the trust and the continuation of COLA benefits, the Viability Commission made a series of related recommendations, starting with a transfer of \$250 million from the Special Account to the corpus of the trust. They recommended that no further gains sharing occur until the trust was 85% funded. According to the amortization schedule, the trust would reach the 85% threshold in 22 years. At that time, it was recommended that earnings greater than 10.5% would be divided equally between the Special Account and the corpus of the trust.

Understanding that no new money would be available for 22 years, the Commission made two recommendations to provide COLAs:

- **Build a pre-funded cost-of-living adjustment (COLA) into the defined benefit plan, funded with a 2% increase in employee contributions:** NHRS currently lacks a provision for guaranteed COLAs to protect the value of retirees’ pensions against inflation. The Commission recommends increasing employee contribution rates by 2% in order to fund a new COLA benefit.
- **Provide current retirees with a minimum annual increase:** The new COLA benefit (described above) does not apply to those already retired. COLAs for current retirees must continue to be funded by the Special Account. The remaining \$300 million in the Special Account that is not earmarked for other benefits will be depleted within 2-5 years if COLAs continue as they have in the past. If funds are depleted before new money enters the account, retirees will be without COLAs. Recommendation: Conserve the available funds *and* protect lower income pensioners by providing a 2.5% payment up to the median for each retiree category with a minimum amount of \$500 annually, which would be paid as a “thirteenth check”, increasing at the CPI-U each year. The anticipated cost is \$12-15 million per year.
  - Definition: A temporary supplemental allowance (TSA), sometimes referred to as a “thirteenth check” is a lump-sum payment that does not become a permanent addition to the monthly pension benefit. (RSA 100-A:41-d)

These recommendations were not adopted. The Special Account was repealed in 2012, and the remaining funds transferred into the corpus of the fund. Member contribution rates were increased in FY 2012, but the funds were used to offset an increase in the employer contributions.

#### History of COLAs and TSAs 2007-2017

Year	%COL A	Scope	Cost	Source	TSA	Cost	Source
2007	2.25%	All	\$66.5 M	Special Account	–		
2008	1.5%	On first \$30,000	\$42.1M	Special Account	\$500/1K*	\$14.6M	Special Account
2009	1.5%	On first \$30,000	\$46.4M	Special Account	\$500/1K*	\$14.8M	Special Account
2010	1.5%	On first \$30,000	\$50.9M	Special Account	\$500/1K*	\$15.0M	Special Account
2011	0				\$500/1K**	\$4.5M	Special Account
2012	0				\$500/1K**	\$4.4M	Special Account
2013-2017	0						

\*\$1K TSA if base pension is less than \$20K and retiree had at least 15 years of creditable service; \$500 TSA if retired before 1/1/93; \$500/\$1K TSA if receiving Medical Subsidy

\*\*Only political subdivision employees receiving the Medical Subsidy received a \$500/\$1K TSA (\$300/\$600 for Medicare-eligible political subdivision retirees receiving the Medical Subsidy)

**GRS Supplemental Actuarial Valuation on 1.5% Compound COLA on the first \$30,000**

State of New Hampshire

Employer Pension Rates as a Percent of Payroll - State				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	N/A	25.33%	27.78%
Impact of Proposal	3.59%	N/A	6.74%	6.82%
Proposed 2018-19 Rates	14.67%	N/A	32.07%	34.61%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	21.82	-	5.90	0.30	28.03
FY 2021	22.54	-	6.10	0.31	28.95
FY 2022	23.27	-	6.29	0.32	29.88

Political Subdivisions

Employer Pension Rates as a Percent of Payroll – Political Subdivisions				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	15.70%	25.33%	27.78%
Impact of Proposal	3.59%	4.58%	6.74%	6.82%
Proposed 2018-19 Rates	14.67%	20.28%	32.07%	34.61%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	25.68	55.77	16.21	9.08	106.74
FY 2021	26.52	57.45	16.73	9.38	110.08
FY 2022	27.38	59.17	17.28	9.68	113.51

Increase in Actuarial Accrued Liability Due to Proposal As of June 30, 2015 Increased with Interest to July 1, 2018 (\$Millions)				
Employees	Teachers	Police	Fire	Total*
\$ 547.4	\$ 671.3	\$ 260.8	\$ 109.3	\$ 1,588.8

\*Totals may not add due to rounding

Note: This calculation reflects the costs for a COLA funded by Employers. The percentage rate impact is be greater if funded by Employee contributions, rather than by Employers, since not all Employee contributions remain in the system. (Employee contributions are refunded to those who leave service prior to vesting, or chose to take a refund in lieu of a pension).

**GRS Calculation of the Employee Contribution Rates to fund COLA of 1.5%  
For all Active and Retired Members**

	Employees	Teachers	Police	Fire
Impact of the proposal	4%	5%	7.45%	7.45%
Current member rate	7%	7%	11.55%	11.80%
Total	11%	12%	19%	19.25%

GRS note: This assumes that active members will be paying the cost for current retirees and past services for active members in addition to the normal cost of active members. Note that these rates would be subject to change over time depending on the actual proposal passed, the duration of funding, the actuarial assumptions, and changes in demographics. It is possible that the increases in member rates of this magnitude would affect employers' attraction and retention efforts, members' termination and retirement behavior. This estimate does not take into account those potential effects.

During the discussions on the topic on October 12, 2017, Sen. Carson noted that protecting low income retirees, through the use of a targeted COLA, will become increasingly important because their already small benefits have been further reduced by legislative actions over time.

Stakeholder testimony on September 21, 2017 contained information about the importance of providing inflation protection for aging retirees, as well as correspondence received by the Commission which are summarized in Chapter H.

Commission members discussed the GRS report, and Rep. McGuire made a motion to recommend a \$500 annual TSA, as often as funding allows. Dr. Gustafson suggested taking a creative approach, sharing the cost of a COLA for active members between employees and employers, with the State paying for those already retired. The Chair noted that \$500 is greater than 1.5% for the low-income retirees. Mr. Kaloogian noted that a proposal for a COLA to be funded if funds are available was too vague. Rep. Christie asked if each community should pay for COLAs for its own retirees. Sen. Watters said that the State has already downshifted costs to local communities, arguing that the State should step back up.

**Recommendation:** The Commission recommends that the Legislature make a one-time payment of \$500 per retiree in 2018, and whenever funding is available.

Moved by Rep. McGuire, seconded by Sen. Watters

Adopted 10-4, November 21, 2017

**Rep. McGuire's summary:** This recommendation addresses the problem that a defined benefit pension, however generous it may seem at the time of retirement, is continually eroded by inflation, particularly with retirees living longer and longer (many living 20 or 30 years after retirement) and medical costs rising. Even if a retiree receives Social Security benefits as well, those inflation adjustments have been less than the cost increases experienced by retirees.

A true, compounded cost-of-living allowance (COLA) is prohibitively expensive. Even a modest 1.5% increase on only the first \$30,000 of pension benefits for active and retired members, after compounding, would increase the UAAL by over \$1.5 billion. A one-time temporary supplemental

allowance creates no future obligations, and can be funded in the normal budget process. \$500 is an amount that is large enough to be helpful, while still low enough that the total cost (approximately \$8 million) is reasonable to consider in the context of other demands for funding.

In the long run, funding for extra expenses after retirement will need to be funded by additional employee savings. Even modest amounts saved over a working career, invested in a tax sheltered account, can become substantial sums. However, current retirees and those close to retirement do not have this opportunity.

#### *Further Discussion on the COLA*

Mr. Kaloogian made a motion to establish a cash balance plan as an alternative means to provide COLAs; seconded by Mr. Corrigan. Commission members discussed the motion. Mr. Kaloogian noted that employees would benefit from market gains, and that despite short term downturns, the average annual return is 9-9.5%. Commissioner Hodgdon expressed concern about timing of the downturns and the disparate impact on timing of retirements, noting that the risk is shifted to employees.

Proposed recommendation not adopted: The Commission recommends legislative action to establish a cash balance plan as an alternative means to provide COLAs.

Moved by Mr. Kaloogian, seconded by Mr. Corrigan

Failed 7-7, November 21, 2017

**Statement by Mr. Kaloogian:** It seems everyone is in favor of a COLA to our retirees, but it rarely is provided because of political considerations. The main obstacle is trying to answer the question: 'Where would the money come from?' There seems to be no good answer since we either take it out of other programs and services, or we increase taxes. Overlooked is the wealth generation of the market that can preserve the purchasing power for current employees. Thus an introduction of a Cash Balance plan would result in better benefits and more security for employees than dependence upon budgetary fights. Had this been in place for our current retirees and they utilized the DJIA index funds, they would have received a 25% increase in benefits between November 2016 and today. This is fifteen times more than a proposed 1.5% COLA. There is little to be done for current retirees, however the deterioration of purchasing power is a permanent problem inherent in all defined benefit plans such as the NHRS, yet it can be addressed for future retirees through this method. We need creativity in funding COLAs, and this is one such vehicle for the legislature to consider.

#### **Minority Position Regarding a Cash Balance Plan as an alternate means of providing COLA increases**

Submitted by Commissioner members Howard Kaloogian, Dennis Corrigan, Dave Hess, Rep. Bill Ohm Rep. Carol McGuire, Brian Gallagher, Cathy Stacey, and Kelly Espinola

Social Security is a Defined Benefit plan covering almost everyone in the country. Yet we have been told you cannot depend upon Social Security alone for a comfortable retirement. *This is because all Defined Benefit plans without automatic and unlimited COLAs are limited benefit plans that will lose purchasing power over time.* Everyone knows you must have your own money saved and invested to supplement

Social Security. Given time, money invested through retirement vehicles such as IRAs, Roth IRAs, 401(k)s, and 403(b)s supplement Social Security income. Unlike “special accounts” tried in the past, what is proposed here is a supplement to the limited benefit of NHRS similar to these retirement vehicles.

Harnessing the virtually unlimited power of market investments allows for compounded growth to provide independent income for the retiree and create intergenerational wealth for the retiree’s family.

We have done a disservice to our civil servants when we have led them to believe they can rely upon the NHRS defined benefit plan alone for a comfortable retirement that keeps pace with inflation. COLAs are economically necessary to keep pace with inflation when a retiree only has a limited benefit plan. Yet it is politically difficult to provide COLAs because the retiree is not the only one placing a demand upon government revenues.

To provide a COLA, one must make a political calculation, not an economic decision. Do you take revenues away from schools, reduce support for police and fire, divert funding for road construction and maintenance, eliminate social welfare programs, contract Medicare funding, delay opioid addiction services, rob from the general fund, or go back to the taxpayer for yet more revenue? The retiree asking for a COLA payment is only one of an unending list of special interests making demands upon the limited resources available. Recent history proves retirees lose this political argument more often than not. Commissioners craved creativity in funding COLAs; this approach is it.

Limited benefit plans such as NHRS have inherent and permanent problems. The older a person is the more difficult solving this problem becomes, which is why the private sector allows larger contributions into retirement plans for older participants to “catch up.” Hope is only found with the wealth generated by investments given time. This is money nobody else has a claim upon. Current employees would have a percentage of their pay set aside in an investment pool for themselves. New hires would benefit from having the greatest amount of time to accumulate wealth.

Over the long term of a career the market generally returns 9% to 10% growth (*including the historical downturns*), when dividends are reinvested, allowing savings to double in value every 7 or 8 years. If a person experiences the time of four doublings in a career of 32 years, the result is: \$1 becomes \$2; \$2 becomes \$4; \$4 becomes \$8; and in the last time increment \$8 becomes \$16. Clearly this time compounding, market generating wealth retains purchasing power and keeps pace with inflation unlike any other source we could find. According to economist Larry Kudlow writing for CNBC on Dec.2: “Booming stock market gains of roughly \$6 trillion” has been added to the wealth of Americans of late. Yet that new-found wealth did not increase the purchasing power of our retirees because they don’t currently have a cash balance account. Let’s not condemn our current civil servants to retire with the same purchasing power insecurity as our system retirees. Enacting this long term solution interrupts the cycle of continually retiring workers into a limited benefit without hope of maintaining purchasing power by building up wealth for our current workforce.

Questions raised by Commission members:

How would the savings be held? It would be anticipated that a series of funds could be offered, such as Vanguard or Fidelity, for the employee to choose among. The fees for maintaining these accounts are already being absorbed by the fund houses in their standard fee structure, so no additional

management fee would be incurred by the system. No overhead or tracking or accounting would be necessary once the funds are deposited with the fund family because all of that service is part of what those investments offer. The last 12 months' increase in the Dow Jones Average is approximately 25%, which if captured by an employee's savings would provide increased purchasing power upon retirement without taking money away from other needed services nor fleecing the taxpayer. The Nebraska Cash Balance Plan is one model of a highly-successful well-functioning Cash Balance Plan.

Does this shift investment risk from the taxpayer to the employee? The employee bears risk now but without control over the funds invested. Consider what happens when the current fund experienced poor performance: Healthcare subsidies are frozen or reduced, employee contributions are increased, retirement ages are extended, COLAs are not granted — even the highly touted Maine plan experienced poor investment performance and eliminated the automatic COLA as a response — and benefits are reduced when possible. The written testimony of retired teachers Jon and Betsy Emerson dated 10-25-2017 stated “Since we retired in 2000 my take home pay was \$1,768 per month. Seventeen years later it dropped to \$1,185 ... My wife went from \$915 to \$1,032 in those 17 years.” The undated written testimony submitted by Captain Arthur Beaudry, from the NH State Permanent Firefighters' Retirement Association, outlined a series of decreased benefits over time precipitated primarily by poor investment performance. The advantage of a Cash Balance approach is the employee has control and could move his savings into different sectors (including funds that move inverse to the major indexes for bear markets) offered within the plan seeking the best performance, or even move to cash such as a money market fund, to meet the employee's investment-risk profile.

Where would the funding come from? With all questions about funding, ultimately this is left up to the legislature. However other states have created a system that the employee would set aside a portion of their income to be matched by the employer (or the state) on a dollar for dollar basis. That way the employees make an immediate 100% gain on their savings, and are provided the same incentive to save as the private sector has in most cases.

## G. Study other matters deemed necessary by the commission.

General changes to the statute that establishes the Decennial Retirement Commission

**Recommendation:** The Commission recommends amending the statute that establishes the Decennial Retirement Commission to extend the time period for the work of the Commission to permit the work of the Commission to begin earlier and thus provide more overall time for its work; no specific timeframe recommended.

Moved by Mr. Corrigan, seconded by former Rep. Christie

Adopted 13-0, October 12, 2017

**Mr. Corrigan's summary:** The Commission unanimously felt that it has been unduly rushed to comply with its statutory deadline and still consider all relevant issues in sufficient detail. Some other states that implement similar commissions and committees allocate a whole year to complete their work. States with longer timeframes for retirement commissions may tend to receive and implement recommendations that are better considered and more far reaching after hearing in-depth testimony and reports unavailable in shorter timeframes such as the one this Commission was forced to operate under.

Proposed recommendation not adopted: The Commission recommends amending the statute that establishes the Decennial Retirement Commission to require the Commission to be convened every 5 years rather than every 10 years.

Moved by Mr. Corrigan, seconded by Rep. Christie.

Failed 3-10, October 21, 2017

**Statement by Mr. Corrigan:** If the Commission were next convened five years from now, there would be time to react to events that may occur in the intervening time that are serious and consequential. By waiting ten years we may find it too late to adjust the course of the NHRS.

### *Consideration of other topics*

On October 19, 2017, the Commission considered looking at alternative plans such as Defined Contribution (DC) and Cash Balance (CB) plans.

Mr. Corrigan suggested looking at the history of what other states have done regarding plan design, other than defined benefit plans, particularly for new hires. He also suggested consideration of calculating the plan liability at a risk-free rate.

Chair Dave Hess asked Commission members to consider Mr. Corrigan's suggestions, under the protocol requiring a six-vote minimum of Commission members supporting a topic for inquiry.

Commission members considered the matters. Several members spoke in favor of extending the scope of the Commission's work to consider alternative plan designs. Others opposed the idea, noting that it exceeded the scope of the charges, and covered topics previously studied by recent legislative committees. Following extensive discussion, six members supported receiving information regarding alternative plan design, but only one member supported further inquiry into the risk-free rate. The following section summarizes information the Commission received concerning alternative plan design, and the discussion by Commission members concerning the plans.

## Discussion of Cash Balance and Defined Contribution Plans

### *Cash Balance Plans*

**Background:** According to the U.S. Department of Labor, "A cash balance plan is a defined benefit plan that defines the benefit in terms that are more characteristic of a defined contribution plan. In other words, a cash balance plan defines the promised benefit in terms of a stated account balance." As with other types of retirement plans, cash balance plans vary in terms of required employee and employer contributions, benefit accrual rates, vesting periods, normal retirement eligibility requirements, etc.

**Legislative history:** HB 455 (2013) to study a cash balance plan was killed in the House; HB 556 (2015) to establish a cash balance plan was sent to the House Special Committee on Public Employee Pension Plans (SCOPEPP) and subsequently recommended for future legislation. HB 1673 (2016) to establish a cash balance plan was tabled. HB 631 (2017) establishing a cash balance plan for new hires is being retained by the House Executive Departments and Administration Committee.

Commission Chair David Hess provided a briefing document which is posted on the Commission's website, and summarized below:

- HB 631 would create a cash balance plan for all new state employees hired after the effective date, and would be optional for political subdivisions. If local governing bodies vote to adopt the plan, employees hired after that date could be enrolled. The plan would not be retroactive for current employees of the state or subdivisions.
- The plan would be administered by the NHRS Board and invested in the same manner as the funds for the current defined benefit plan.
- Adoption of the plan would have no effect on existing employees or their benefits.
- Both employee and employer contributions would remain the same, as needed to pay the UAAL for the current plan.
- Plan details are based on the Nebraska Cash Balance Plan, which started in 2003 was fully funded at the end of 2015, with average annual growth of more than 7.90%.
  - Employees in the new cash balance plan would receive a guaranteed minimum 5% rate of return on the contributions by both employees and employers. (see handout for detailed criteria for crediting up to 10%)
  - Employee contributions are immediately portable; employer contributions are portable after a vesting period of 5 years.

- Employers and employees share the gains and the risk; some employees could receive less than in a traditional DB plan, while others may receive more.
- Transition costs are estimated to be \$200,000.

In discussion by the Commission, Dr. Gustafson referred to the articles that he provided, noting that the plans shift the risk from the employer to the individual. He cited a study by the Economic Policy Institute which found that cash balance plans provide more valuable benefits to younger workers and job leavers than to older workers and career employees.

Commissioner Hodgdon referred to a Bureau of Labor Statistics chart from March of 2017 that reported a participation rate in Defined Benefit plans of 84% for state government and 87% for local government showing a strong belief in this type of retirement plan for government employees. She spoke to the need for reliance on stability and security of DB plans for state employees and the ability to retain those employees. Because Cash Balance plans such as Nebraska's only require a 5% return, in poor performing markets, government employees' pensions suffer with the liability risk shifted to them which government employees are poorly positioned to handle. If they are near the end of their government service, there isn't time for the market, and thus their pensions, to recover sufficiently. Average pension payments for government employees are \$20,694 as reported in 2016.

### *Defined Contribution Plans*

Legislative history: HB 369 (2015/2016), establishing a defined contribution retirement plan for public employees. HB 369 was initially re-referred for Interim Study in 2016.

After Interim Study: Committee report: Not Recommended for Future Legislation, vote 13-0

Special Committee on Public Employee Pension Plans Committee Report: Closing the defined benefit plan would substantially increase the unfunded actuarial accrued liability of the NHRS by hundreds of millions of dollars - possibly more than \$1 billion. Because of those increased costs, which would have to be borne by the employers in the present system, the committee does not recommend this bill for future legislation.

Commission member Dennis Corrigan encouraged reconsideration of a defined contribution plan, noting that few establishments in the private sector provide defined benefit plans. He reasoned that New Hampshire taxpayers while lacking such benefits for themselves were paying for a DB plan for public employees. He cited a series of studies about states that have recently moved to DC or hybrid plans, and a study that indicated the transition costs from a DB to a DC plan were overstated. Mr. Corrigan's complete statement, including resource links, is included in the Commission documents.

Commissioner Hodgdon noted that the transition to DC plans is expensive because new hires are diverted into the DC plan, so those contributions are no longer available to help pay the UAAL. Also, the investments in the DB plan need to be more conservative which limits potential investment gains: without new hires in the plan, most members are now closer to retirement and the plan needs to maintain liquid assets. Dr. Gustafson also pointed out that these other plans lack disability and death benefit coverage that is provided with the NHRS DB plan.

*Note:* A member commentary on these topics can be found in Member Commentaries on page 76.

## State of New Hampshire Deferred Compensation Program

On November 9, 2017, The Commission was briefed by Craig Downing, Executive Director of the State of New Hampshire's 457(b) Public Employee Deferred Compensation Plan. Authorized RSA 101-B, the Plan is governed by a 9-member Commission, which is responsible for selecting a Plan vendor. The current plan provider is Empower Retirement. No state funds are expended, and no employer contributions are permitted.

The Plan currently has more than 7,000 participants with \$340 million in assets. It is available to all state employees; political subdivisions may also elect to enroll their employees – at least 33 cities, towns, counties and/or school districts currently offer the Plan to their employees. Due to the economies of scale, the Plan can negotiate low fees while offering a selection of investment choices for participations.

Since enrollment is voluntary, only 24% of eligible employees were in the Plan when Director Downing's position was established in 2013. He described his outreach efforts including the "Give Your Retirement a Raise" and "National Retirement Security Month" campaigns, which have increased enrollment to 35-36% of state employees. However, he noted that New Hampshire's plan still lags the industry standard of 40-45%.

Director Downing explained the use of auto-enroll and opt-out features, as well as auto-escalate provisions that have been proven to increase participation and improve savings rates to build the third leg of the stool for retirement. (It was noted that New Hampshire's police officers and firefighters don't participate in Social Security, so a deferred compensation plan is a second leg for them.)

Rep. McGuire moved that the Commission recommend future legislation that would allow auto-enrollment and auto-escalation. She noted that those are the most useful ways to encourage people to have a relatively substantial amount of money when they retire. Seconded by Sen. Watters.

Discussion on the motion included the clarification that political subdivisions would not be required to offer the State's Plan, but if they chose to do so, their employees would have the right to opt-out. Questions were also raised about the role of collective bargaining agreements in implementing opt-out and auto-escalate provisions, and if such a supplemental plan could make up for the lack of a COLA. The Commission decided to revisit Rep. McGuire's motion in a subsequent meeting.

The National Association of Government Defined Contribution Administrators (NAGDA), reported a "stick rate" of 87-97% of the auto-enrollments in five state plans. The report noted that California used the collective bargaining process to negotiate auto-enrollment, while others made the change legislatively.

Commission work on this topic resumed on November 20, 2017 and Rep. McGuire reintroduced her motion, with Sen. Watters seconding.

Proposed recommendation not adopted: The Commission recommends future legislation that authorizes, for new employees of employers who are participating in the State's 457(b) Public Employee Deferred Compensation Plan, automatic enrollment and automatic escalation based on increases in pay. An opt-out provision shall apply to new and existing employees shall have an opt-in requirement. The provision shall be in accordance with applicable labor agreements.

Moved by Rep. McGuire, seconded by Sen. Watters on November 9; vote deferred to a later date.

Failed 7-7, November 20, 2017

### **Minority Position Regarding Auto-Enrollment and Auto-Escalation in the State's 457 Plan**

Submitted by Rep. Carol McGuire, Dave Hess, Brian Gallagher and Rep. Bill Ohm

The voluntary 457 plan is a state sponsored, tax advantaged retirement savings plan. All state employees are eligible to participate; municipalities may join the plan and then their employees are eligible. This type of plan is the easiest and most effective way to accumulate additional funds for retirement, since even a small contribution over one's career can grow to a substantial sum at retirement. However, participation is quite low.

Recent studies have shown that the most effective way to increase participation is to have auto enrollment and auto escalation, that is, to sign up new employees as the default, and increase the percentage of pay sent to the plan when salaries increase. Even with the appropriate opt-out provisions, this combination gets and keeps most employees in the plan so they accumulate savings in addition to their pensions.

Since the NHRS is unlikely to provide any true COLA in the foreseeable future, employees should be encouraged to provide protection for themselves, and this plan is a very good way to do so. It is more cost effective than most savings plans, and the tax advantaged feature ensures compounding. By going to auto enrollment and auto escalation, employees are more likely to retire with a cushion to deal with inflation.

H. Seek technical assistance as necessary from the New Hampshire retirement system and from other independent financial, investment, actuarial, and retirement experts.

*Subject to available appropriations, the commission may employ support staff for the purposes of its duties.*

The Commission gathered documents and heard testimony from many sources which are listed below. All documents were publicly available on the Commission's webpage during the Commission's work, <http://www.gencourt.state.nh.us/statstudcomm/committees/1343/default.html> and will continue to be available through the archives of House Committee Services on the 4th floor of the Legislative Office Building. A complete list of source documents is in the Appendix.

- A. Primary documentation included reports, briefs, and testimony by NHRS staff and the fund's actuary Gabriel Roeder Smith & Company (GRS). NHRS Executive Director, Public Information Officer, General Counsel, and Director of Investments regularly provided testimony for the Commission.
- B. Other Sources:
  - a. Testimony and documents from the National Association of State Retirement Administrators (NASRA), and the Maine Public Employees Retirement System (PERS). The input is excerpted or summarized under the relevant charges.
  - b. Documents were also provided by Commission members including Public Members David Hess (Chair), Dennis Corrigan, Linda Hodgdon, and Howard Kaloogian, and NHRS Board Chair, Dr. Gustafson. The input is excerpted or summarized under the relevant charges.
  - c. Testimony and documents from stakeholders summarized in this chapter.
  - d. Correspondence from organizations and members of the public summarized in this chapter.
- C. House Committee Services.
  - a. The Commission relied upon House Committee Services for a range of duties and staffing of the Commission.
  - b. House Committee Services also provided document management, duplication, and web posting.
- D. The Legislative Budget Assistant provided stenographic and transcription services.
- E. An appropriation of up to \$100,000 was included in the 2017 budget to pay for additional services.<sup>3</sup>

A total of \$64,867 was ultimately expended as follows:

- a. Actuarial calculations by NHRS Actuary Gabriel Roeder Smith & Company - \$23,135
- b. Report by Boston College's Center for Retirement Research - \$33,132
- c. Compilation of the Commission's report by Kate McGovern - \$8,600

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<sup>3</sup> Summary of expenditures approved on October 12, 2017

- Assess the cost of a one-time TSA of \$500 for all retirees who have been retired for 5 or more years, including disability retirees
- Estimate of the cost of calculating a 1.5% COLA on the first \$30,000 of pension benefit for all retirees, including disability retirees
- The cost of eliminating the age 65 reduction and the cost of deferring it to age 67
- Authorize the Chairman and Co-Vice Chairs to negotiate a final agreement with the Center for Retirement Research at Boston College to examine specified issues relating to the NHRS performance and assumptions over the past 10 years, next 10 years and potentially up to 2039. Moved by Sen. Carson, seconded by Rep. McGuire, adopted 12-0, October 12, 2017
- Direct Chairman Hess to hire a staff person to prepare a final report; authorized no more than \$25,000 for the work. Moved by Sen. Watters, seconded by Dr. Gustafson, adopted 12-0, October 12, 2017

## Summary of Input from Stakeholders' in Testimony to the Commission

Testimony was provided by: NH Retired State Troopers Association (NHRSTA) by Major Ernie Loomis (Ret); NH Police Association by Lt. Patrick Cheetham; New England Police Benevolent Association (NEPBA) by Steve Arnold; NH State Employees Association/SEIU Local 1984 by Richard Gulla; National Education Association-NH by Megan Tuttle; Retirement Security Coalition and Professional Firefighters of NH (PFFNH) by William McQuillen; NH Municipal Association (NHMA) by Barbara Reid and Dave Caron; NH Permanent Firefighters Retirement Association by Arthur Beaudry.

Below is a summary of the major themes with excerpts from testimony to the Commission:

### Status of the System

"In the years since the last Commission's report, many of the suggestions have been implemented in whole or in part, and the NHRS total assets stand at \$8.178 BILLION as of June 30, 2017... its highest total in history. It is not broke, nor broken. The 30-year amortization plan is working toward fully funded by 2039." (NHRSTA)

"I ask that the Commission recommend we allow the changes made to the NHRS both in the legislature and in the courtroom take effect...we are approximately 8 years into the 30-year amortization of the unfunded liability. Much like a home mortgage as it matures, we will begin to see serious reductions in the unfunded liability in just a few short years." (NHPA)

"The mortgage is being paid. The changes have been made and now let's just stop tinkering and let's see how these changes play out as the years move on." (NEPBA)

"The Retirement System didn't get into trouble overnight and there is nothing that you can do to fix-it overnight. Please be very careful, very careful not to take the system off its 30-year course to rebuild the funding capacity that provides continued benefits for many generations." (SEA/SEIU)

"Leave the system alone, and the UAAL will be fully addressed. The checks and balances put in place within the system allow for accurate, deliberate and thorough accounting practices which keep the system on track to fulfill the UAAL in 2039.... We implore the Decennial Commission to state in its final report that no further structural changes to NHRS for current and future members of the system are necessary..." (RSC)

"Our members are very supportive of having a strong, secure, solvent and fiscally healthy and sustainable Retirement System that both provides security for employers and for employees..." (NHMA)

### Economic Impact of NHRS Pensions

Every year the National Institute on Retirement Security provides an economic impact profile for every state across the country. In 2016, NIRS research concluded that for every dollar of taxpayer contributions through employer rates, a net \$6.33 of economic impact is made on the NH economy. Also, retiree expenditures stemming from state and local pension plan benefits supported 6,026 jobs in the state. The total income to state residents supported by pension expenditures was \$302.9 million..." (RSC)

### Impact of Benefit Reductions in Recruitment and Retention

"I have heard from police departments around the state that they are losing currently certified candidates to Massachusetts because the pay, benefits, and pensions are now better in the Commonwealth...This phenomenon has NEVER occurred with such frequency until recently." (NHPA)

"A stable, secure, and predictable pension attracts good minds to the education profession...While educated students are the foundation of our future, ensuring that the best and the brightest teachers are in the classrooms that teach is crucial to their success." (NEA-NH)

### The Loss of State Subsidy to Political Subdivisions

"The Legislature also made our municipalities suffer by removing their 35% State contribution. This cost shift was not only hurt the cities and towns financially, that burden was passed onto the taxpayers, and our employees got hurt again. As residents, we are also taxpayers." (NEPBA)

"...our coalition has endorsed and continues to advocate for the implementation of bills, such as House Bill 413, reinstating the State's subsidy of the employer contribution rates of 15% of the cost of the total rate." (RSC)

"The elimination of that 35% contribution was the biggest financial hit they have taken in decades...if the state had continued the 35% contribution, then municipalities, school districts, and counties would have paid \$80 million less in pension costs in fiscal year 2016." Funding for the resumption of the subsidy would be from the same sources as the funding prior to 2011. (NHMA)

### COLAs

"All state retirees are paying increased deductibles and co-pays on medications. Since there has not been a COLA of any type since 2010...the majority of pension recipients are seeing a constant erosion of the total benefit." (NHRSTA)

"Our pensions are getting cannibalized by the high-rising health costs" (NEPBA)

"We cannot forget our retired employees who have not received a COLA since 2010, or the fact that our state's police officers and firefighters do not contribute to nor receive Social Security benefits." (NHPA)

"Remember those Police and Firefighters that were injured in the line of duty and those that gave the ultimate sacrifice and gave their lives. Those members to no fault of their own couldn't complete 20 years of service." (NHPFRA)

(testimony about a retiree) "During winter months he had to choose whether he's going to take his full allotment of medication, or if he was going to put food on his table at night for dinner, or if he was going to turn his furnace on to keep warm. Members who dedicated 30 plus years of public service should not have to worry about that in the retirement years. They just should not have to worry about that." (SEA/SEIU)

"We urge the Commission to reject any consideration of employer funding for cost of living adjustments (COLAs)...as we believe these would violate the unfunded mandate provision of Article 28-a." (NHMA)

### Age 65 Reduction for Group I

“Ideally the reduction should be eliminated; but at the very least, the reduction should be tied to the age of eligibility for full Social Security benefits.” (SEA/SEIU)

“The age for collecting Social Security benefits has risen and as a result the age 65 pension reduction is no longer partially offset by those Social Security benefits. This situation simply is not sustainable. It's unjustifiable.” (NEA-NH)

### Excerpts from Correspondence received by the Commission

#### Correspondence on behalf of Organizations

NH School Boards Association (NHSBA) from Barrett Christina, Executive Director. NHSBA supports the continuation of a strong, secure, solvent, and sustainable NHRS. To address employer rates: change the AFC from 3 years to 5 years for all members retiring after 7/1/16, share the cost of any growth in the UAAL since 2007 equally between employees and employers, and reinstate the state's share of the employer contributions.

NH Retirement Security Coalition (RSC) from William McQuillen. RSC submitted 4 reports documenting the value of defined benefit plans to employees, employers, and taxpayers. Excerpts: “Dismantling pensions, which is often advocated on the grounds of ideology or misleading information, harms taxpayers economically” (NCPERS, 2017); “Economic efficiencies of defined benefit (DB) plans...deliver the same amount of lifetime income for about half the cost...from a typical DC plan.” (NIRS, 2015).

NH Municipal Association (NHMA) opposed changing from level percent of payroll to level dollar amortization. NHMA estimated that the \$106 million cost would result in a 30% increase in employer contributions, which they described as “devastating.” While acknowledging academic and theoretical arguments in favor of spending more now to stabilize rates later, NHMA noted that “from a practical standpoint, no such promise can be made. As our members have experienced many times...any financial “promise” from the state is kept only to the extent the next legislature decides to do so. Because of this, our members would be hard pressed to accept the premise that paying a lot more into the system now will pay off in the long run.”

#### Correspondence by Individuals

Retirees sent messages to the Commission to urge action on a COLA and the age 65 reduction for Group I. Each of these documents was posted on the Commission's website and referenced in the Appendix to this report. Below are excerpts from the messages grouped by topic:

##### COLA:

“People, such as me, have devoted their professional lives serving New Hampshire and its communities for 20, 30, and even 40 years. But yet, the state's Retirement System ignores these public servants who are now on fixed incomes, by not providing an annual COLA which would allow them to live out their remaining years in dignity.”

“It is time for New Hampshire to apply some of the investment returns to the membership to more closely reflect the increase in living costs to the membership.”

“I am a retired state employee since 2006. In the past 11+ years that have transpired I have received a single 1% increase in my pension. By 2018, taking into consideration inflation, I effectively have had my pension cut by 25% given the compounding nature of inflation...if this continues, in ten years my pension will be cut by 36%... Retirees are elderly human beings. There is little most of us can do to obtain other income, especially many of us who have health and other physical issues, as some of my former coworkers struggle with.”

“I've been retired since 2006 and receive a small pension from NHRS...There have been no increases in over 7 years... There is a proposal in this year's Decennial encouraging a small increase. The \$500 will cover the orthotics I will need to purchase at \$395 that is not covered by Medicare. If I can keep walking, then I can keep taking care of myself...”

“You realize that 17 years ago we did not retire with the kind of salaries being received today. I never felt I would get rich as a teacher, but I certainly take much pride in the lives my wife and I have touched over all our years in the profession... Please forgive my hand written letter, but at the age of 78 my eyesight doesn't quite cooperate for me to type on my computer.”

#### Age 65 reduction:

“Why hasn't this antiquated legislation been repealed? This seems like age discrimination, doesn't it?”

#### Pension benefits for police:

“A good and fair retirement system is both an enticement and a reward for getting the most qualified candidate to take on this important role in society. Please remember this job can kill or cripple a person. Those fortunate enough to make it through to retirement oftentimes face health problems as a direct result of the stress faced on the job.”

#### Funding:

“This citizen asks you to broach a financial compromise that honors our promises and preserves assets-on-account for all of today's contributors, whether non-vested or vested alike.”

“Index funds outperform aggressively managed funds approximately 80% of the time and they cost less.”

## I. Evaluate the plan for amortization of the unfunded accrued liability of the retirement system and the impact on contribution rates.

The Viability Commission identified a series of causes for the growth of the unfunded actuarially accrued liability (UAAL), and recommended the amortization of the UAAL over a 30-year period, to be completed in 2039.

Using the method of level percent of payroll, the UAAL is projected to begin to decrease in 2018, is scheduled to reach 80% of funding in 2031, and is planned to be paid off in full in 2039. The payment schedule is below.

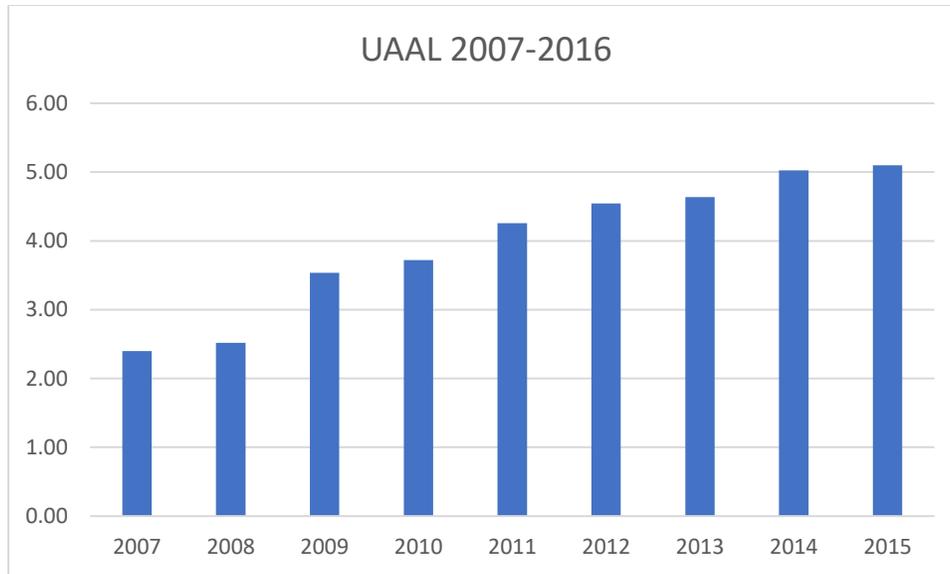
### Amortization of the Unfunded Actuarial Accrued Liability

#### Level Percent Amortization (in millions) As of 6/30/15

Year	FY ending June 30	Employer Rates for UAAL	Projected Payroll	UAAL at start of year	UAAL payment	UAAL end of year	Beginning of year funded ratio
	2016	10.82%	\$2,656	\$5,023	\$287	\$5,089	59.2%
	2017	10.82%	2,739	5,089	296	5,151	59.2%
1	2018	12.54%	2,825	5,151	354	5,158	60.3%
2	2019	12.54%	2,913	5,158	365	5,153	61.5%
3	2020	12.54%	3,004	5,153	377	5,137	62.8%
4	2021	12.54%	3,098	5,137	389	5,107	64.1%
5	2022	12.54%	3,196	5,107	401	5,062	65.4%
6	2023	12.54%	3,297	5,062	413	5,000	66.7%
7	2024	12.54%	3,401	5,000	427	4,921	68.1%
8	2025	12.54%	3,508	4,921	440	4,822	69.6%
9	2026	12.54%	3,618	4,822	454	4,702	71.1%
10	2027	12.54%	3,732	4,702	468	4,558	72.7%
11	2028	12.54%	3,850	4,558	483	4,388	74.3%
12	2029	12.54%	3,972	4,388	498	4,190	76.1%
13	2030	12.54%	4,097	4,190	514	3,962	78.0%
14	2031	12.54%	4,226	3,962	530	3,700	80.0%
15	2032	12.54%	4,359	3,700	547	3,402	82.1%
16	2033	12.54%	4,497	3,402	564	3,065	84.3%
17	2034	12.54%	4,639	3,065	582	2,684	86.6%
18	2035	12.54%	4,785	2,684	600	2,257	89.1%
19	2036	12.54%	4,935	2,257	619	1,780	91.6%
20	2037	12.54%	5,091	1,780	638	1,247	94.3%
21	2038	12.54%	5,251	1,247	659	656	97.1%
22	2039	12.54%	5,416	656	679	-	100%

Source: GRS Actuarial Valuation of 6/30/15

CRR report found that “the majority of the relatively modest pension costs for NH governments stem from the existing unfunded liability, and that since 2007, the UAAL has grown by about \$2.7 billion” (p. 3). The causes for the increase are discussed in Chapters A, C and E, and in the CRR report. The growth of the UAAL is shown in the chart below:



Source: NHRS Funding History, 2007-16

2007: First valuation using Entry Age Normal actuarial method

2008: Poor market return offset by smoothing, \$250M transfer from Special Account

2009: Financial crisis/Great Recession

2011: Revised assumptions\*; significant legislative changes

2015: Revised assumptions\*

Source: Annual actuarial valuations. See, <https://www.nhrs.org/funding-and-investments/reports-valuations/annual-report-archive>

\*Key actuarial assumption changes

	2005-10	2011-14	2015-present
Rate of return	8.5%	7.75%	7.25%
Wage inflation	4.5%	3.75%	3.25% for EE, P & F; 3% for teachers
Mortality	RP-2000	RP-2000 with updated mortality projection scales	RP-2014 with updated mortality projection scales

The Commission considered various approaches for reducing the UAAL, but funding sources that other states have used, such as pension obligation bonds (POBs), would not be suitable for NH. Commissioner Hodgdon noted that the use of POBs would have a negative impact on the state's bond rating and would impede the state's capacity to bond for necessary projects.

Following the presentation of the CRR report, Commission members asked additional questions about payroll growth assumptions, since the level percent of payroll amortization schedule relies on assumptions that payrolls will continue to grow. Larry Johansen (NHRS) noted that the payroll trends are continuing to recover in the employee, police, and fire categories, currently at a rate exceeding the NHRS 3.25% assumption. This is consistent with information provided by Keith Brainard (NASRA) concerning national trends indicating that, although lagging behind the recovery of private sector payrolls, public payrolls are now recovering. CRR reported that almost half of the plans assume annual payroll growth of between 3.5% and 3.9%. (p. 17)

The trend in teacher payroll in New Hampshire, however, requires specific attention to assess the changes in head count and pay. NHRS' current assumptions set the teacher growth rate at a quarter percent less than the other categories, but it may need to be reduced further, since recent growth was

only 0.7%. NHRS' actuary, GRS, is conducting a study on this matter, and information will be made available to the NHRS Board in advance of the next experience study.

A level dollar amortization approach would have reduced the UAAL more quickly, but would have required more substantial employer contributions in the earlier years. Using a mortgage analogy: it's cheaper in the long run to pay larger amounts as early as possible. Alternatively, the level percent of payroll method backloads payments to later in the amortization period.

**Level Dollar Amortization (in millions)**  
**As of 6/30/15**

Year	FY ending June 30	UAAL at start of year	UAAL payment	UAAL end of year	Beginning of year funded ratio
	2016	\$5,023	\$287	\$5,089	59.2%
	2017	5,089	296	5,151	59.2%
1	2018	5,151	460	5,049	60.8%
2	2019	5,049	460	4,939	62.5%
3	2020	4,939	460	4,821	64.6%
4	2021	4,821	460	4,695	66.6%
5	2022	4,695	460	4,559	68.5%
6	2023	4,559	460	4,414	70.5%
7	2024	4,414	460	4,258	72.4%
8	2025	4,258	460	4,090	74.4%
9	2026	4,090	460	3,911	76.3%
10	2027	3,911	460	3,718	78.3%
11	2028	3,718	460	3,512	80.2%
12	2029	3,512	460	3,291	82.1%
13	2030	3,291	460	3,053	84.1%
14	2031	3,053	460	2,799	86.0%
15	2032	2,799	460	2,526	87.9%
16	2033	2,526	460	2,233	89.7%
17	2034	2,233	460	1,919	91.6%
18	2035	1,919	460	1,582	93.4%
19	2036	1,582	460	1,221	95.1%
20	2037	1,221	460	833	96.8%
21	2038	833	460	418	98.5%
22	2039	418	460	-	100%

*Source: GRS Actuarial Valuation of 6/30/15*

**“Cross Over Year”**

Although the UAAL is projected to decline beginning in “hump year” 2018, under both amortization methods, it declines more rapidly and significantly under the level dollar method. The Commission estimated a “cross over year” when front loaded payments begin to be less than back loaded payments. CRR estimated that cross-over year would occur in 2028.

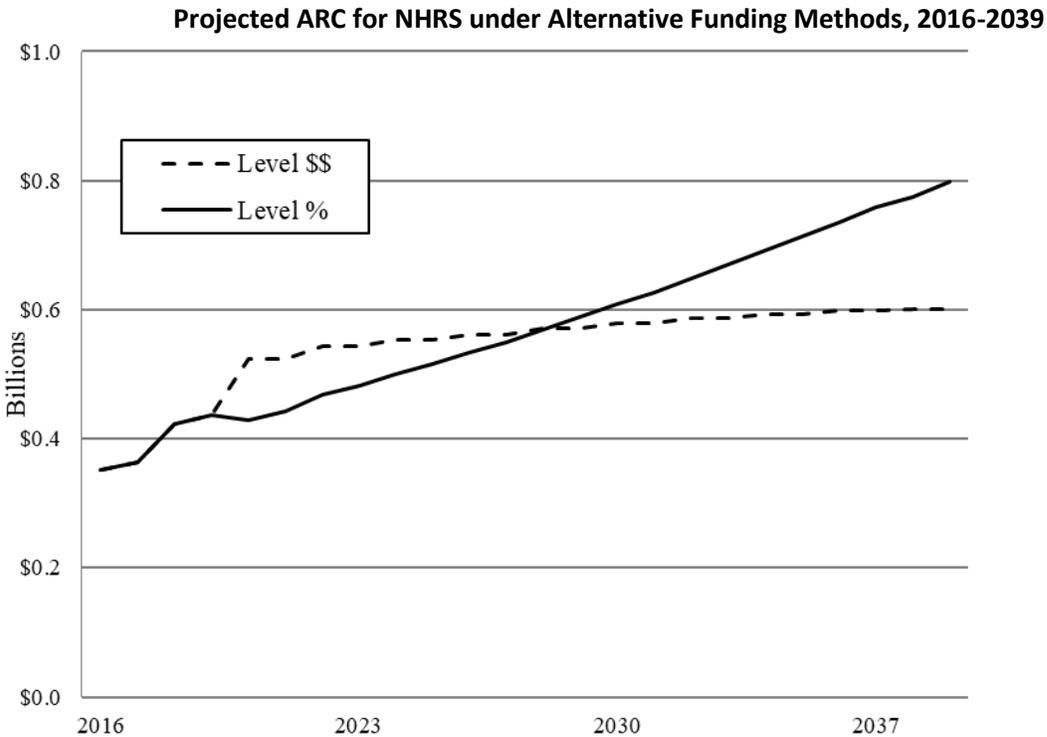


Chart source: CRR Report, Figure 25, p. 32 Source: CRR calculations.

Note: This projection assumes the unfunded liability is fully amortized by 2039. The assumed (and realized) payroll growth is 3.25% for employees, police and fire, and a 3.0 percent for teachers. The assumed (and realized) return is 7.25%.

The CRR report also noted that “if investment returns are only slightly less than expected, costs would increase substantially and the improvement in the funded status delayed until the later years. In practice, the slow funding progress and continual increase in costs could also jeopardize the political will to stick to the amortization schedule.” (p. 41) The Commission asked Mr. Aubrey to provide tables on various scenarios for the use of level dollar and level percent of payroll, with investment earnings of 6.25%, 7.25%, and 8.25%, which can be found in Appendix 3 of the CRR report. (p. 58-63)

### Layered Amortization

GRS described the alternative amortization approach using multiple layers. Excerpts from the GRS presentation:

- The first layer will be the amortization of the current UAAL scheduled to be paid by 2039.
- New layers would be established as they occur in future valuations and would be amortized over separate 20 year periods.
- In combination, these layers are expected to reduce future contribution volatility

Implementation would be consistent with the biennial rate setting process – no new layers should be established in the middle of a biennium and no layers should be set to expire in the middle of a

biennium. Amortization periods should be an even number of years (such as 20 to promote intergenerational equity. New layers should only be established in a rate setting valuation.

Advantages include the capacity to separately track sources of the UAAL and to spread costs more evenly over time, as well as avoiding some of the potential rate volatility as 2039 approaches. On the other hand, GRS noted that it can be complicated and “extended periods of gains and losses may create unexpected outcomes.”

GRS prepared a hypothetical layered amortization schedule for the Commission (made available to the Commission on November 20, 2017). GRS itemized the separate factors comprising the current UAAL, and calculated the potential amortization of these factors over 20 years. The factors included: gains and losses in experience (such as the investment losses in 2008-09), totaling \$811,781,521; updating the actuarial assumptions, totaling \$1,746,000,878; and the benefit reductions, which reduced the UAAL by \$522,536,533.<sup>4</sup>

The layered approach was supported in a white paper published by the Conference of Consulting Actuaries – excerpts: The policy objectives lead to a general preference for multiple, fixed amortization layers.

- a. Fixed period amortization is clearly better for accountability, since UAAL is funded as of a certain date.
- b. Single layer, fixed period amortization is not a stable policy, since period would have to be restarted when remaining period gets too short.

Maine PERS Director Sandy Matheson testified favorably with respect to the utilization of layered amortization for subsequently created gains and liabilities, but recommended an amortization period longer than 10 years due to rate volatility. On November 7, 2017, Maine voters approved a constitutional amendment increasing the amortization period from 10 to 20 years.

In further testimony, Larry Johansen (NHRS) described the options and the advantages for the use of layered amortization, while making it clear that the amortization schedule for the current UAAL would be unchanged. Here’s how it would work going forward: “Every two years in the odd number years, when it was a rate setting actuarial valuation, you determine if you have actuarial gains or actuarial losses. If they’re actuarial losses, you add on to that over 20 years and amortize it. Actuarial gains become a subtraction that you add on for the next 20 years. Ultimately, when all is said and done, you have 10 amortization schedules. One drops off, one comes on. Some of them are positive and some of them are negative.

Segmenting the amortization is also a way of tracking the proximate causes of the gains and losses. Currently, the UAAL is a combination of the prior gain-sharing, use of the Open Group Aggregate funding methodology, the market declines of 2001-02, 2008-09, the changes in assumptions resulting from the experience studies in 2010 and 2015, and the positive returns in 2011 and 2017.”

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<sup>4</sup>GRS noted that these are for illustrative purposes only in order to match the June 30, 2016 valuation

**Recommendation:** The Commission affirms that the amortization of the existing UAAL should not be extended beyond 2039.

Moved by Rep. McGuire, seconded by Mr. Kaloogian

Adopted 13-0 , October 12, 2017

**Recommendation:** The Commission recommends that the Legislature authorize layered amortization for any future gain or loss for a fixed period that is between 15 and 20 years.

Moved by Rep. McGuire, seconded by Commissioner Hodgdon

Adopted 8-3, October 12, 2017

**Rep. McGuire's summary:** The commission recommends that the legislature adjust the statutory NHRS amortization plan to agree with recommended practices from the Conference of Consulting Actuaries.

First, maintain the amortization of the existing UAAL in its current configuration, that is, a level percentage of payroll reaching 100% funding in 2039. Second, amortize changes to the funding required in layers, each layer amortized by either a fixed percentage of payroll or a fixed dollar amount, over a fixed period not exceeding 20 years. These layers (which may be positive or negative) may be due to benefits changes, revised actuarial assumptions, changes in demographics, or extreme changes in returns.

This change will achieve multiple goals: amortization of the existing UAAL will continue without change, paying off the shortages from the past as quickly as practical; the cost of any benefits change will be immediately apparent, and amortized over an appropriate period; the effects of revised assumptions, likewise; and extreme swings in returns – beyond the level appropriately smoothed – will be spread over a period longer than the five years used for smoothing. Altogether, this approach will minimize fluctuations in employer payments, maintain transparency of the effect of changes, and help maintain intergenerational equity by not amortizing liabilities over excessively long periods.

J. Review the effects of retirees returning to work for retirement system employers and make recommendations for legislative changes, if necessary.

NHRS retirees are permitted to work for non-participating employers without restriction. However, if they return to work full-time with a participating employer, the retiree’s pension payments cease, and the retiree is re-enrolled as a contributing member. This is called a “restoration to service.”

Part-time is defined as 32 hours or less per week, with the exception that, “Employment in some instances may exceed 32 hours in any normal calendar week provided that in such case, the part-time employment of the retired member shall not exceed 1,300 hours in a calendar year, so long as such part-time employment does not occur outside of a 5-consecutive-month period in any 12-month period.” (RSA 100-A:1, XXXIV)

The part-time statute was revised in 2012, clarifying that the 32-hour aggregate limit applies regardless of whether the retiree works for one or more employers, or if some of the hours are in a Group I and others are in a Group II position.

However, the Legislature has not identified consequences in cases where a retiree is working in excess of 32 hours – but is not working enough hours to meet the definition of full-time.

NHRS has sought legislative guidance on multiple occasions and several bills have been introduced over the past four years. NHRS has been issuing quarterly compliance letters to retirees who exceed the statutory limits for part-time work with a participating employer, and collecting data. The table below is excerpted from data provided to the Commission by NHRS.

	2014*	2015	2016
Total number of retirees	24,999	26,080	28,222
Number working part-time for a participating employer	2,516	2,450	2,516
% of retirees working part-time for a participating employer	10.06%	9.39%	8.19%
Number of retirees exceeding 32 hours at least once	338	245	231
Percentage of retirees exceeding 32 hours at least once	13.43%	10.00%	9.19%
Average hours worked per work week	19.07	18.93	18.69

\* All figures are quarterly averages. Data for 2014 includes only 3<sup>rd</sup> and 4<sup>th</sup> quarters.

\*\*139 retirees hold positions exempt from the 32-hour statute, such as officials appointed for fixed terms; employees who work for the Legislature or the Governor’s office; County Sheriffs; Town Managers/Administrators for whom membership is optional.

Part-time positions do not generate contributions to the retirement system from either the employer or retiree.

There is no actuarial impact when a retiree fills a position that has always been part-time.

There is a negative actuarial impact when full-time, covered positions are replaced with part-time positions, which leads to a reallocation of employer contribution costs in subsequent contribution rate cycles, although the actuary did not identify a material impact of this practice in the 2015 experience study. Since NHRS employer contributions are assessed as a percentage of the member payroll, slower than expected payroll growth will lead to higher contribution rates to pay down the UAAL in future rate cycles.

Proponents of hiring retirees say that employers need access to qualified and experienced workers who are willing to work part-time, and note that many retirees need additional income to supplement their pension and other retirement income.

Opponents see it as a detrimental practice that reduces the number of full-time positions available to provide contributions to fund the retirement system's pension obligations, thereby driving up employer contribution rates in the long run, and holds back younger workers from advancing in their career path.

The Commission concluded that while there is a perception problem with high profile retirees returning to work part-time, the financial and actuarial impact is insignificant and doesn't warrant legislative action at this time. However, should the fiscal and actuarial impact become significant, future legislation may be warranted.

**Recommendation:** The Commission recommends future legislation which enhances the reporting and compliance criteria to aid the NHRS in enforcing the law addressing retired members working part-time after retirement.

Moved by Commissioner Hodgdon, seconded by Sen. Carson.

Adopted 13-0, October 12, 2017

**Commissioner Hodgdon's summary:** This recommendation would provide some enforcement powers to the NHRS which has limited power now to stop offenses from occurring. There is an onerous reporting process in place; the NHRS sends out letters, but there are no consequences when this occurs to either the employee or the employer.

The topic was revisited on November 21, 2017, with a review of information provided by NHRS concerning the post-retirement regulations in use by other states. Since no other state permits more than 1040 hours annually, NH's 1660-hour threshold for part-time work appeared to be an outlier.

While Commissioner Hodgdon proposed three motions, Commission members raised concerns about exceptions for seasonal and certain law enforcement positions. Others responded that the appropriate exceptions could be considered during the legislative process.

Members also questioned the severity of the proposed penalty for violating the new threshold, despite the access to an administrative appeals process. Rep. McGuire noted that it is important for the standard to be taken seriously, and the legislature can still do what it wants with the recommendation.

Concerning the establishment of a 60-day waiting period, Commissioner Hodgdon explained that it was intended to address the abuse, using the example of someone retiring on Friday and returning on Monday in the same position. Employers should be training others to do the work and providing promotional opportunities. Ms. Stacey noted that NHRS is losing the employee and employer contributions, if that position is not filled by a new full-time employee. Chief Liebenow raised concerns about a lapse in certification for police officers after 30 days. During the legislative process, Rep. McGuire will address exceptions regarding the certification of part-time police officers.

**Recommendation:** The Commission recommends that the current 32 hour weekly limitation provision be replaced by an annual calendar year limit of 1,040 hours and that participating employers be required to report retiree work hours and compensation on an annual basis.

Moved by Commissioner Hodgdon, seconded by Rep. McGuire

Adopted 11-1, November 21, 2017

**Commissioner Hodgdon's summary:** This greatly eases the administrative burden for employers and the NHRS. It eliminates the disconnect between the employer's payroll cycle and the tracking and reporting cycles that exist under current law. The annual work hours would provide greater flexibility to employers in making work schedules and staffing decisions. The Commission asked the NHRS to look at a number of other states' part time work hour ceilings and 1,040 was a very reasonable threshold with many states at 1,040 or lower.

**Minority Position Regarding Retirees Returning to Work, submitted by Chief Nathan Liebenow:**

I would first like to begin my report by thanking my fellow Decennial Commission members for their hard work and dedication on this very complex issue. Countless hours were spent conducting a review of the New Hampshire Retirement System and each commission member was truly professional and thorough in their review. It was an honor to serve on a Commission with such a wealth of knowledge and expertise.

I offer this report to ensure that future reviewers understand some of the implications that certain recommendations, if enacted by legislation, could have on agencies throughout the State of New Hampshire. There was a consensus among the Decennial Commission that municipalities and other agencies should not be creating part-time positions to replace full-time positions, thus reducing the financial exposure or obligation for both the municipality and the contributing employee. As an active member of the NHRS, a NH taxpayer and a Police Chief I agree that this is an issue that needs to be addressed. Although reports from the NHRS indicate that this practice currently has a miniscule effect on the unfunded actuarial accrued liability (UAAL), it's a practice that negatively impacts the long-term solvency of the current system. I concur with this and encourage and support legislation that prohibits this practice. With this being stated, it's this commission member's opinion that some of the recommendations made by the majority could have significant unintended consequences on agencies, specifically police agencies who rely heavily on a part-time contingent. Currently, hiring and retainment of qualified applicants and employees is a unique challenge for police agencies. It's a relatively new and unprecedented challenge to New Hampshire law enforcement, and its cause can be linked to a variety of factors nationally and locally. This commission heard compelling direct testimony regarding this very issue. Many agencies have always relied on the knowledge and experience of retirees to fill part-time positions. This is not a new pattern by agencies throughout the State. The key is that the positions they are filling are positions that have always been part-time. There is heavy reliance on our part-time contingent to provide quality and dependable services that would otherwise have significant costs and absorb resources, especially given current training and hiring requirements. Hiring and operational decision making in such a high liability profession should be left up to department heads and town officials who have fiduciary responsibilities to their respective communities. Municipalities that have part-time positions should be able to fill those positions with who they see best qualified for the job, regardless of their status as a retiree with the NHRS. Municipalities are still making their obligated contributions to NHRS on behalf of their full-time employees. Our New Hampshire retirees leave the

workforce with a wealth of knowledge and expertise and are an asset post retirement. Significant investments were made into each individual employee by the State of NH and the towns that employ them. When one retires, the State could benefit from their investment by allowing the retiree to work part-time where there is a need, thus saving the towns valuable resources. A reduction in the hours allotted per year by 624 hours will put a strain on the needs of communities, specifically smaller agencies of which New Hampshire is mostly comprised of. It would be my recommendation to find alternate legislation that addresses municipalities or other agencies converting full-time positions to part-time status and subsequently supporting the goal of long-term viability for the New Hampshire Retirement System.

**Recommendation:** The Commission recommends that a penalty be enacted which would authorize the NHRS to suspend the state portion of a retiree's annuity benefit for a 12 month period if the retiree exceeds the annual 1,040 hour threshold. The retiree shall be required to track his or her hours worked.  
Moved by Commissioner Hodgdon, seconded by Rep. McGuire

Adopted 9-5, November 21, 2017

**Commissioner Hodgdon's summary:** This puts the burden of tracking the work hours on the employee as they could be working for multiple employers that are participating NHRS employers and the individual employers may not be aware of the others. The NHRS would notify the retirees subject to the penalty no later than April 1st and the retiree would have a 45 day period to appeal. NHRS auditing of work hours would still occur before any penalties were imposed. This is a serious penalty, but we want the employee to understand the importance of complying with this limitation on annual working hours. Penalties would begin with the July payroll and continue for 12 months.

**Minority Position Regarding a Penalty for Retirees, submitted by Chief Nathan Liebenow:** The Decennial Commission recommends that a penalty be enacted which authorizes the NHRS to suspend the state's portion of a retiree's annuity benefit for a 12-month period if they exceed the 1,040-hour limit. I fully supports a mechanism to allow NHRS to enforce violations, however, I see this as an extremely stiff penalty to enforce compliance. The state's portion of a retiree's annuity equates to approximately half of a retiree's benefit. It's my belief that compliance can be accomplished without such a severe financial consequence.

**Recommendation:** The Commission recommends that a retiree shall not return to part-time employment for any participating NHRS employer for a minimum of 60 days from the effective date of retirement.

Moved by Commissioner Hodgdon, seconded by Rep. McGuire

Adopted 13-1, November 21, 2017

**Commissioner Hodgdon's summary:** There is general knowledge of employees that are retiring only to turn around and be back at work within a matter of days, often time doing the same job they did when they worked full-time. It has become an accepted practice, when in fact it is not and puts the employer/government agency at risk. While there are rare exceptions when this might make sense, in

so many cases, it is lack of preparation and the easy way out. It doesn't force the employer to adequately prepare for knowledge transfer to protect the agency, to allow junior level employees promotional opportunities, and we often pay the part timers at premium rates close to their hourly salary when they left. We really need to prepare for someone's retirement as if they are not coming back, ensuring documentation and training have taken place for those left behind.

**Minority Position Regarding a 60-day "Cooling" Period submitted by Chief Nathan Liebenow:** Also of concern is a recommended 60-day "cooling" period which would require a NH retiree to wait 60 days after separation of service before any part-time employment with a NHRS participating employer. Under current Rule POL401.01 (a), the officer's certification shall lapse after 30 days from separation of service. While exceptions can be made by the Police Standards and Training Council, I believe this is something legislators should be aware of.

K. Consider the effects that changes to contribution rates have on municipalities and evaluate the options to minimize the changes.

Background: In 1967, RSA 100-A required the state to pay 40% of the employer contributions on behalf of Teachers.

In 1977, the statute was amended to provide 35% on behalf of all full-time Teachers, Police Officers, and Firefighters employed by political subdivisions. (Those job classifications are mandatory members of NHRS; sub-divisions may also choose to enroll their Employees).

In 2009, a further amendment reduced the state’s share to 30% for FY 2010 and 25% in FY 2011; with the state’s share to revert to 35% in FY 2012.

In 2011, new legislation eliminated the subsidy entirely, while providing a one-time appropriation of \$3.5 million to offset the change in FY 2012.

In 2012 the New Hampshire Supreme Court upheld these statutory changes to RSA 100-A:16 after several employers challenged the reduction.

Employer rates increased from 2006-2016 by 64% for Non-state Employees; 84% for State Employees; 175% for Teachers, 77% for Police, and 32% for Fire.

Employer Rates*					
Fiscal Year	Non-State Employees	State Employees	Teachers	Police	Fire
2006-07	6.81%	6.81%	5.70%	14.90%	22.09%
2008-09	8.74%	8.74%	8.93%	18.21%	24.49%
2010-11	9.16%	11.05%	10.70%	19.51%	24.69%
2012^	11.09%/8.80%	12.31%/10.08%	13.95%/11.30%	25.57%/19.95%	30.90%/22.89%
2013	8.80%	10.08%	11.30%	19.95%	22.89%
2014-15	10.77%	12.13%	14.16%	25.40%/25.30%∞	27.85%/27.74%∞
2016-17	11.17%	12.50%	15.67%	26.38%	29.16%
2018-2019	11.38%	12.15%	17.36%	29.43%	31.89%

\* Employer Rates: (1) The rates listed above are the total employer contribution rates. In 2008, legislation was passed to include both a pension and a Medical Subsidy portion as part of the total employer contribution rate, which may result in a difference in the employer rates for state and non-state Employee members. (2) The rates for 2006-2009 were calculated using the Open Group Aggregate actuarial method; subsequent rates were set using the Entry Age Normal method.

^ Employer rates were recertified effective Aug. 1, 2011, to reflect 2011 legislative changes. Employers paid the higher rate shown for July 2011 only.

Political subdivisions experienced another rate increase in 2018-19, primarily due to actuarial assumptions adopted by the Board of Trustees in May 2016. These included a reduction of the assumed rate of investment return from 7.75% to 7.25%, the adoption of updated post-retirement mortality assumptions, and a reduction in the payroll growth factor.

HB 413, introduced in 2017, would have reinstated the state subsidy at 15% of political subdivision employer pension contributions on behalf of teachers, police officers, and firefighters. The bill was retained and subsequently recommended as inexpedient to legislate by the House Finance Committee.

Comparison of Employer Contribution Rates in FY 2018-19  
With a Reinstatement of the 35% State Subsidy and with the 15% Subsidy Proposed by HB 413

Member Category	Total Employer Rate 2018-19	Rate if 35% share was still in effect	Rate under HB 413 subsidy at 15%
Teacher	17.36%	11.28%	14.76%
Police	29.43%	19.13%	25.02%
Fire	31.89%	20.73%	27.11%

The fiscal note on HB 413 projected the cost to the state of a 15% subsidy for local employer contributions for teachers, police, and fire to be \$40.8 million in FY 18, \$42.1 million in FY 19, and \$43.4 million in 2020. The cost to the State of a full reinstatement of the 35% subsidy for the same employer contributions, as roughly calculated by extrapolation by several members of the Commission, would be approximately \$95.1 million in FY 2018, \$98.1 million in FY 2019, and \$101.2 million in FY 2020.

There is stakeholder support for the reinstatement of the subsidy for political subdivisions. In testimony before the Commission, Barbara Reid of the New Hampshire Municipal Association and Derry Town Administrator Dave Caron described the rate impact on the local communities and provided supporting documentation.

Barbara Reid (NHMA) testified that the elimination of that 35% contribution was the biggest financial hit the municipalities have experienced in decades, and that if the state had continued the 35% contribution, then municipalities, school districts, and counties would have paid \$80 million less in pension costs in fiscal year 2016. Funding for the resumption of the subsidy would be from the same sources as the funding prior to 2011.

Dave Caron testified that when the retirement system began, critical mass was needed to achieve efficiencies, and the communities were incentivized to participate. The incentive was in the form of shared retirement expenses for our teachers, firefighters, and police officers. However, in 2012, the removal of the subsidy shifted the cost to local property taxpayers. Mr. Caron reported that in Derry's case, the result of that action is that we have to raise about \$2.3 million more each year to pay for that 35% which is about 80-cents on the tax rate.

**Recommendation:** The Commission recommends that the Legislature re-establish a state subsidy for local subdivision contributions.

Motion by Sen. Watters, seconded by Dr. Gustafson.

Adopted 9-4, October 12, 2017

**Sen. Watters' summary:** In response to a Commission request, the New Hampshire Retirement System produced a document setting forth the ways that employer rates could be more stable and predictable going forward. One option was to reinstitute the State's subsidy for the political subdivisions' contribution for police, fire, and teachers. The elimination of this subsidy had a significant impact on employer contribution rates for municipalities and other political subdivisions. Reinstating a subsidy at 15%, as proposed in HB 413 earlier this year, would have shaved more than \$40 million from municipal pension costs for that fiscal year by adding it to the state budget. This subsidy was eliminated as part of the changes made to the retirement system and the state funding contribution in 2011 subsequent to the economic downturn. Municipalities have claimed that this "downshifting" of retirement contribution costs was not adequately offset and was a retreat on state obligations to the pension obligations to these employees.

HB 413 proposed that the state pay 15% of Group I and Group II municipal employee "normal contribution" and "accrued liability contribution." The fiscal note for this bill projects a net impact on state expenditures under this formula of \$43.37 million in FY2020 and \$44.70 in FY2021, resulting in a net reduction of that amount for local subdivision contributions to the NHRS.

The Decennial Commission makes no recommendation as to the size of a re-established state subsidy or the source of funding. The motion adopted recognizes the re-establishment as a means to reduce employer rates for political subdivisions.

## L. Study the feasibility and cost of eliminating the reduction in a retiree's retirement allowance upon reaching the age of 65.

Background: Prior to 1988, Group I pension benefits were coordinated with federal Social Security benefits. Group I pensions were reduced from 10% to as much as 50% when the retirees turned 65. The statutory recalculation was based on a variety of factors, including a member's service time and age at retirement.

In 1988, the Legislature removed the coordination with Social Security (SB 327, Chapter 193), moving to a standard recalculation that reduced all Group I pension benefits approximately 10% at age 65, regardless of when the retiree commences Social Security benefits.

When Group I members who were hired before January 1, 2011 retire between the ages of 60- 64, their average final compensation (AFC) is divided by 60 and that amount is multiplied by the member's months and years of creditable service. Upon attainment of age 65, the formula changes so that a member's AFC is divided by 66 instead of 60.

Group I members who retire after age 65 have their benefit calculated with a divisor of 66 from the outset; this includes all Group I members hired on or after July 1, 2011, for whom the Service Retirement age is 65.

For example, a member in service prior to July 1, 2011, who retires at age 60 with an AFC of \$40,000 and 30 years of service would receive an annual pension of \$20,000 until he/she reaches age 65, at which time the annual pension would be adjusted down to \$18,182. However, that member would then be eligible to claim and start receiving Social Security benefits as early as age 62.

Note: When NHRS Group I pension benefits were no longer coordinated with Social Security benefits in 1988, the Normal Social Security Retirement Age (NSSRA) was 65. Currently, the NSSRA is 67 for anyone born in 1960 or later. For people born between 1938 and 1959, the NSSRA varies from 65 years, 2 months, to 66 years, 10 months.

The Commission reviewed two Supplemental Actuarial Valuations from GRS at the November 21 meeting.

### **Change the Age 65 Reduction to Age 67, for Active Members**

(calculation does not include those already retired)

Employer Pension Rates as a Percent of Payroll - State				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	N/A	25.33%	27.78%
Impact of Proposal	0.17%	N/A	0%	0%
Proposed 2018-19 Rates	11.25%	N/A	25.33%	27.78%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	1.03	-	-	-	1.03
FY 2021	1.07	-	-	-	1.07
FY 2022	1.10	-	-	-	1.10

### Political Subdivisions

Employer Pension Rates as a Percent of Payroll – Political Subdivisions				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	15.70%	25.33%	27.78%
Impact of Proposal	0.17%	0.22%	0%	0%
Proposed 2018-19 Rates	11.25%	15.92%	25.33%	27.79%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	1.22	2.68	-	-	3.90
FY 2021	1.26	2.76	-	-	4.02
FY 2022	1.30	2.84	-	-	4.14

Increase in Actuarial Accrued Liability Due to Proposal As of June 30, 2015 Increased with Interest to July 1, 2018 (\$Millions)				
Employees	Teachers	Police	Fire	Total*
\$19.7	\$25.3	\$ -	\$ -	\$45

\*Totals may not add due to rounding

### Elimination of the Age 65 Reduction for all Active and Retired Members

Employer Pension Rates as a Percent of Payroll - State				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	N/A	25.33%	27.78%
Impact of Proposal	2.26%	N/A	0%	0%
Proposed 2018-19 Rates	13.34%	N/A	25.33%	27.78%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	13.74	-	-	-	13.74
FY 2021	14.19	-	-	-	14.19
FY 2022	14.65	-	-	-	14.65

Political Subdivisions

Employer Pension Rates as a Percent of Payroll – Political Subdivisions				
	Employees	Teachers	Police	Fire
Current 2018-19 Rates	11.08%	15.70%	25.33%	27.78%
Impact of Proposal	2.26%	3.11%	0%	0%
Proposed 2018-19 Rates	13.34%	18.81%	25.33%	27.79%

Expected Employer Dollar Increase (Decrease) Due to Proposal – State (\$Millions)					
	Employee	Teacher	Police	Fire	Total
FY 2018	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2019	-	-	-	-	-
FY 2020	16.17	37.87	-	-	54.04
FY 2021	16.69	39.01	-	-	55.70
FY 2022	17.23	40.18	-	-	57.41

Increase in Actuarial Accrued Liability Due to Proposal As of June 30, 2015 Increased with Interest to July 1, 2018 (\$Millions)				
Employees	Teachers	Police	Fire	Total*
\$337.2	\$451.0	\$ -	\$ -	\$788.2

\*Totals may not add due to rounding

Commission members discussed the information, noting that the substantial cost of removing the reduction for all Group I members and retirees. Some consideration was given to identifying a funding source to implement the change from age 65 to age 67 for both active and retired members – perhaps active employees could self-fund, while employers could pay for the retirees. No consensus was reached that would include those already retired.

**Recommendation:** The Commission recommends legislative action to defer the reduction in benefit for Group I active employees at age 65 until age 67.

Moved by Ms. Stacey; seconded by former Rep. Christie

Adopted 10-4, November 21, 2017

**Ms. Stacey’s summary:** The Commission is aware the reduction in benefit at age 65 is now coincidental to and not linked specifically to the eligibility of Social Security benefits. As the age of eligibility for Social Security benefits has increased, the Commission encourages the legislature to defer the NHRS benefit adjustment to age 67 for current Group I active employees in consideration of Social Security benefit eligibility.

The Commission requested GRS to provide cost estimates for calculating the cost of: A. Elimination of the reduction at age 65 for all Group I retirees and current employees; and B. Deferral of the reduction in benefit for Group I active employees to age 67. Cost analysis was performed utilizing the current UAAL amortization schedule payoff of 2039.

The Commission reviewed the cost analysis pertaining to the increases in employer rates based upon the current 2039 amortization schedule and determined the following:

Scenario A: The elimination of the reduction for Group I at age 65 for all current retired and active members is estimated to cost \$788.2 million based upon the current 2039 amortization schedule for the UAAL. The impact on current employer rates would increase 2.26% for employees and 3.11% for teachers.

Scenario B: Deferral of the reduction for Group I active employees to age 67 is estimated to cost \$45 million based upon the current 2039 amortization schedule for the UAAL. The impact on current employer rates would increase 0.17% for employees and 0.22% for teachers.

There was sentiment to remove the reduction in its entirety, but the reality of budget constraints and taxpayer burden coupled with the UAAL amortization schedule of 2039 make that option unrealistic at this time. Should a layered amortization schedule be implemented in the future, the removal of the reduction in its entirety could be revisited.

## Member Commentaries

### **Growth in the UAAL between 2007 and 2017: Its Causes and Its Consequences**

Based upon the actuarial amortization schedule in 2007, the UAAL was projected to increase from \$2.397 billion in 2007 to \$2.902 billion by 2016, a difference of \$505 million. In fact, it grew by \$2.195 billion more than projected – an increase of more than 75% above the projection, such that as of June 30, 2017, the UAAL totaled \$5.04 billion. In 2007, the NHRS was funded at 67%; in 2017 it was 61.8 %.

On October 30, 2017, at the request of the Commission, GRS (NHRS' actuarial consultant) reported its findings regarding the factors causing this growth in the UAAL and the comparative impact of each contributing factor. It concluded that part of that increase - \$914.9 million – was the result of poor investment returns during the financial crisis of 2008-9 when the NHRS lost \$650 million (the difference in the two figures results from multiplying the actual asset loss in 2008-9 by the assumed rate of return for the NHRS over the subsequent years).

A much larger percentage of the increase above the projection in 2007 is attributed to the failure of the Retirement System to meet its own actuarial assumptions prior to 2015. That under-performance resulted in an unprojected increase in the UAAL of \$1.746 billion, almost twice that attributable to the reduction in assets resulting from the financial crisis. The assumptions having the greatest impact on the System's overall performance are, in order of importance: 1. Assumed investment rate-of-return; 2. Assumed payroll growth; and 3. Mortality, or the longevity of retirees. (GRS did not attempt to quantify the financial impact of life expectancies lengthening more than the NHRS assumptions over this decade).

The financial crisis had an obvious, direct and substantial impact on the actual vs. assumed investment rate-of-return during these years. Less obvious but probably also substantial was its impact on payroll growth. Following the crisis, the public sector payroll actually contracted nationwide rather than expand. Thus, while the NHRS failed to meet these actuarial assumptions during this time frame, much of that failure may be ultimately attributable to the financial crisis. (GRS did not apportion the \$1.746 billion increase in the UAAL among the under-performance on the three major actuarial assumptions.)

Although unquantified, the NHRS' failure to achieve its actuarial assumptions prior to 2015 must also account for some of this increase in the UAAL. While the assumptions were consistently and sequentially more conservative than the ones that preceded them, they proved to be not as conservative as they should have been. The NHRS failed to achieve five of the six major actuarial assumptions it adopted in the eight years prior to 2015. And the accuracy of the assumptions made in 2015 are still unknown.

The factors cited above, which caused the growth in the UAAL, were partially offset by changes in benefits for new and unvested employees enacted in 2011 (reducing the projected UAAL by \$523 million) and by better than projected liability experience, i.e. less benefit payouts than projected (reducing the projected UAAL by \$103 million).

The Boston College Center for Retirement Research ("BC-CRR") in its Report of December 1, 2017 cited another factor contributing to this growth in the UAAL. HB 653 enacted in 2007 established a 30-year amortization schedule to pay off the UAAL. The amortization method adopted was the "level percent-of-payroll" method. In comparison to the equally accepted "level-dollar" amortization method, the level

percent method “back-loads” the amortization schedule in that employer contributions in the early years are lower than under the level-dollar method, resulting in the UAAL initially continuing to grow, then being paid down later, more slowly and at a greater overall cost than it would have been using the level dollar method. Adoption of that amortization method significantly impacted the fiscal consequences of the financial crisis by systematically paying down the UAAL later, more slowly and at a greater cost. The increased cost of adopting the level-percent-of-payroll method over the level-dollar methodology was calculated by GRS to increase the total cost of paying down the UAAL between 2017 and 2039 at \$800 million.

The overwhelming majority of this increase in the UAAL has been and is being paid for by increased employer contributions to the NHRS – which have increased from between 64% for non-state employees to 175% for teachers. Employee-members have also seen their contributions increase 25% and 40%. Despite these increases, the UAAL is expected to continue to grow until at least 2018.

BC-CRR, which was hired as an independent consultant by the Commission, reported that the current NHRS assumptions regarding the assumed investment rate of return and mortality are more conservative than those currently adopted by a majority of large defined benefit public employee retirement systems in the country. However, the assumptions regarding payroll growth are much more problematic at the present time based upon experience to date. And the author of the BC-CRR Report opined that more conservative assumptions would give the Retirement System a greater probability of meeting all of these assumptions in the future.

Submitted by:

David W. Hess, Commission Chair; former House Majority Leader and Chair of the House Special Committee on Public Employee Pension Plans

Co-sponsored by Commission members: R. Dennis Corrigan, Actuary; Jack Dunn, Business Manager, Concord School District; Former Rep. Brian Gallagher, Retired School Finance Official; Howard Kaloogian, Esq., Attorney; Rep. Carol McGuire, Chair House Executive Departments and Administration Committee; Rep. Bill Ohm, House Deputy Majority Whip; Ms. Cathy Stacey, Rockingham County Register of Deeds

## Commentary on Actuarial Assumptions and UAAL

Over the past 10 years, the NHRS Trustees have twice made adjustments to the actuarial assumptions in order to strengthen the financial position of the pension trust. The narrative in some sections of the Commission report regarding the growth of the UAAL from 2007-16 relies on the certainty of hindsight to infer that the actuarial assumptions adopted by the NHRS Board of Trustees prior to FY 2015 may have been “unrealistic.” This commentary is intended to provide further insight into how assumptions are developed and why the unfunded liability has increased since 2007.

### The Process of Setting Assumptions

Every year, NHRS’ independent actuary (GRS) produces a valuation of the retirement system that projects future benefit payments and determines the present value of those benefits.

Given the long-term nature of pension benefits, the actuary calculates NHRS’ funded ratio, unfunded liability, and employer contribution rates based on assumptions about many future events, such as the age when members will retire, the percentage of members who will not vest for a benefit and simply withdraw their contributions, the rate of salary growth for each member group, how long retirees will live after retirement, the rate of price inflation, and how much the plan’s investments are expected to earn over time. These assumptions are based on detailed statistical models and adhere to national actuarial standards of practice. However, it is important to note they are assumptions – not facts.

When the assumptions don’t match the actual experience, there can be an actuarial gain or loss. Put simply, gains reduce employer contribution rates, losses increase employer contribution rates.

To ensure that actuarial assumptions remain sound, pension plans typically conduct an experience study every five years. The most important assumption reviewed in every experience study is the assumed rate of investment return (“ARR”), which is what the Trustees believe the plan can realistically earn from its investments on an annual basis, when averaged over a 25-30 year time horizon. This assumption is particularly important because earnings from investments typically account for a majority of revenues required to fund benefits. In addition to the input from our actuaries, the Board also receives counsel on the ARR from the NHRS Independent Investment Committee, the retirement system’s investment consultant, other outside investment experts, and staff.

When an experience study is completed, the actuary may recommend that the Board of Trustees modify some assumptions so that they track closer to actual plan experience and future expected experience. Members of the NHRS Board of Trustees are fiduciaries and, as such, have a legal obligation to adopt actuarially sound assumptions.

When reviewing recommended changes to assumptions based on the 2010 and 2015 experience studies, Board members acted in accordance with the professional advice of the system’s actuaries. Revising the assumptions, including reductions to the ARR, increased the system’s unfunded liabilities, which had the direct impact of bringing more money into the system by increasing employer contribution rates.

## **The Unfunded Actuarial Accrued Liability (“UAAL”)**

HB 653 enacted in 2007 established a 30-year amortization schedule to pay off the UAAL and mandated the use of the entry age normal actuarial method to determine the funded status of the plan and employer contribution rates. At that time, the UAAL was \$2.397 billion and was projected to grow to \$2.902 billion by 2016. In fact, the UAAL increased to \$5.097 billion as of June 30, 2016, \$2.195 billion more than what was originally projected in 2007. The funded ratio of the plan went from 67.0% to 60.0% over the ten year period and is now 61.8% as of June 30, 2017.

The Decennial Commission spent considerable time examining this issue in order to better understand why the original expectations were not met. Over the past ten years there were two factors that reduced the UAAL and three factors that increased it.

The UAAL was reduced as a result of: (1) benefit reductions for new and unvested employees enacted in 2011 (reducing the projected UAAL by \$523 million through 2016 and generating ongoing savings going forward as new hires accruing lower benefits replace veteran workers) and; (2) by better than projected liability experience (reducing the projected UAAL by \$103 million).

Part of the increase in the UAAL was expected in that it was generated by negative amortization attributable to the “level percent-of-payroll” amortization method adopted in 2007. This approach allocates payments on a percentage of payroll basis over time, which has the effect of leveling employer contributions. For NHRS, \$665 million of the UAAL increase from 2007-16 was the expected result of using the level percent amortization method.

What was clearly not expected, however, was the financial crisis of 2008-09 which had both an immediate and longer term impact on the unfunded liability. One direct consequence was that investment returns were well below the assumed rate of return, increasing the UAAL by \$914.9 million.

However, the most significant driver of the growth in the UAAL above the ten-year projection in 2007 was the adoption of more conservative actuarial assumptions by the NHRS Board following experience studies undertaken in 2010 and 2015. These changes, taken together, added \$1.746 billion to the UAAL.

As noted above, the financial crisis of 2008-09 had an obvious and substantial impact on the actual vs. assumed investment rate-of-return during these years. Less obvious, but of note, was its adverse impact on payroll growth. Following the crisis, the public sector payroll actually contracted nationwide rather than expanding and even in recent years growth has trailed expectations.

The decisions to reduce actuarial assumptions for investment returns, payroll growth and mortality increased the UAAL, but also strengthened the system by generating additional revenue through increases to employer contribution rates. It is important to appreciate that failure to adjust assumptions when it is prudent to do so results in obscuring liabilities which are accruing – or “kicking the can down the road.”

The report done for the Commission by the Boston College Center for Retirement Research determined that “NHRS currently uses more conservative actuarial assumptions than its peers and has achieved better returns.” That being said, there can be no guarantee that the current assumptions will prove to be accurate. As noted above, system’s liability and resulting contribution rates are built upon actuarial assumptions regarding future events – not facts.

While the retirement system's trustees cannot control macro-economic trends or predict the next financial crisis, the record clearly demonstrates they can, and have, taken appropriate and reasonable steps to adjust assumptions in accordance with governing statutory provisions and their fiduciary duties. The system remains focused on the successful elimination of the UAAL by 2039.

Submitted by Dr. Richard Gustafson, Commission Member and Chair of the Board of Trustees of NHRS

Co-sponsored by Commission members: Senator Sharon Carson, Commission Vice-Chair and Senate ED&A Chair; Mr. Andrew Christie, Jr., former House ED&A Chair; Ms. Linda Hodgdon, Commission Vice-Chair and former DAS Commissioner; Chief Nate Liebenow, Newfields Police Department; Captain Michael McMahon, Hampton Fire Department; Senator David Watters, Education and Transportation Committees

## Concerns with Alternative Plans

The Commission took testimony from many employer and employee groups over several days and the message was uniform in asking the Commission to leave things alone, translated into leaving the present benefit structure as is. They reasoned that we are only eight (8) years into a thirty (30) year plan with twenty-two (22) years remaining, are on track to begin reducing the UAAL in 2018 (over the hump) with a fully funded plan by 2039.

There were several reasons discussed including the significantly improved investment performance with the creation of the Investment Committee which first convened in January of 2009 as well as the reduction of benefits to newly hired and non-vested employees which occurred in 2011 that reduced liabilities by over \$520 million. NH is now in the top ten percent of public pension plans for 3 and 5 year performance, moving up from the bottom half.

Some commission members, myself included, have grave concern over the discussions surrounding movement to cash balance plans because the future liability is shifted to the employees. In economic downturns, employees close to retirement are at significant risk. NH government employees' benefits are already modest in comparison with those from other systems, compounded by the lack of a COLA in the last 7 years. The thought of further reducing that benefit, or introducing significant uncertainty threatens the labor force stability and dependability. In addition, defined contribution plans would be far more expensive than our present plan.

There have been numerous failed attempts over the last decade to close or modify the current defined benefit plan with defined contribution plans or alternative plans. Regardless of which alternative plan you select, the unfunded liability (UAAL) from past years does not go away. The Center for Retirement Research report identified that the employer normal cost is "comparatively modest" at 2.7% in NH vs 5.9% as a National Average when compared as a percent of payroll. It is the UAAL that accounts for the largest portion of the cost (7.7% in NH vs 6.7% National Average). There is ample explanation of how the unfunded liability occurred with legislative reforms in 2007 and 2011 to address many of those concerns.

The good news is with annual investment returns such as the 13.5% in 2017, we are continuing to work towards our goal. This far exceeded the 7.25% assumed rate of return.

Submitted by Linda Hodgdon, Commission Vice-Chair and former DAS Commissioner

# The New Hampshire Retirement System: A Look Backward and Forward

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## Executive Summary

Despite good-faith efforts, the funded ratio for the New Hampshire Retirement System (NHRS) is lower today than it was in 2007 and is below the national average. Much of the decline of the System's funded ratio since 2007 can be attributed to investment losses experienced during the financial crisis in 2008 and 2009. However, since 2009 – despite benefit modifications, stronger than average investment returns, and a strong commitment to paying the full Annual Required Contribution (ARC) – the funded ratio for the System has improved only slightly and the dollar amount of the unfunded liability has grown.

Although NHRS is currently one of the worst funded plans in the nation, its costs are low in comparison to the national average. The NHRS is a relatively small retirement system, so liabilities relative to payrolls are small compared to the average plan. Additionally, state and local government employers do not contribute much toward the normal cost – the amount needed to fund additional benefits earned each year. As such, the majority of the relatively modest pension costs for NH governments stem from the existing unfunded liability.

### *What Has Driven UAAL Growth since 2007?*

Since 2007, the Unfunded Actuarial Accrued Liability (UAAL) for NHRS has grown by about \$2.7 billion. A basic comparative analysis found that NHRS currently uses more conservative actuarial assumptions than its peers and has achieved better returns. The plan's assumed return of 7.25 percent is among the lowest in the Public Plans Database, and the mortality assumptions used by NHRS are based on the most current mortality table produced by the Society of Actuaries – RP-2014. NHRS investment performance has exceeded the average return for large state and local plans from 2007 through 2017. Ignoring investment performance during the 2008 and 2009 crisis, NHRS has – for the most part – achieved its 7.25-percent assumed return. A more detailed historical analysis revealed three key components driving UAAL growth since 2007: 1) investment losses experienced during the financial crisis; 2) NHRS' method for amortizing its unfunded liability; and 3) reductions in the assumed return in the wake of the 2008-2009 financial crisis (as well as periodic adjustments to other actuarial assumptions).

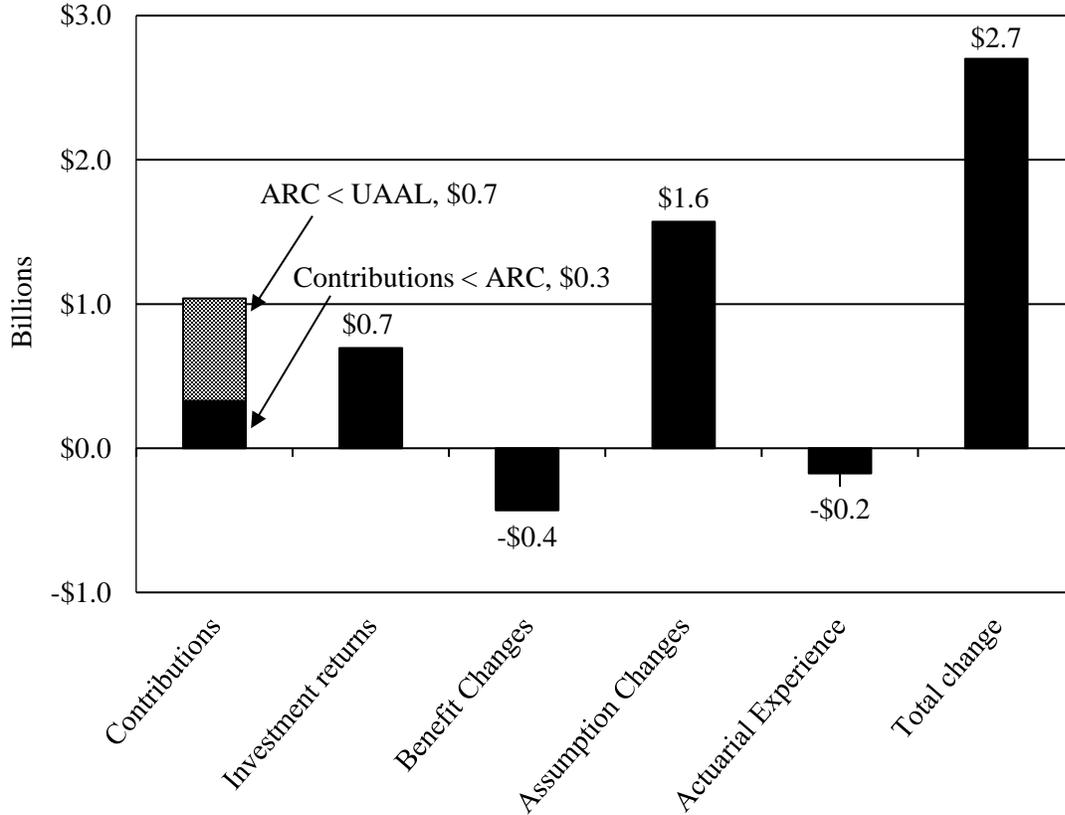
Poor investment performance has accounted for \$700 million of the UAAL growth since 2007 – nearly \$650 million of it during 2008 and 2009 (see Figure 1). In terms of the method for amortizing unfunded liabilities, the System currently uses a level-percent-of-pay amortization method that backloads costs and, depending on the amortization period, allows the UAAL to grow in early years. About \$700 million of the increase in unfunded liabilities is due to the backloaded nature of the amortization method. Additionally, a level-percent-of-pay method can result in unexpected contribution shortfalls if actual payroll growth is less than the assumed payroll growth used to calculate amortization payments.<sup>5</sup> For NHRS, an additional \$300 million in unfunded liabilities is due to differences between the assumed and actual levels of payroll

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<sup>5</sup>See Appendix I for a brief analysis on the impact of payroll growth.

growth. Finally, another \$1.6 billion in unfunded liabilities are associated with the NHRS' gradual reduction in its assumed return in the wake of the financial crisis, as well as the regular periodic adjustments to other actuarial assumptions.

Figure 1. Sources of Change to NHRS' UAAL, 2007-2015



Source: CRR calculations based on various NHRS actuarial valuations from 2007-2016.

### Looking Forward

Again, the main source of NHRS pension costs is the amortization of the unfunded liability. Under current law, the UAAL is scheduled to be paid off by 2039, with dollar costs expected to rise steadily (in step with expected payroll growth) over that period. If all actuarial assumptions are met, and the System achieves its assumed return, employers' pension costs will rise steadily from \$350 million in 2016 to nearly \$800 million by 2039 (mostly due to their backloaded schedule for amortizing the UAAL). If the plan were to shift from a level-percent-of-pay amortization to a level-dollar approach, costs would rise to about \$500 million and increase slowly to \$600 million by 2039.

Importantly, the projections are sensitive to key factors such as the realized payroll growth and investment return. If payroll growth is lower than assumed (for example, no payroll growth

versus expected growth of around 3 percent), the improvement in funding is more backloaded and costs rise more than expected to almost \$900 million in 2039 instead of \$800 million.

Additionally, if investment returns are even 1 percent less than NHRS has assumed (6.25-percent returns rather than the 7.25-percent assumed return), costs for the System could balloon to over \$1 billion by 2039 regardless of the method of funding. On the other hand, if returns are higher than expected (8.25 percent rather the assumed return of 7.25 percent), the ARC rises modestly from \$350 million in 2016 to about \$470 million in 2029, before declining to \$140 million by 2039.

### *How Have Other States Addressed Their Pension Challenges?*

To place NHRS in the broader context of the public pension landscape, the analysis looked at the experience of three other state-administered plans – the Maine State Employees and Teachers Retirement Plan (Maine SETP), the Alabama Employees Retirement System (Alabama ERS), and the Vermont State Teachers Retirement System (Vermont TRS). While each plan’s experience is unique, general themes emerged.

First, similar to NHRS, all three plans had significant investment losses during the 2008-2009 crisis. In response, the plans adjusted their assumed returns by either lowering the long-term rate or experimenting with the use of separate assumptions for short- and long-term returns. For all plans, investment performance since 2010 roughly equaled or exceeded their assumed returns, but the impact of the strong investment performance on funded status was dampened due to the continued phase-in of the dramatic 2008 and 2009 investment losses in the actuarial value of assets.

Second, for two of the three plans reviewed, contributions since the crisis have not been enough to keep unfunded liabilities from growing due to the level-percent-of-payroll amortization method used and a relatively long amortization period. Maine SETP was the only plan whose contributions were large enough to prevent annual growth in UAAL. Although Maine SETP used a level-percent-pay method for amortizing unfunded liabilities, its amortization period for newly created unfunded liabilities has been sufficiently short to ensure that annual contributions had a meaningful impact on unfunded liabilities each year.<sup>6</sup> The remaining two plans analyzed, including NHRS, all used amortization methods that allowed the dollar amount of the UAAL to grow.

Finally, the financial crisis spurred a wave of benefit modifications. Changes that reduced the benefits for current members had an immediate improvement on the funded ratio. Changes that focused on benefits for new hires had little impact on existing funded ratios (although the modifications will improve the trajectory of liabilities going forward).

### *Conclusions and Recommendations*

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<sup>6</sup> Maine SETP is scheduled to pay off its 1998 unfunded liability by 2028 and has historically amortized newly created unfunded liabilities over 10 years. On November 7, 2017, Maine passed a law extending the amortization period for new unfunded liabilities from 10 to 20 years. This will delay the plan’s progress towards full funding.

Since 2007, backloaded amortization schedules and investment returns below the assumed return (mostly during the financial crisis) have added to the unfunded liability for NHRS and increased costs. However, because NHRS is a relatively small retirement system and employers do not contribute much toward the normal cost for ongoing employee benefits earned each year, total employer contributions to the System are relatively modest in comparison to the national average. Given the relative affordability of current pension costs, the report suggests two changes to NHRS that would likely require increased costs today, but would reduce the risk that poor investment returns and/or a backloaded funding policy could cause significant increases in costs or a lower funded ratio down the road.

The first change is to shift to a level-dollar amortization of the unfunded liability. Although such a shift would increase costs in near-term, it would improve funding more quickly and limit the risk of unintended contribution shortfalls resulting from lower-than-expected payroll growth. Additionally, if the assumed investment return is achieved each year, the UAAL would decrease annually in dollar terms. A more rapid reduction of the UAAL may be increasingly desirable for the state and local governments that pay into NHRS, given that new GASB standards require unfunded liabilities to be reported on government balance sheets.<sup>7</sup>

The second change is to switch from using a single long-term assumed return to using different rates for short and long-term return expectations. In the wake of the financial crisis, 10 large plans switched from a single long-term rate to different short and long-term return expectations.<sup>8</sup> Three plans use short- and mid-term rates that automatically adjust to align recent investment experience with long-term expectations.<sup>9</sup> For example, if past performance exceeded expectations, expectations for future returns would be reduced such that the average return over the past and future periods match long-term expectations. Interestingly, by 2016, seven of the ten plans had shifted back to a single long-term rate; higher-than-expected returns in the wake of the financial crisis resulted in lower return expectations and increased contribution requirements. This last fact highlights an important – and desirable – feature of explicitly setting short and long-term return expectations: it often asks plans to put aside more money during times of higher-than-expected returns to protect against the risk of lower-than-expected-returns in the future if the overall performance reverts to long-term expectations.

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<sup>7</sup>While the new GASB 67 and 68 accounting standards are not meant to be funding standards, they do require that governments who participate in cost-sharing multiemployer plans report their proportion of the plan's unfunded liabilities on their balance sheet. This new reporting requirement may incentivize participating governments to adopt funding methods that focus on extinguishing unfunded liabilities more quickly.

<sup>8</sup>Alabama ERS (2012-2016), Alabama TRS (2012-2016), Georgia Teachers (2010-2016), Minnesota Police and Fire (2012-2014), Minnesota Public Employees (2012-2014), Minnesota State Employees (2012-2014), Minnesota Teachers (2012-2016), St. Paul Teachers (2012-2014), Vermont SERS (2011-2015), and Vermont Teachers (2011-2014).

<sup>9</sup>Alabama ERS (2012-2016), Alabama TRS (2012-2016), and Georgia Teachers (2010-2016).

## Introduction

The State of New Hampshire (NH) has one primary retirement system: the New Hampshire Retirement System (NHRS). The System, a component unit of state government overseen by a Board of Trustees, covers nearly all public sector workers in the State. Despite good-faith efforts to fund the System,<sup>10</sup> the funded ratio for NHRS dropped from 86 percent in 2001 to 60 percent in 2005.<sup>11</sup> In 2007, as the funded status of NHRS improved to 67 percent on the back of strong market performance, the State Legislature mandated a retirement review commission to study the System's long-term viability. The Commission's report cited several flaws, some of which were corrected in legislation. Below are the two most significant flaws highlighted by the report and the legislated corrections:

- 1) In 1991, NHRS adopted the Open Group Aggregate funding methodology. The method inflated the funding level, which lowered employer contribution rates for an extended period. In 2007, just prior to the Commission, House Bill 653 was passed requiring the use of the more commonly accepted Entry Age Normal method.
- 2) COLAs and the retiree Medical Subsidy were funded through a special account into which "excess earnings" were deposited. From 1990-2000, this transfer amounted to more than \$900 million from the pension fund into the special account. The 2008 law – HB 1645 – transferred a large portion of the funds in the special account back to the pension fund. A one-time COLA was provided in FY 2009 and three variously-structured Temporary Supplemental Allowances were also adopted.<sup>12</sup> Additionally, the dollar amount of the existing medical subsidy benefit was frozen.

NHRS' funded status dropped dramatically during the financial crisis and, despite the HB 653 and HB 1645 modifications, has remained around 60 percent since 2009 – near the bottom fifth of major pension plans. While the funded ratio has remained flat, the required contributions to the plan have risen steadily as the dollar amount of the unfunded liability has grown. This report will identify and measure factors that have undermined efforts to improve the funded ratio of NHRS and control costs. Based on the results, the report will recommend changes to ensure the System's long-term viability.

This report has five parts. The first is an overview of New Hampshire's current pension status and comparisons to other states. The second part includes a historical review and analysis of factors that have contributed to the increase in NHRS' unfunded liability since 2007. The third

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<sup>10</sup> Except in 2008 and 2009, NHRS has received the full ARC each year since 2001. The 2008 and 2009 contribution shortfall was due to a technical IRS compliance issue involving funding of the Medical Subsidy provided by NHRS, not an intentional economic decision. The shortfall is being amortized through future employer rates beginning in fiscal year 2010.

<sup>11</sup> Prior to 2007, the funded ratio for NHRS was calculated using the projected unit credit method. In 2007, NHRS adopted the entry age normal method to calculate its funded ratio.

<sup>12</sup> The commission recommended a guaranteed COLA to be pre-funded through increased employee contributions, but the recommendation was not adopted.

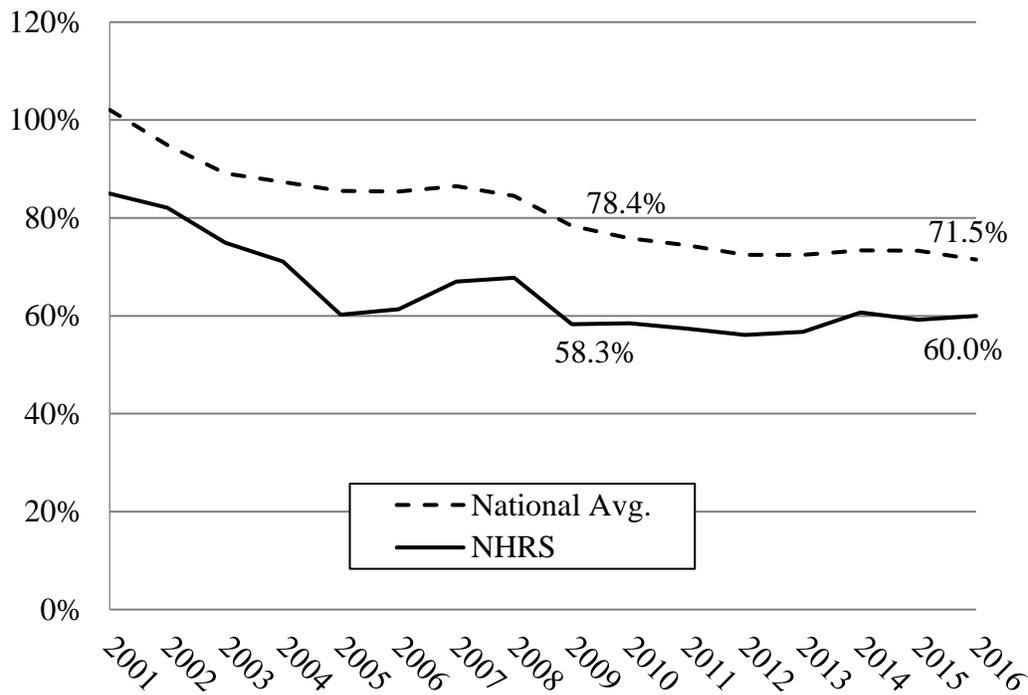
section provides a stylized projection of NHRS funding out to 2039 (the statutory full funding date for NHRS), showing the impact that key factors – the realized return, actual payroll growth, and the amortization strategy – has on NHRS’ path to extinguishing its unfunded liability. The fourth section contains case studies highlighting the experiences of three state-run pension plans that faced similar challenges to NHRS coming out of the financial crisis. The final section concludes with a synopsis of results and recommendations for the NHRS.

## Part I: How does New Hampshire Compare to Others?

The funded status for NHRS lags the national average but is showing slight improvement.

Since the turn of the century, NHRS has lagged the national average in terms of its funded ratio (see Figure 2). However, while the national average continued to fall in the wake of the financial crisis, NHRS improved slightly from 58 percent funded to 60 percent. As a result, from 2009 to 2016, NHRS improved its rank from 19<sup>th</sup> worst funded to 36<sup>th</sup> out of the 170 plans in the *Public Plans Database* (which covers 95 percent of all the members and assets in U.S. state and local pension plans).

Figure 2. *Funded Ratio of NHRS Compared to the National Average, 2001-2016*



Sources: CRR calculations based on the 2015 NHRS Actuarial Valuation and the *Public Plans Database* (2001-2016).

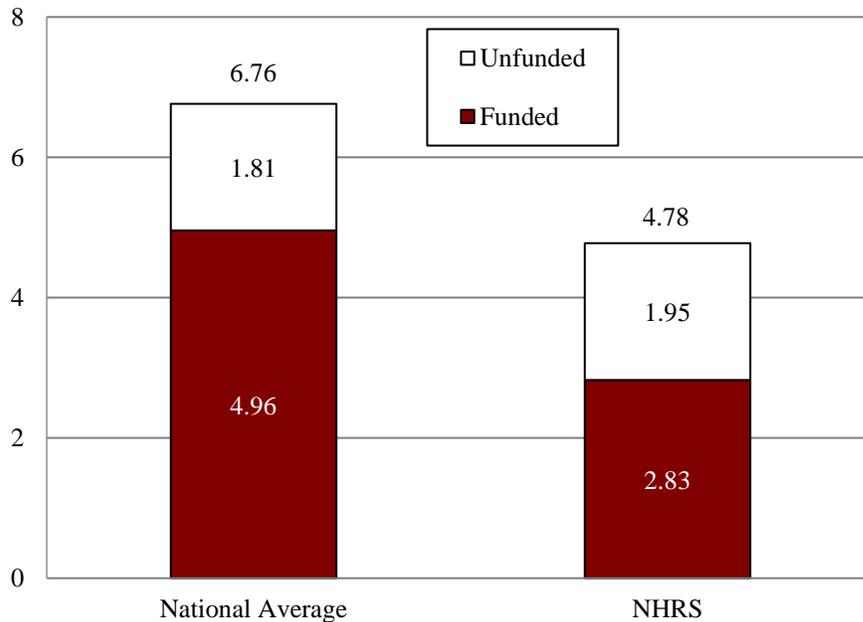
Note: Funded ratio calculated using projected unit credit method prior to 2007 and entry age normal afterward.

*NHRS is relatively inexpensive for state and local governments in New Hampshire.*

Although NHRS is worse funded than the average plan, its unfunded liability costs are comparable to the national average. This is because the size of NHRS relative to the NH government is smaller than average. To show how this works, Figure 3 presents the funded

status of accrued liabilities relative to covered payroll in 2015 for NHRS and the nation as a whole. For NHRS, total accrued liabilities are only 4.8 times covered payroll – the national average is 6.8. So, while the System may have a lower funded ratio than the average plan, the size of its *unfunded* liabilities relative to payroll is close to the national average.

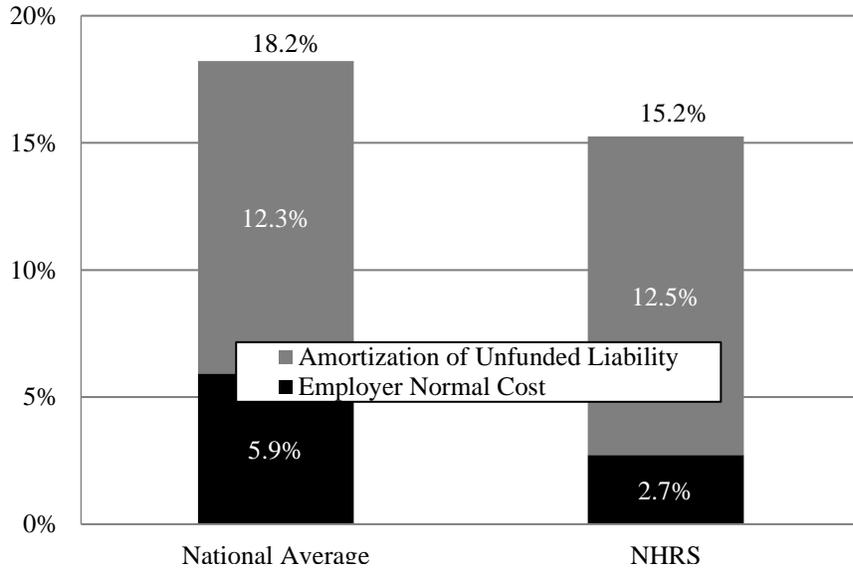
Figure 3. *Accrued Liabilities as a Percent of Payroll for NHRS and National Average, 2015*



Sources: CRR calculations based on the 2015 NHRS Actuarial Valuation and the *Public Plans Database* (2001-2016).

Because NHRS’ unfunded liability relative to payroll is on par with the national average, its unfunded liability costs are very near the average too (see Figure 4). Additionally, state and local governments participating in NHRS are asked to contribute very little to the normal cost for ongoing pension benefits – only 2.7 percent compared to a 5.9 percent national average. Because the NH governments pay relatively little toward newly accruing benefits, and the NHRS has about average UAAL costs, the total government contributions to NHRS are currently about 15 percent of payroll compared to an 18 percent national average.

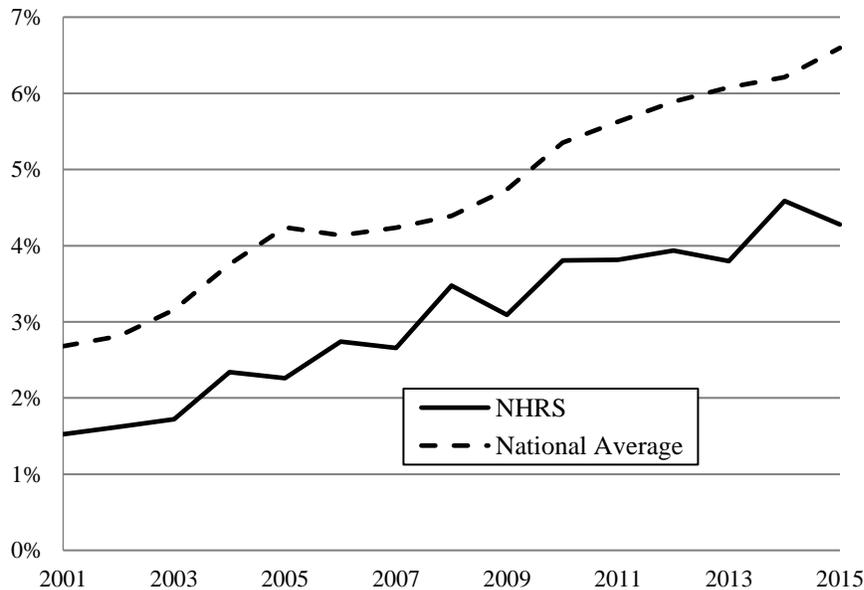
Figure 4. *Employer's Actuarial Costs as a Percent of Payroll for NHRS Compared to the National Average, 2015*



Sources: CRR calculations based on the 2015 NHRS Actuarial Valuation and the *Public Plans Database* (2001-2016).

New Hampshire's pension costs, even as a percent of the own-source revenue generated by state and local governments, are well below the national average (see Figure 5).

Figure 5. *Pension Costs as a Percent of Own-Source Revenue, 2015*

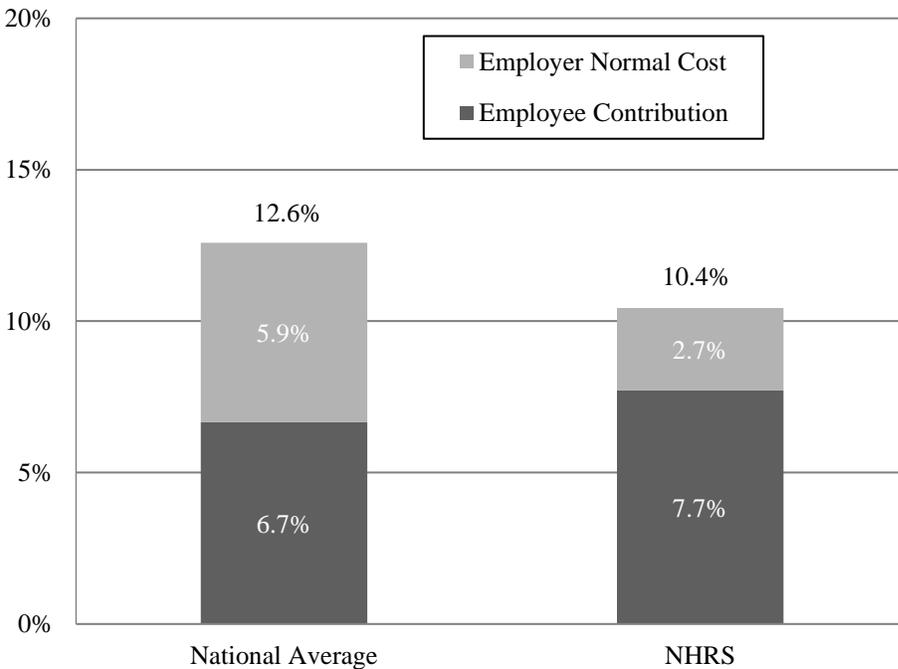


Sources: CRR calculations based on the *Public Plans Database* (2001-2016) and the US Census (2001-2016).

*Member benefits are comparatively modest.*

The benefits provided by NHRS are relatively modest. Figure 6 shows that in terms of the total normal cost as a percent of payroll (a proxy for benefit generosity), NHRS is below the national average. This difference is partially due to the fact that most public pension plans provide regular COLA benefits.

Figure 6. *Total Normal Cost as a Percent of Payroll, 2015*



Sources: CRR calculations based on the 2015 NHRS Actuarial Valuation and the *Public Plans Database* (2001-2016).

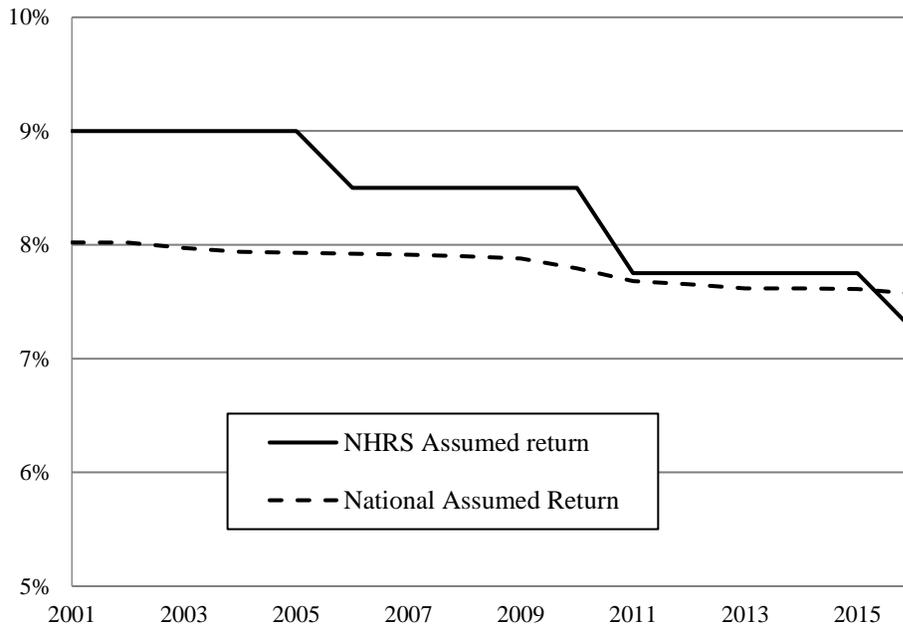
*Assumptions used by NHRS are more conservative than most public plans.*

This section compares NHRS to other large retirement systems in terms of two important actuarial assumptions – the assumed return and mortality.<sup>13</sup>

*Assumed Return.* Figure 7 shows the NHRS assumed return compared to the national average from 2001-2015. NHRS has steadily lowered its assumed return from 9 percent in 2001 to 7.25 percent as of 2016. This is below the national average of about 7.5 percent.

<sup>13</sup> Workforce assumptions such as turnover, salary growth, and retirement are not included because they mostly reflect the specific HR policies for each government and the specific provisions of the pension system, making comparisons across plans are less useful.

Figure 7. Assumed Return for NHRS Compared to the National Average, 2001-2016

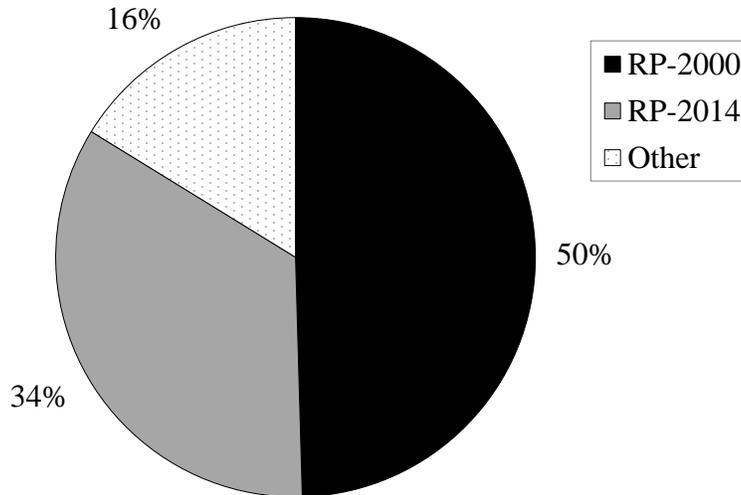


Sources: Various actuarial valuations for NHRS; CRR calculations based on the *Public Plans Database* (2001-2016).

The decision to reduce the long-term assumed return involves a relatively straightforward trade-off: larger contributions into the System to make up for lower expected returns on assets. However, the change also lowers the likelihood of greater amortization payments in the future to pay down unfunded liabilities that arise due to investment performance that is below the assumed return. Conversely, increasing the assumed return means paying less upfront, but it increases the likelihood of having to pay more to make up for unfunded liabilities that accrue if investment experience falls short of expectations.

*Mortality.* As of 2016, 50 percent of plans in the Public Plans Database (PPD) used the RP-2000 as their base mortality table. A third of plans – NHRS among them – use the most recent RP-2014 table (see Figure 8). The remaining 16 percent use either older mortality tables or tables generated directly from their own mortality experience.

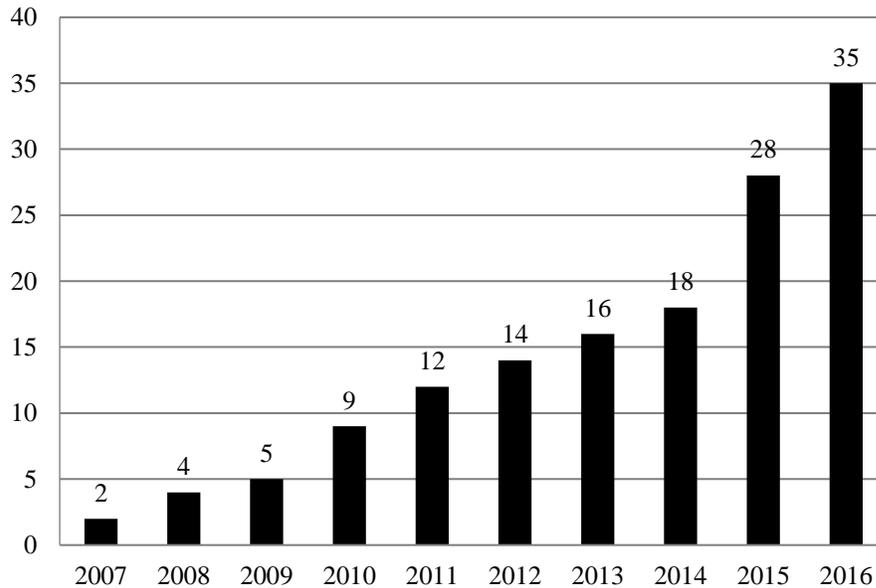
Figure 8. *Mortality Tables Used by Large State-Local Pension Plans, 2016*



Source: CRR calculations based on actuarial valuations for plans in the *Public Plans Database*.

But the base mortality table is only a starting point for public plan actuaries. They make a variety of adjustments to align the tables with their plan members' expected mortality. Perhaps the most important is the use of mortality improvement scales to specify the pace at which longevity improves each year. Actuaries have two approaches to applying the improvement scale: "static" and "generational." Generally, the static method projects mortality improvements to a fixed point in the relatively near future. The generational method goes further, fully incorporating *all* anticipated future improvements in longevity. Interestingly, while state and local plans primarily use a static approach, they have gradually moved toward an explicit generational method (see Figure 9). Today, NHRS is one of 35 public plans in the PPD that are currently using the generational method to fully account for the potential impact of future mortality improvements.

Figure 9. *Number of Large State-Local Pension Plans Using Generational Scaling, 2007-2016*



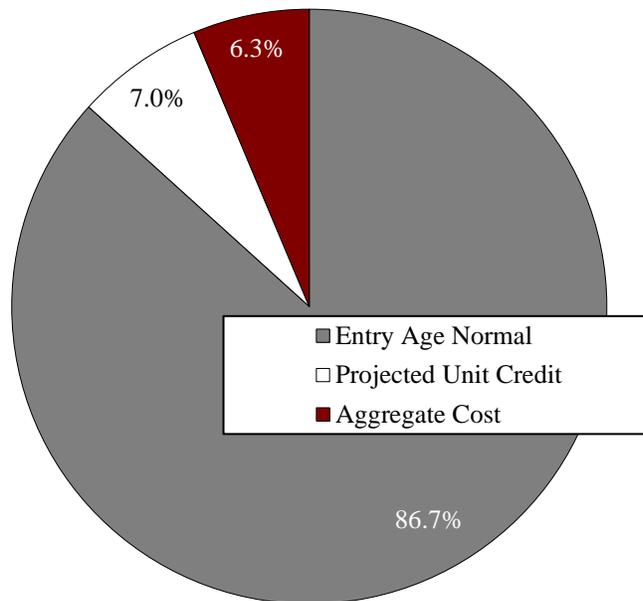
Source: Author's calculations based on actuarial valuations for plans in the *Public Plans Database*.

*Level percent amortization of UAAL is common but often inadequate.*

Pension funding has two discrete components. The first is the normal cost – technically the actuarial method for spreading the costs of retirement benefits across an employee's working career. The second component of pension funding are payments to amortize unfunded liabilities – an additional cost that must be paid when past contributions to cover the normal cost end up falling short of what is needed.

*Normal Cost.* When an employee enters the workforce, the pension actuaries estimate the expected lifetime benefit for the employee based on the plan's own assumptions for individual employee turnover, salary growth, retirement, and mortality. To calculate the annual normal cost, the actuary spreads the total value of the lifetime benefits across an employee's working career. Each year an employee works, he or she accrues a portion of their total lifetime benefit according to how the actuary has decided to spread the value of lifetime benefits over the expected career. The annual accrual is the normal cost. The sum of past normal costs is the total accrued benefit for the employee (or liability for NHRS). The most common method for calculating the normal cost – and that used by the NHRS – is the entry age normal method (see Figure 10).

Figure 10. *Normal Cost Methods for Large State-Local Pension Plans, 2016*



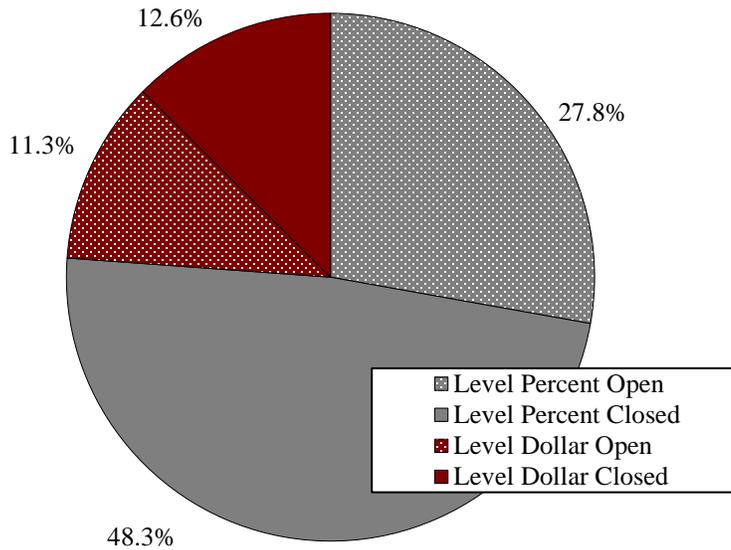
Source: Public Plans Database

*Amortization of UAAL.* Two-thirds of major state and local plans, including NHRS, use a level-percentage-of-payroll method to amortize unfunded liabilities. In theory, this allows for easier budgeting, as payments are expected to remain a relatively stable proportion of payrolls. But this method also backloads amortization payments so that smaller dollar payments are scheduled in the initial years (often allowing the UAAL to grow in dollar terms) and larger dollar payments later. Currently, based on the projection in the 2015 actuarial valuation for NHRS, the UAAL is projected to grow until 2018. From that point forward it is projected to decline and reach zero by 2039.

This level-percent-of-pay approach can also result in ballooning costs in later years if actuarial assumptions (namely investment returns) are not met in the early years when the UAAL is being allowed to grow. The alternative is a “level-dollar” amortization that schedules equal dollar payments each year and reduces more of the unfunded liability in the early years. Though less convenient in terms of budgeting, level-dollar amortization better protects against ballooning costs down the road in the event of adverse experience.

Unfortunately, both methods often undermine plans’ own efforts to pay off the unfunded liability by using an open amortization that keeps pushing out the slated the date for full funding (see Figure 11). This is particularly problematic when using a percentage-of-pay method because contributions remain at the initial low levels indefinitely. Fortunately, NHRS uses a closed amortization period with a statutory full funding date of 2039.

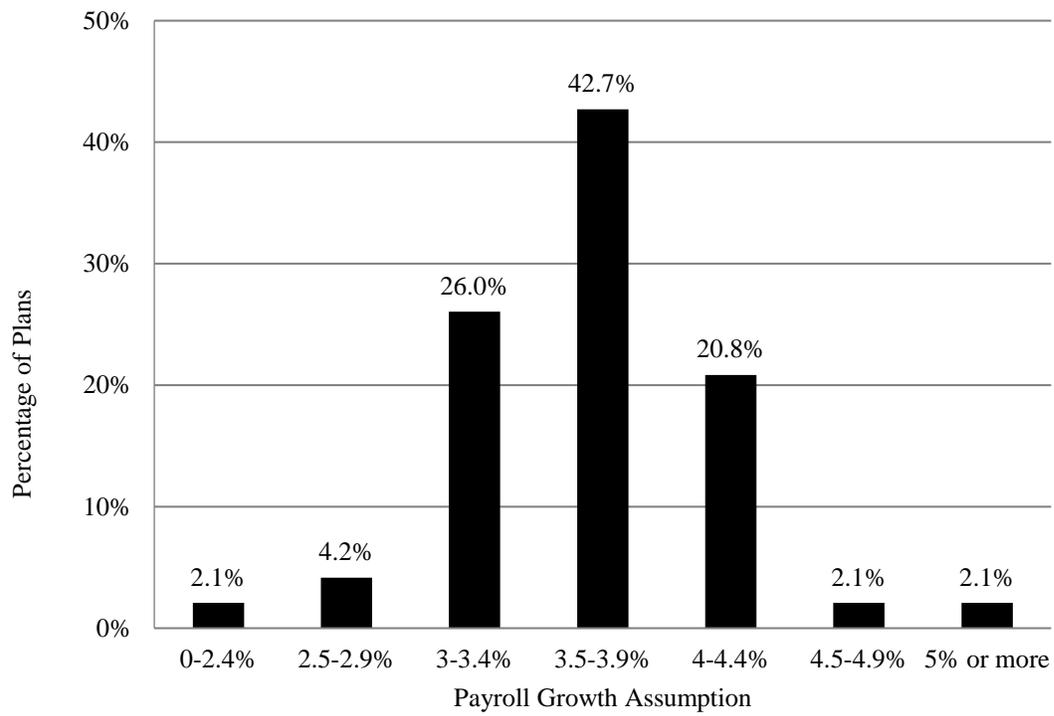
Figure 11. *Amortization Methods for Large State-Local Pension Plans, 2016*



Source: Public Plans Database

The payroll growth assumption is important when considering the impact of the level-percent approach. The higher the assumed payroll growth, the more backloaded the payment schedule will be, the greater the increases in the UAAL in the early years of the schedule, and the greater the risk of dramatic increases in payments in future periods in the event of negative actuarial experience. Figure 12 reports the distribution of payroll assumptions used by plans that amortize with a level percent-of-pay approach. Almost half of the plans assume annual payroll growth of between 3.5 percent and 3.9 percent. NHRS currently assumes 3.25 percent payroll growth for employees, police and fire and 3.0 percent for teachers.

Figure 12. *Payroll Growth Assumptions for Large State-Local Pension Plans, 2016*

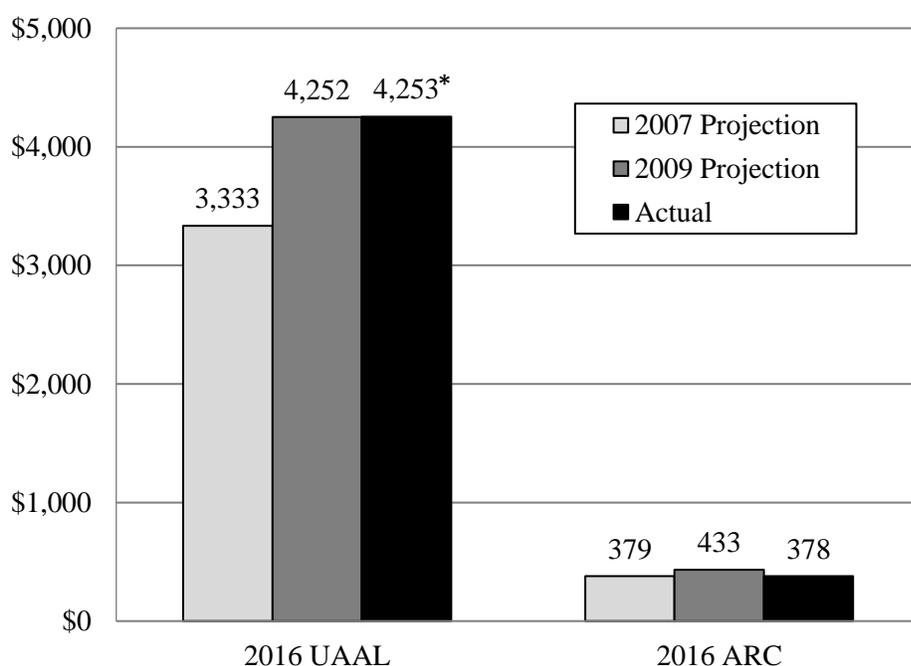


Source: Public Plans Database

## Part II: What Has Driven the Increase in NHRS' Unfunded Liability since 2007?

Beginning in 2007, NHRS actuaries began reporting data on the System's current Unfunded Actuarial Accrued Liability (UAAL) and a projection schedule for paying off the UAAL by 2039. Compared to the first schedule produced in 2007, today's UAAL and Annual Required Contribution (ARC) are larger than expected (see Figure 13). Much of this divergence can be attributed to the large investment losses during the 2008 and 2009 financial crisis. When compared to the updated projections generated in 2009 (after accounting for the downturn), today's UAAL and ARC are roughly on schedule.

Figure 13. *NHRS' Projection of 2016 UAAL and ARC compared to Actual*



Source: Various NHRS actuarial valuations from 2007-2016.

\* The actual UAAL reported in the 2016 actuarial valuation is valued using a 7.25 percent assumed return. UAAL projections provided in the 2007 and 2009 valuations use a 7.5-percent assumed return. In order to properly compare today's UAAL to the projected amounts, the reported 2016 UAAL was revalued using 7.5-percent assumed return.

While today's UAAL and ARC payments are on par with the actuary's more recent projections, it is important to consider what risks might lay ahead as NHRS strives to achieve full funding by 2039. To answer this question, this part of the analysis takes a closer look at how the UAAL has evolved since 2007. The investigation requires a detailed review of each valuation produced by the NHRS actuaries since 2007 for information to determine the specific factors that have contributed to the growth of the UAAL dollar value. The factors include: 1) contributions that

backload the amortization of the unfunded liability; 2) benefit changes (i.e. increased age for retirement and a lower accrual factor); and 3) assumption changes (e.g. lowering the assumed investment return or shifts in employee turnover/retirement assumptions), and 4) deviations from actuarial assumptions (e.g., actual returns falling short of the assumed investment return or workers living longer than expected).

Table 1, which comes straight from the 2016 NHRS actuarial valuation report, illustrates how it works. First, the expected UAAL in 2016 is estimated by growing the 2015 UAAL by the interest rate, adding to that the newly accrued liability in the form of the normal cost, and then reducing it by the contributions paid. If contributions do not cover interest on the existing unfunded liability and value of the newly accrued benefits, the unfunded liability at this stage is expected to grow. Then, the impact of any legislated changes to benefits and/or changes to actuarial assumptions are applied. Finally, the remaining difference between the expected UAAL and the actual UAAL is attributed to actuarial experience – the differences between actuarial assumptions and the actual outcomes.

Table 1. 2016 Change in the UAAL for NHRS, from the Plan's Actuarial Valuation

Item	
(1) Actual UAAL* as of June 30, 2015	\$5,022,875,296
(2) Normal cost from 2015 valuation	284,098,237
(3) Actual contributions (employer and employee)	565,431,098
(4) Interest accrual: $[(1)+1/2 [(2)-(3)]] \times \{.0725 \text{ for pension}\}$	353,960,143
(5) Expected UAAL end of year: (1)+(2)-(3)+(4)	5,095,502,578
(6) Change from legislation	-
(7) Change from revised actuarial assumptions	-
(8) Expected UAAL after changes: (5)+(6)+(7)	5,095,502,578
(9) Actual UAAL as of June 30, 2016	5,096,799,491
(10) Gain/(loss) for year 2: (8)-(9)	-1,296,913
(11) Gain/(loss) as percent of actuarial accrued liabilities at start of year	-0.00 %

Source: June 30, 2016 New Hampshire Retirement System CAFR Schedules and GASB Statement No. 67 Plan Reporting and Accounting Schedules.

The first task is to take the individual changes for each year, categorize them in a consistent fashion, and then move systematically from one year to the next to build a year-over-year catalog of the changes to the UAAL over the period of interest (see Table 2).

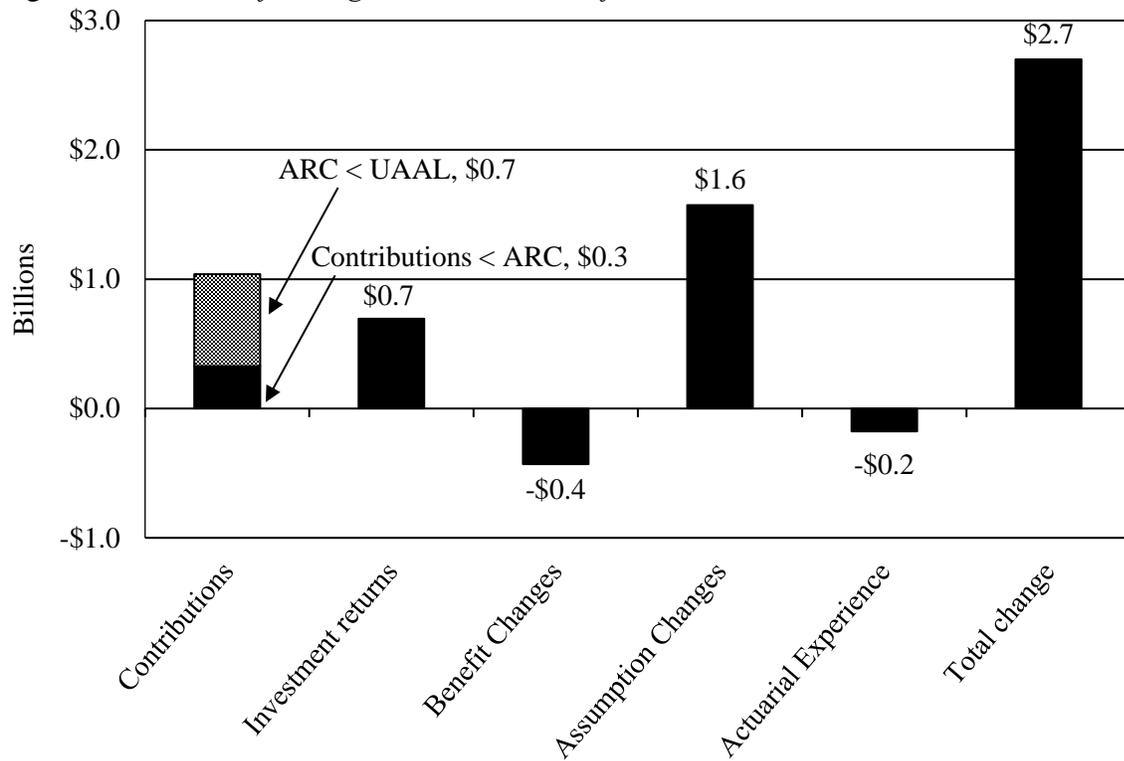
Table 2. Annual Change to NHRS' UAAL, 2007-2016, in Millions

FY	Starting UAAL	Projected ARC dollar amount compared to liability growth	Contributions relative to projected ARC dollar amount	Investment return relative to expectations	Benefit changes	Changes to assumptions and methods	Actuarial assumptions relative to expectations	Ending UAAL
2007	–	–	–	–	–	–	–	2,397.5
2008	2,397.5	98.1	-2.1	-53.4	0.0	0.0	79.3	2,519.3
2009	2,519.3	133.5	-7.0	697.2	0.0	0.0	194.7	3,537.7
2010	3,537.7	145.0	4.0	106.9	0.0	0.0	-73.5	3,720.1
2011	3,720.1	142.9	17.0	87.9	-430.1	756.7	-36.7	4,257.7
2012	4,257.7	89.2	55.9	259.6	0.0	0.0	-118.6	4,543.7
2013	4,543.7	88.1	74.6	36.3	0.0	0.0	-104.6	4,638.1
2014	4,638.1	12.1	63.9	-273.5	0.0	0.0	-96.0	4,344.6
2015	4,344.6	-19.3	71.3	-197.6	0.0	815.0	8.9	5,022.9
2016	5,022.9	30.8	41.8	30.4	0.0	0.0	-29.1	5,096.8
Total		720.3	319.3	693.8	-430.1	1,571.7	-175.5	

Source: CRR calculations based on NHRS actuarial valuations from 2008-2016.

Aggregating these detailed year-over-year changes provides insights into the relative impact of each factor on the total change in the UAAL over the period (see Figure 14).

Figure 14. Sources of Change to NHRS' UAAL from 2007-2016, in Billions



Source: CRR calculations based on NHRS actuarial valuations from 2008-2016.

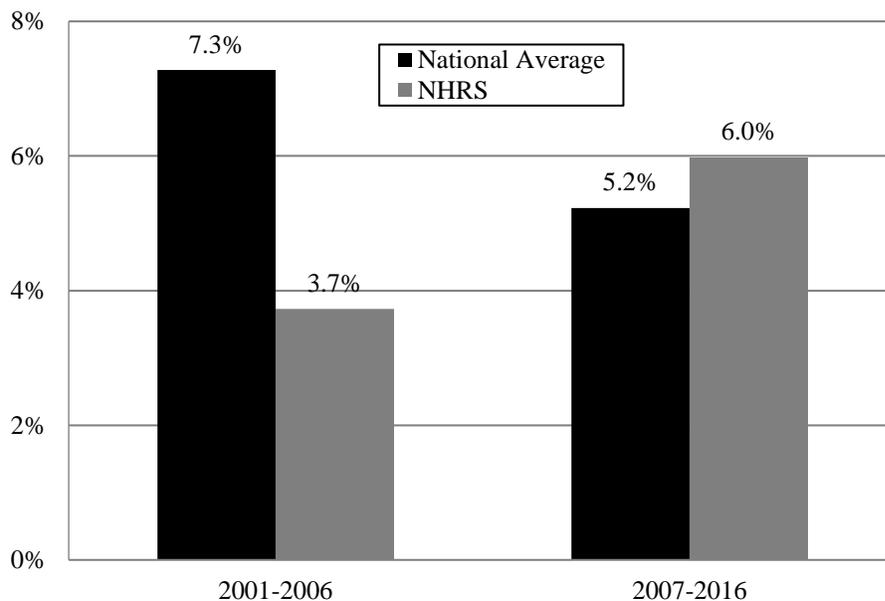
Based on the data provided in the valuation, an ARC that was insufficient to limit UAAL growth accounted for \$1 billion in unfunded liabilities. Investment losses (primarily the losses experienced during financial crisis of 2008 and 2009) accounted for \$700 million and reductions of the assumed rate of return in the wake of the financial crisis accounted for \$1.6 billion. Benefit changes in 2011 and favorable actuarial experience decreased the UAAL by \$600 million.

*Inadequate Contributions.* Paying down the unfunded liability has two components: 1) calculating an appropriate amortization payment that keeps the UAAL from growing each year; and 2) making the full ARC payment each year. First, the UAAL amortization schedule NHRS uses is designed to allow for UAAL growth (in dollar terms) until 2018. As such it is not surprising to find that \$700 million in UAAL growth from 2007 to 2016 can be attributed to amortization payments that are less than the annual UAAL growth. However, it was unexpected that a portion of UAAL growth since 2007 has also come from dollar contributions smaller than the scheduled ARC dollar amounts. The required contributions are set as a percent of expected payroll. However, since 2007, differences between expected and actual payroll have resulted in contribution amounts that were less than expected and, ultimately, added \$300 million to unfunded liabilities. Combined, a level-percent ARC that is designed to have the UAAL grow and contributions that were less than projected have increased the UAAL about \$1 billion since 2007.

*Actual Returns Less than Assumed Returns.* The impact of investment returns on plan finances depends on the relationship between two factors: 1) the plan’s actual return; and 2) the assumed return. Achieving actual returns in excess of what is assumed lowers the UAAL. Conversely, if actual returns are below what is assumed, it adds to unfunded liabilities.

Prior to 2007, NHRS’ actual investment return was much lower than the average plan in the PPD. But since major reforms to the investment process in 2007, NHRS investment performance has exceeded most other plans (see Figure 15).

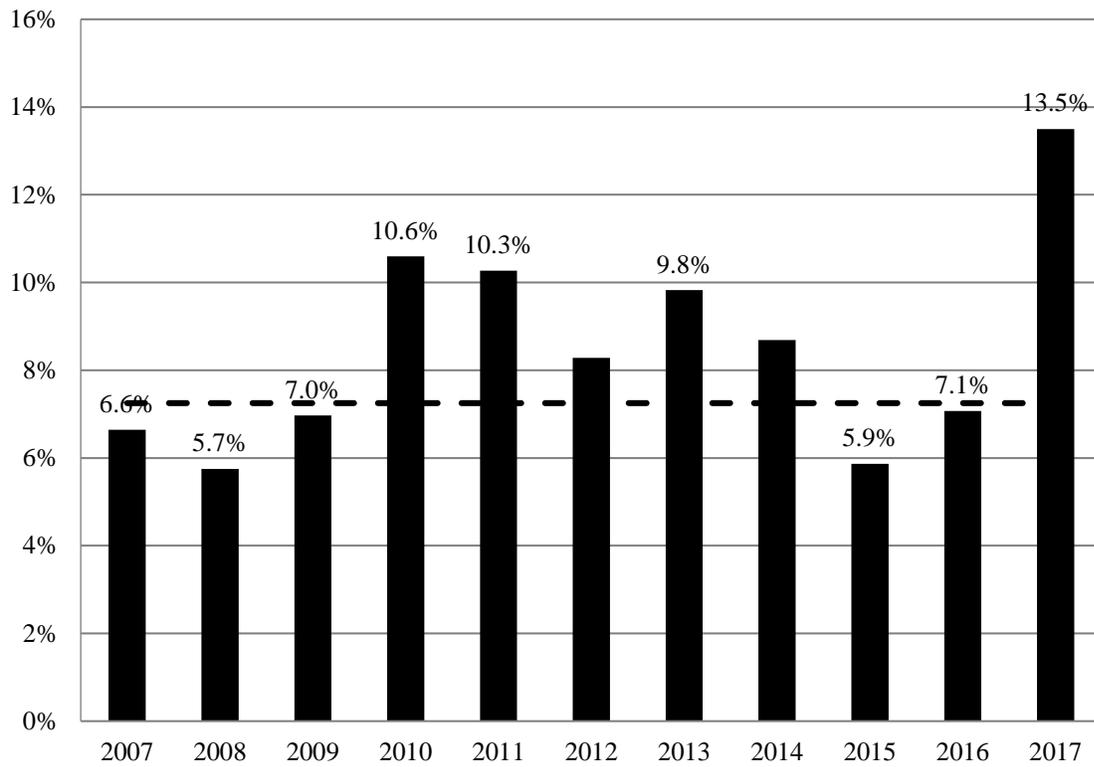
Figure 15. *Actual Annualized Return for NHRS Compared to National Average*



Source: Author’s calculations based on the Public Plans Database

But as stated above, the key to limiting growth in the unfunded liability is the difference between actual and assumed returns. On that front, NHRS’ investment performance has varied from year to year. Figure 16 shows the annualized return as of 2017 for contributions made each year since 2007. For example, assets held in 2007 (including contributions made in that year) have earned an annualized return of 6.6 percent as of 2017 – short of the current assumed return of 7.25 percent. Similarly, contributions made in 2008 and 2009 have underperformed the assumed return as of 2017. But, the majority of contributions made in the wake of the financial crisis have exceeded assumed returns. The point is that even long-term performance exhibits volatility that must be managed.

Figure 16. *Actual Annualized Return Compared to Assumed Return for NHRS, 2007-2017*



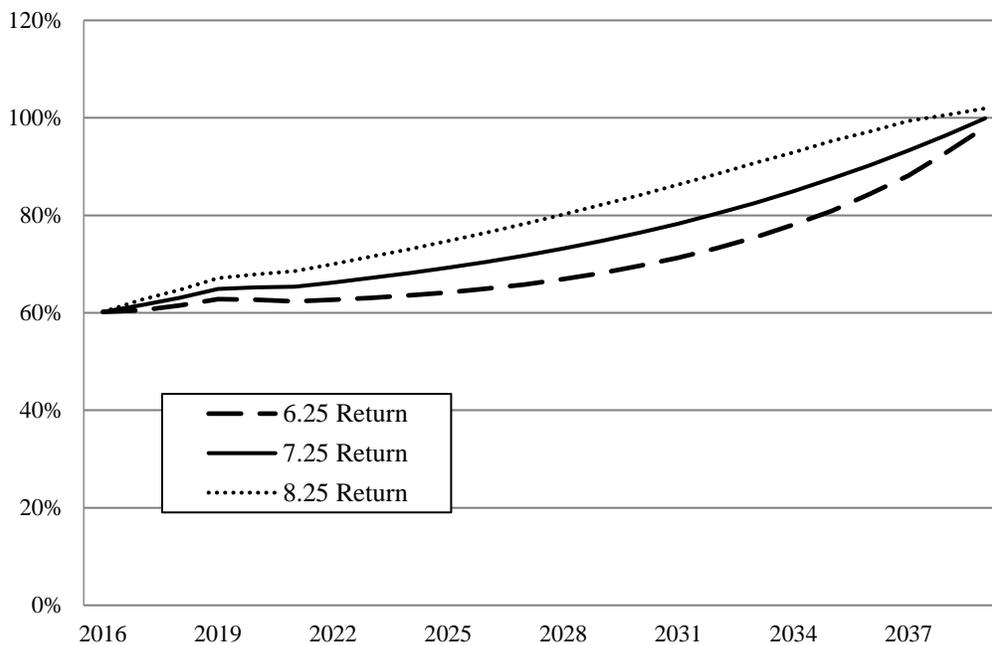
Source: CRR calculations based on various NHRS CAFRs from 2007-2016.

### Part III: How Can NHRS Better Ensure Improved Funding in the Future?

This section will project NHRS' funded ratio, required contributions, and unfunded liabilities. Importantly, all projections assume that the statutory full funding date of 2039 is maintained. The projections also assume that NHRS maintains its current assumptions for future payroll growth and investment returns.<sup>14</sup>

*Current Funding Regime:* Under current law, NHRS' unfunded liability is to be paid off by 2039 (a closed period) and the NHRS is using a level-percent-of-payroll amortization method to do so. To provide a sense of how investment returns might impact the projections for NHRS, the first set of projections include scenarios where the realized return is equal to the assumed return, and where the realized return is 1 percent above and 1 percent below the assumed return. Figures 17 and 18 show the trajectories of the funded ratio and UAAL under current methods in 2017-2039. If the full ARC is paid and NHRS achieves its assumed 7.25 percent return each year (and all other actuarial experience perfectly matches assumptions), the funded ratio steadily increases and the UAAL steadily shrinks until 2039 when it is zero and the plan is fully funded. Under a 6.25-percent return, the funding improvement and UAAL decline would be more backloaded, but full funding is still achieved in 2039 per statute. On the other hand, if returns are better than expected – say, 8.25 percent – more progress is made in the earlier years.

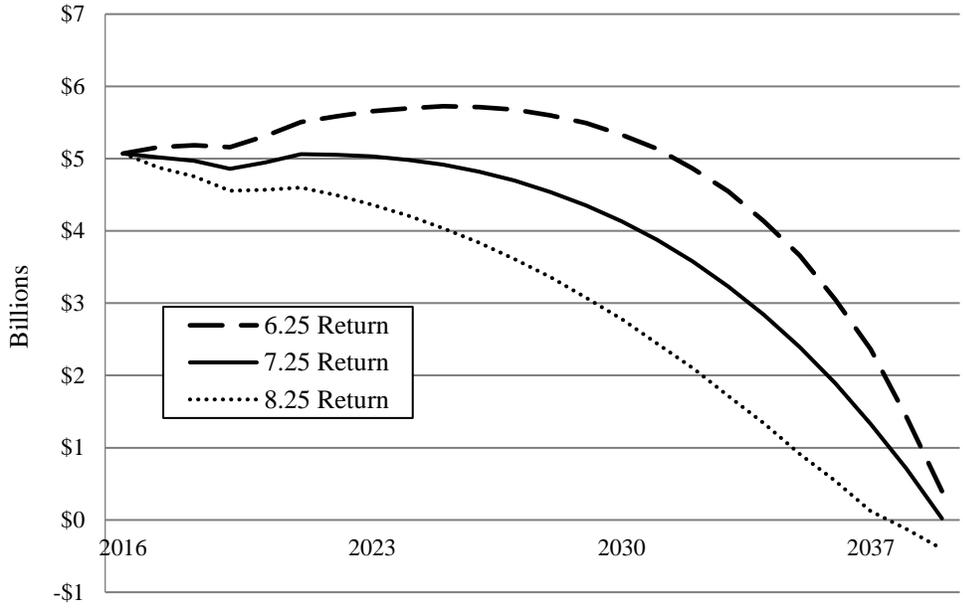
Figure 17. *Projected Funded Ratio for NHRS at Various Realized Returns, 2016-2039*



*Source:* CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed investment return is 7.25 percent.

<sup>14</sup> See Appendix III for projection tables.

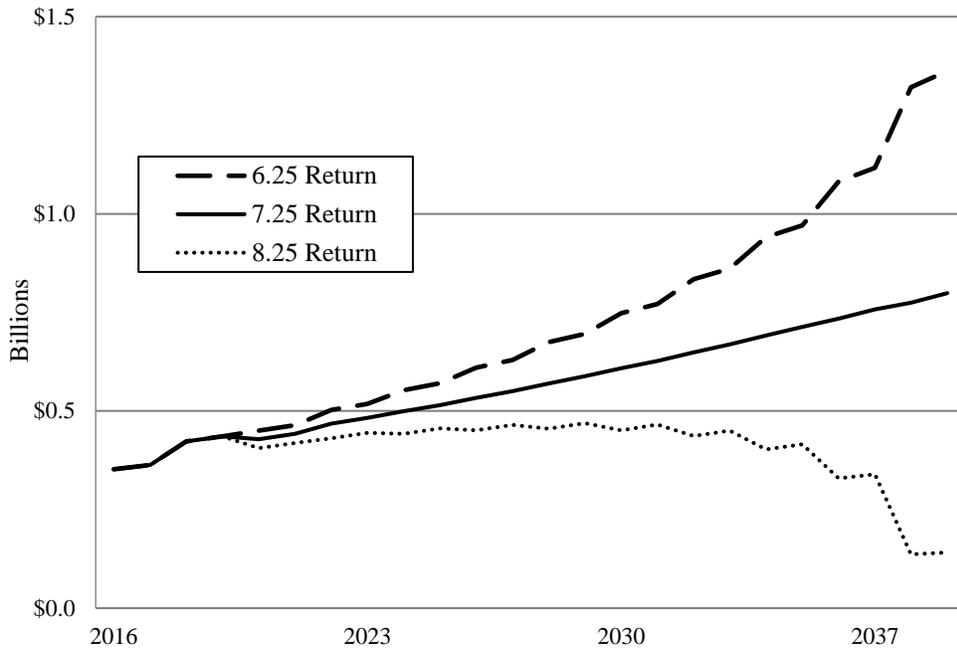
Figure 18. *Projected UAAL for NHRS at Various Realized Returns, 2016-2039*



Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed investment return is 7.25 percent.

Figure 19 shows the ARC over the same period (2017-2039). Unlike the funded ratio and UAAL charts, the investment return is critical to the ARC projection. Under the 7.25-percent return scenario, the ARC steadily rises each year from just under \$350 million in 2016 to about \$800 million in 2039 – primarily a result of the backloaded amortization method. However, if investment returns over the projection period are 1 percent lower than assumed (6.25 percent versus 7.25 percent), the ARC rises from \$350 million in 2016 to \$1.4 billion in 2039. Of course, if returns are higher than expected (8.25 percent rather the assumed return of 7.25 percent), the ARC rises modestly from \$350 million in 2016 to about \$470 million in 2029, before declining to about \$140 million by 2039.

Figure 19. *Projected ARC for NHRS at Various Realized Returns, 2016-2039*

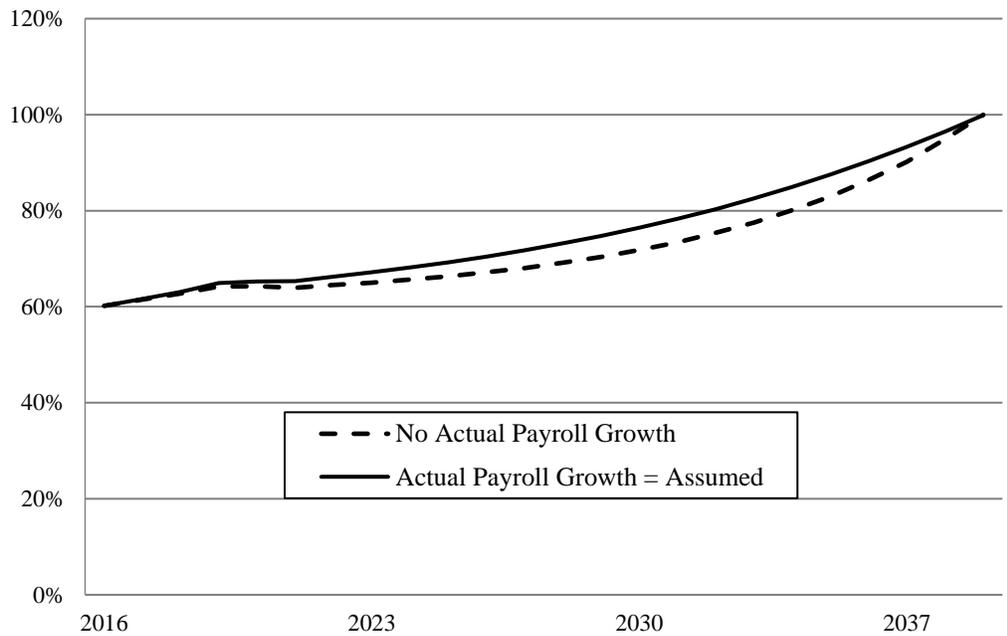


Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed investment return is 7.25 percent.

To test the sensitivity of projected outcomes to differences between actual and assumed payroll growth, a second set of projections presented below assume that actual payroll growth equals the assumed growth or equals zero. Figure 20 shows that lower-than-assumed payroll growth negatively impacts the path to full funding and the decline in the UAAL. The impact on the funding trajectory from lower-than-expected payroll growth is moderated by the fact that each biennial valuation increases amortization payments to account for lower-than-expected-payrolls. In terms of the impact that low payroll growth has on total employer contributions, incremental increases in amortization payments are partially offset by the fact that lower-than-expected payroll means lower-than-expected growth in new liabilities and lower normal cost.<sup>15</sup>

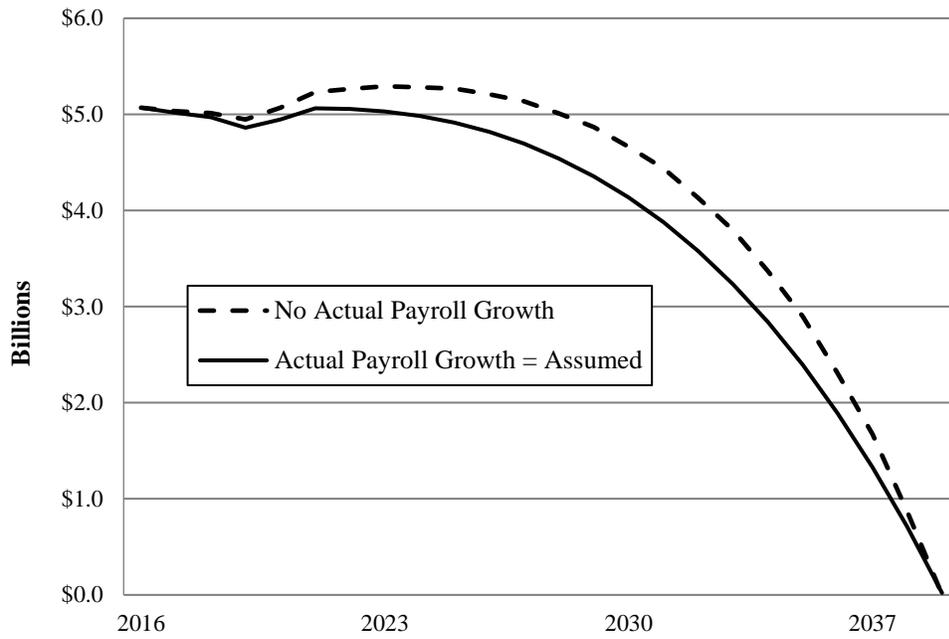
<sup>15</sup> See Appendix I for a brief analysis on the impact of payroll growth.

Figure 20. *Funded Ratio for NHRS at Various Payroll Growth Levels, 2016-2039*



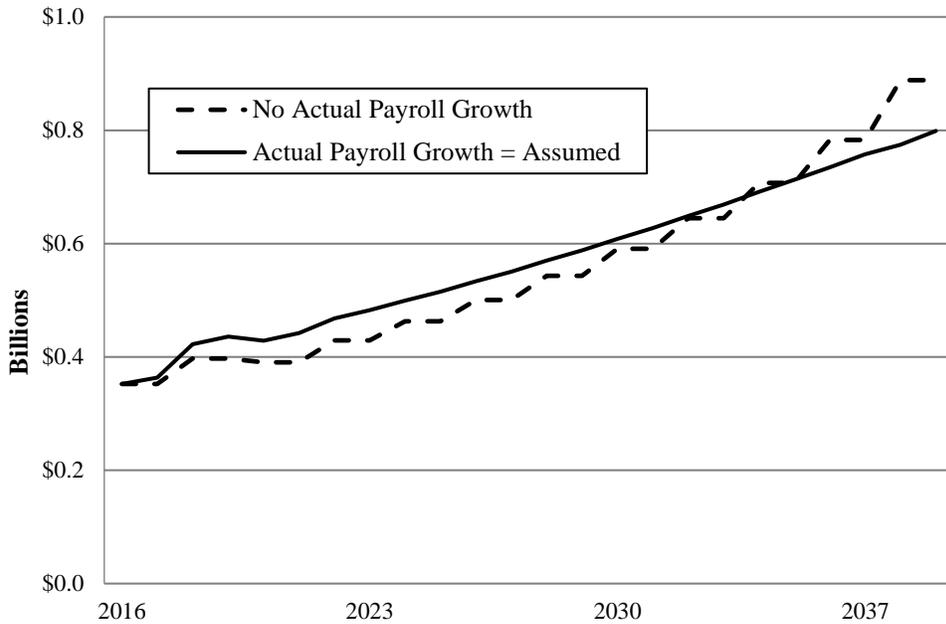
Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) investment return is 7.25 percent.

Figure 21. *Projected UAAL for NHRS at Various Payroll Growth Levels, 2016-2039*



*Source:* CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) investment return is 7.25 percent.

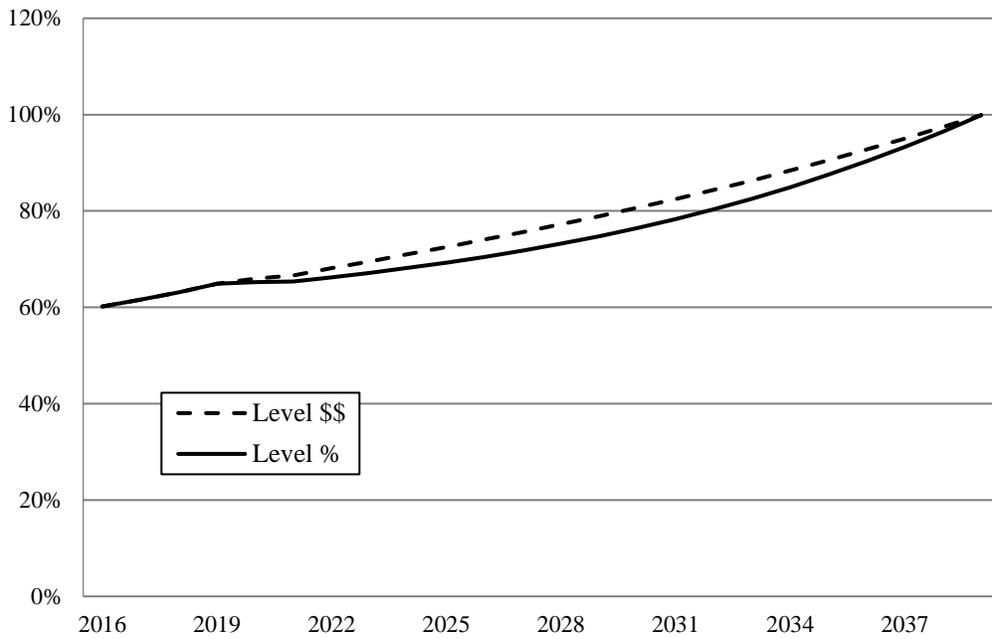
Figure 22. *Projected ARC for NHRS at Various Payroll Growth Levels, 2016-2039*



Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039 using a level-percent-of-pay. The assumed payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) investment return is 7.25 percent.

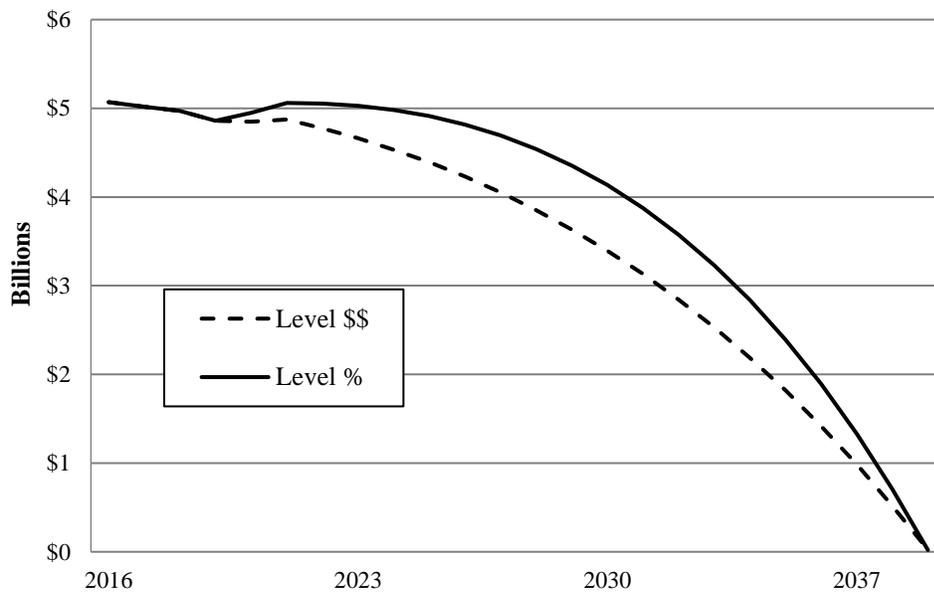
*Alternative Funding Method - a Level-Dollar Amortization of the UAAL:* To limit the scheduled increases in the dollar contributions resulting from the level-percent-of-payroll method, one alternative is to switch NHRS to level-dollar amortization of the UAAL. Figures 23 and 24 show projections of the funded ratio and UAAL under both the level-percent-of-payroll and level-dollar amortization methods, maintaining the full funding date of 2039 and an assumed return of 7.25 percent. The funded ratio under the level-percent-of-pay method falls below that of the level-dollar method because of the level-percent-of-payroll method backloads amortization payments. Conversely, the funding ratio improves more quickly under a level-dollar amortization method compared to level-percent-of-payroll.

Figure 23. *Projected Funded Ratio for NHRS under Alternative Funding Methods, 2016-2039*



Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) investment return is 7.25 percent.

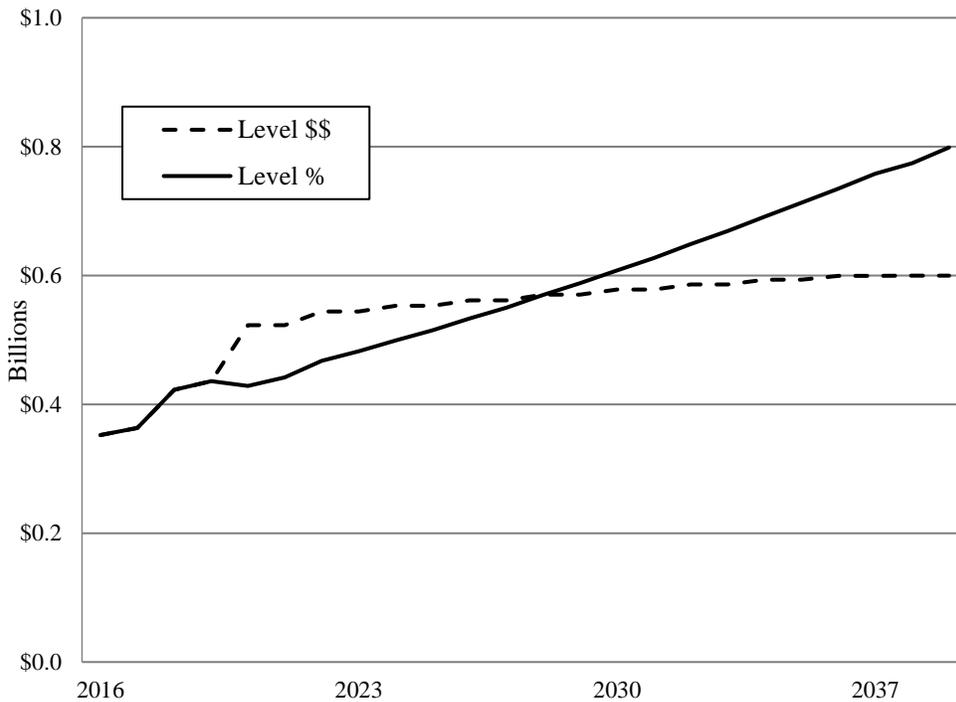
Figure 24. *Projected UAAL for NHRS under Alternative Funding Methods, 2016-2039*



Source: CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) investment return is 7.25 percent.

In addition to the different trajectories for the funded ratio and UAAL, contributions under level-percent-of-pay and level-dollar methods also have very different trajectories (see Figure 25). While contributions under the level-dollar method are greater than those under the level-percent-of-payroll method in the early years, level-dollar contributions increase much more slowly – peaking at \$600 million in 2039.<sup>16</sup> On the other hand, while contributions under the level-percent-of-payroll method are lower in the early years, they eventually exceed level-dollar payments; the percent-of-payroll contributions peak in 2039 at \$800 million.

Figure 25. *Projected ARC for NHRS under Alternative Funding Methods, 2016-2039*

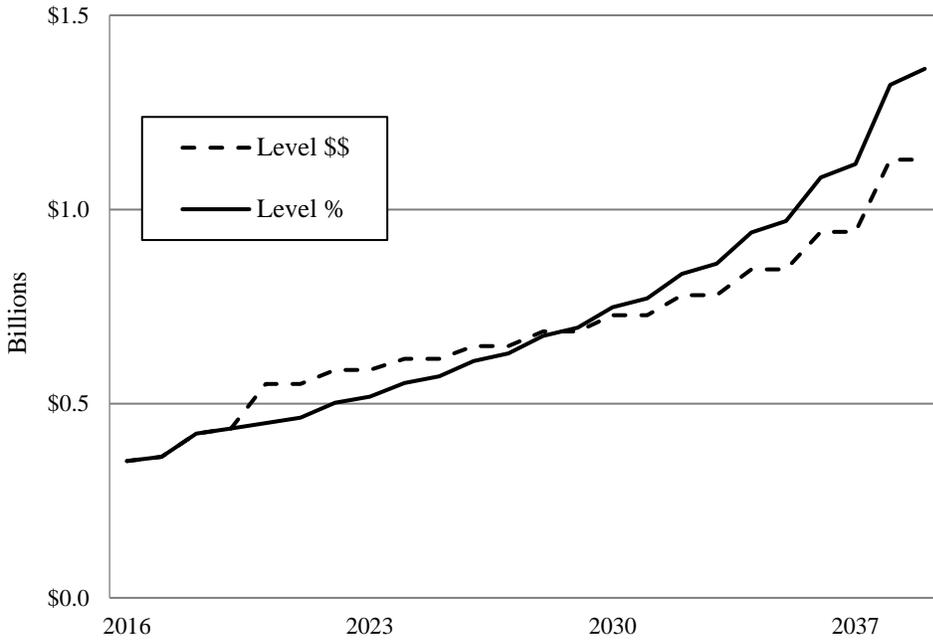


*Source:* CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed (and realized) return is 7.25 percent.

Again, because returns are critical to cost projection, Figure 26 shows employer costs under a level-percent-of-pay and percent-of-payroll method, both with a 6.25-percent realized return over the projection period. Under both funding methods, annual costs could rise above \$1 billion by 2039.

<sup>16</sup> The ARC has two components - the normal cost and amortization payments. While the method for amortizing the UAAL is level dollar, the normal cost is based on entry age normal and rises each year with payroll. As a result, the the ARC rises slightly due to increasing normal costs even though a level-dollar amortization approach is used.

Figure 26. *Projected ARC for NHRS under Alternative Funding Methods and a 6.25-Percent Return, 2016-2039*



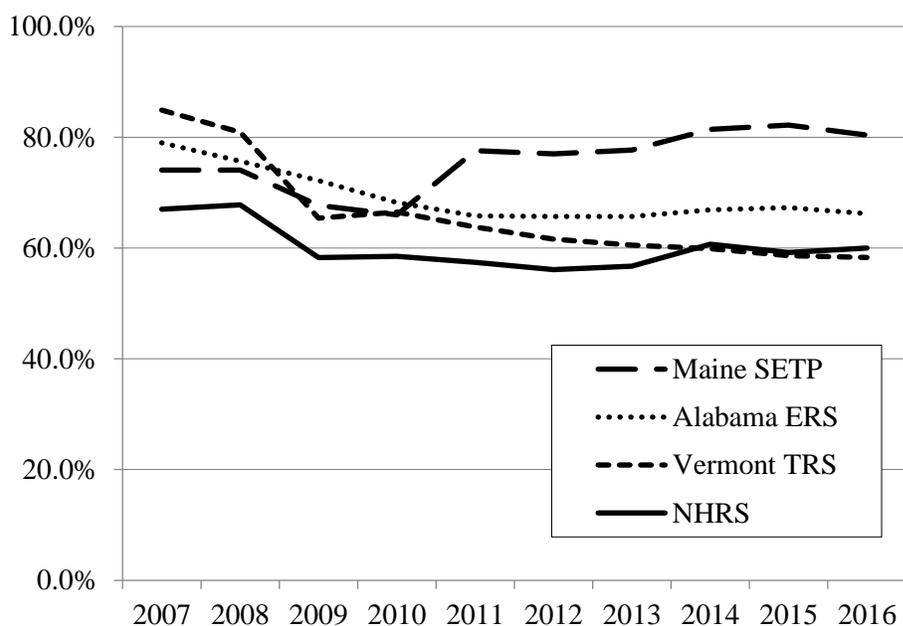
*Source:* CRR calculations. Note: This projection assumes the unfunded liability is fully amortized by 2039. The assumed (and realized) payroll growth is 3.25 percent for employees, police and fire, and 3.0 percent for teachers. The assumed return is 7.25 percent.

## Part IV: How Have Other States Addressed Their Pension Challenges?

To place NHRS in the broader context of the public pension landscape, this section examines the experience of three other state-administered plans: the Maine State Employees and Teachers Retirement Plan (Maine SETP), the Alabama Employees' Retirement System (Alabama ERS), and the Vermont State Teachers Retirement System (Vermont TRS). Similar to NHRS, significant investment losses during the 2008-2009 crisis hurt the funded status of all three plans. All plans have also taken corrective action, including reductions to their assumed rates of return and some degree of benefit cuts.

Yet, their post-financial crisis funding trajectories have not been uniform (see Figure 27). Maine SETP is the only plan that has been able to recover to its pre-crisis funding levels. And while the funding of NHRS and Alabama ERS has stabilized in recent years, the funded status of Vermont TRS has continued to decline. The following sections take a closer look at each plan's narrative, and presents key takeaways from the three plans' collective experience.<sup>17</sup>

Figure 27. *Funded Ratio for NHRS, Maine SETP, Alabama ERS, and Vermont TRS, 2007-2016*



Source: Public Plans Database (PPD; 2007-2016).

<sup>17</sup> For a more detailed discussion on individual plans see Appendix II.

*Case Studies in Brief: Maine, Alabama, and Vermont*

*Maine State Employees and Teachers Retirement Plan.* Maine SETP is a state-administered plan – in the same region as NHRS – that has been able to improve its funding since the financial crisis. During the crisis, the plan’s funded ratio dropped from 74.1 percent to 66.0 percent and costs rose from a historical average of around 17 percent of payroll to about 23 percent. Yet Maine SETP’s funded ratio has increased to 80.4 percent since 2009. While – like NHRS – Maine SETP has a consistent history of paying the full ARC, the key elements that have rerouted its funding trajectory since the crisis are the modifications made to current employee benefits and rigorous funding methods.

The primary driver of Maine SETP’s recovery has been the benefit reductions made after the crisis. Following the drop in its funded ratio in 2009, Maine SETP reduced COLA benefits for current employees and made changes to the core benefits of non-vested employees and new hires; these changes will improve long-term solvency and impact the trajectory of future liability growth but have no immediate impact on unfunded liability. The changes to current employee COLAs, however, immediately lowered the plan’s UAAL, dramatically increased the funded status – from 66.0 to 77.6 percent – and reduced costs to around 15 percent of payroll.

Since then, the improvement in Maine SETP’s funding has primarily come from its method for amortizing unfunded liabilities. Like NHRS, Maine SETP uses a level-percent-of-payroll method amortization. A level-percent-of-pay approach results in smaller amortization payments in earlier years and larger payments in later years because contributions are expected to grow in step with an increasing payroll base. While a level-percent-of-payroll method backloads UAAL payments, Maine SETP reduced the backloading by using a relatively short amortization period. The system’s funding policy has set a full-funding date of 2028 for the UAAL that existed as of 1998, and – until recently – 10-year amortization periods for any UAAL generated after 1998. As such, the resulting ARC payments, although based on a level-percent methodology, have still been large enough to meaningfully reduce the unfunded liability each year. As of November 7, 2017, the amortization period for new gains/losses changed from 10 to 20 years. This change will delay Maine SETP’s funding improvement going forward.

*Alabama Employees’ Retirement System.* Alabama ERS is a state-administered plan that, similar to NHRS, has seen relatively little progress in its funded status in the wake of the financial crisis, despite consistently paying 100 percent of its annual required contribution. The impact of the crisis on the funded ratio of Alabama ERS was limited from 2012 forward, however, due to the plan’s resetting of actuarial assets to market assets – shedding the burden of smoothing in 2009’s steep investment losses. And yet, Alabama ERS has been unable to make progress, primarily due to its poor funding regime. The plan made changes to employee benefits, but there was no immediate impact on funding because the changes applied to new hires only. In addition to its lagged funding, Alabama ERS is a useful plan to examine for another reason: its experimentation with an alternative approach to investment return assumptions in the wake of the crisis.

Up until 2012, Alabama ERS used a level-percent-of-pay method with a 30-year open amortization period. When coupled with a long amortization period, low initial payments under a level-percent method can result in the UAAL dollar amount growing in the early years of the funding schedule – a phenomenon called negative amortization. Further, an open amortization period means that the full-funding date is pushed out each year so that the plan is always at the beginning of its funding schedule where contributions remain at low levels. This allows the UAAL to grow. Starting in 2012, Alabama ERS adopted a layered amortization approach, which sets a new fixed full-funding date for the new unfunded liabilities that arise each year (a new layer of UAAL). However, each new layer of UAAL is amortized using a level-percent method over a 30-year period. This approach results in negative amortization for nearly half of the 30-year period before the UAAL actually starts declining. As such, even under this new method, annual required contributions have been insufficient to prevent growth in the dollar amount of the UAAL.

In the wake of the financial crisis, Alabama ERS switched from an 8-percent long-term return assumption to an approach that automatically set future return expectations to align recent past returns with ultimate long-term assumptions. For example, immediately after the financial crisis, the future return expectations for Alabama ERS were automatically set to be higher than its ultimate long-term expected return so that the recent lower returns plus the higher future returns would result in an overall return that was equal to the plan's ultimate long-term expected return. Conversely, in 2015, after a period of above-average returns, the assumed returns were set lower than their ultimate long-term expectations, so that the overall return would equal the plan's ultimate long-term expected return. The lower future expectations translated to increased required contributions. In 2016, the plan shifted to a flat rate of 7.875 percent – and then 7.75 percent from 2017 forward – which was higher than what would have been projected under the method, and as a result, shrank liabilities.

*Vermont State Teachers Retirement System.* Vermont TRS is a state-administered plan – also geographically close to NHRS – whose funding has continued to decline since the financial crisis, despite paying 100 percent of its annual required contribution. Similar to NHRS, Vermont TRS used an aggregate cost method to fund and a frozen initial liability method to report liabilities until 2006 (when it switched to entry age normal for funding and reporting liabilities). Vermont TRS has been unable to gain footing primarily due to the funding methodology and to experimentation with an alternative approach to its investment return assumption. Modifications to employee benefits in 2010 had only a modest impact on plan funding, because the changes primarily applied to non-vested members and new hires.

Until 2006, Vermont TRS used an aggregate cost method to determine the ARC and a frozen entry age method to report its funded ratio. This method made it difficult to accurately assess the plan's funding position each year. As a result, in 2006, after switching to an entry age normal method for funding and reporting, the unfunded liability increased and the plan's funded ratio declined. In its transition to entry age, Vermont TRS also extended its 13-year amortization period to a 30-year period. Because Vermont TRS uses a level-percent-of-pay method, the long amortization period resulted in low initial payments that can cause negative amortization. While

Vermont TRS has adhered to its 30-year closed schedule, the lower payments are currently insufficient to make meaningful progress in paying down the UAAL.

In 2012, in response to the results of a five-year experience study, Vermont TRS experimented with the use of a “select-and-ultimate” assumed return. This approach required the plan to maintain separate short- and long-term return expectations. Vermont TRS set lower return expectations in the short-term with higher expectations for the long-term, based on the plan’s target asset allocation. Interestingly, the plan annually reset the return schedule so that its assumed return always reflected the low short-term returns expectations, which increased the UAAL each year. The plan switched back to a single rate of 7.95 percent in 2015. While it is not clear why the plan returned to its old method, the 2010 experience study indicated that shifting to a select-and-ultimate approach increased costs when they first made the transition.

### *Key Takeaways*

The main takeaway from the case studies is that four key factors explain the trajectory of funding for each plan. Two of the factors – investment performance and funding practices – affect actuarial assets, and the other two – changes to actuarial assumptions and methods, and benefit modifications – affect liabilities.

*Investment returns.* While all plans experienced heavy investment losses in 2008 and 2009, the investment performance of all three plans since 2010 – and NHRS – has roughly equaled or exceeded each of their assumed returns over the period (see Table 3).

Table 3. *Comparison between Average Assumed and Actual Return Performance, 2010-2016*

	Actual return	Assumed return
Maine SETP	8.9%	7.2%
Alabama ERS	9.3	8.0
Vermont TRS	8.2	8.3
New Hampshire RS	10.2	7.8
National average	9.5	7.6

Note: Average actual returns represent the geometric mean.

Source: Authors’ calculation based on PPD (2010-2016).

And yet – with the exception of Maine SETP – plan funding has dragged and the strong investment performance has not improved funding to the degree one would expect. One explanation lies in the impact of asset smoothing on plan funding.<sup>18</sup> Because all four plans

<sup>18</sup> Growth in actuarial assets lagged growth in market assets between 2010 and 2016 for all four plans.

incorporate some asset smoothing when calculating actuarial assets, the 2008-2009 investment losses experienced were not recognized immediately and were phased-in over a three- to five-year period. This phase-in of such significant losses limited the growth in actuarial assets between 2009 and 2014, dampening improvements to the funded status. For Alabama ERS, the lingering impact of the financial crisis on funding stopped in 2012 due to its re-setting of actuarial assets to market assets.

*Funding and Contributions.* Despite the fact that all plans have paid 100 percent of the annual required contribution since 2007 – calculated using a level-percent-of-pay method – funding progress has not been uniform. Since 2011, Maine SETP was the only plan whose contributions were sufficient to prevent annual growth in the UAAL. In general, using a level-percent method backloads amortization payments so that smaller payments are scheduled in the initial years and larger payments later. The backloaded funding progress of the level-percent method leaves the plan more vulnerable to declining finances in the near-term and ballooning costs down the road to make up for it – specifically in the event of poor investment performance. The alternative is a level-dollar amortization method that schedules equal dollar payments each year and reduces more of the unfunded liability in the early years.

One way to combat the backloaded nature of level-percent amortization is to shorten the amortization period. Although Maine SETP uses a level-percent method, it uses a shorter amortization period than all three plans, as well as most other public pension plans. Currently, Maine SETP has a 2028 full-funding date for the UAAL that existed as of 1998 and uses 10-year periods for any UAALs generated after that point.<sup>19</sup> In comparison, as of 2016, both NHRS and Vermont TRS have 23 years remaining. And while Alabama ERS resembles Maine SETP in its amortization of new UAALs in layers, its 30-year amortization periods have limited its funding progress.

*Actuarial Assumptions.* Like most public pension plans' response to the financial crisis, all four plans compared here adjusted their assumed returns (see Table 4). The investment return assumption is comprised of two key components – the real rate of return and price inflation. Generally, these two pieces tend to move in step, but not always. To understand the impact of return assumptions on plan finances, the focus should be on the real rate of return – the return expected above inflation. While reductions in return assumptions set a plan up for expected long-term solvency – bolstering plans in the event of poor future performance – the immediate impact on a plan is a larger liability.

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<sup>19</sup> On November 7, 2017, Mainers voted the amortization period for new gains/losses was changed from 10 to 20 years.

Table 4. *Nominal Return, Inflation, and Real Return Assumption by Plan, 2007-2016*

NHRS				Alabama ERS			
	Nominal	Inflation	Real		Nominal	Inflation	Real
2007	8.5%	3.5%	5.0%	2007	8.0%	4.5%	3.5%
2008	8.5	3.5	5.0	2008	8.0	4.5	3.5
2009	8.5	3.5	5.0	2009	8.0	4.5	3.5
2010	8.5	3.5	5.0	2010	8.0	4.5	3.5
2011	7.75	3.0	4.75	2011	8.0	3.0	5.0
2012	7.75	3.0	4.75	2012	Ultimate- 8.0	3.0	5.0
2013	7.75	3.0	4.75	2013	Ultimate- 8.0	3.0	5.0
2014	7.75	3.0	4.75	2014	Ultimate- 8.0	3.0	5.0
2015	7.75	3.0	4.75	2015	Ultimate- 8.0	3.0	5.0
2016	7.25	2.5	4.75	2016	7.875	2.875	5.0
Maine SETP				Vermont TRS			
2007	7.75%	4.5%	3.25%	2007	8.25%	3.0%	5.25%
2008	7.75	4.5	3.25	2008	8.25	3.0	5.25
2009	7.75	4.5	3.25	2009	8.25	3.0	5.25
2010	7.75	4.5	3.25	2010	8.25	3.0	5.25
2011	7.25	3.5	3.75	2011	8.25	3.0	5.25
2012	7.25	3.5	3.75	2012	Select-and-ultimate	3.0	
2013	7.25	3.5	3.75	2013	Select-and-ultimate	3.0	
2014	7.125	3.5	3.625	2014	Select-and-ultimate	3.0	
2015	7.125	3.5	3.625	2015	7.95	3.0	4.95
2016	6.875	2.75	4.125	2016	7.95	3.0	4.95

Source: Authors' calculations from plan actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

*Employee Benefits.* In the wake of the financial crisis, all four plans modified employee benefits in order to improve long-term plan solvency. However, the plans differed in the types of benefit modifications made and the impact they had on liabilities. Modifications to the benefits of new hires, like increases to current member contributions, reduce the costs of a plan in the long-term, but have no impact on existing liabilities or funded ratios. Immediate changes to the funded ratio occur only if modifications are made to the benefit provisions of current employees.

The benefit modifications made by NHRS and Vermont TRS are similar in that they reduced the maximum allowable pension benefit that could be promised for all members, but reduced benefits the most for non-vested current employees and new hires. Alabama ERS made significant changes to core benefit provisions, but only for new employees entering the system. Again, while changes to benefits for new hires or non-vested members improve the long-term solvency of a plan, they have limited impact on the funded ratio in the short-term. Maine SETP made significant changes to the benefits of current members, and saw a significant jump in funded ratio in result of an immediate reduction in liabilities.

### *Looking Forward*

The case studies show that the financial crisis spurred a lot of change – notably, a wave of rapid reductions in plans’ investment return assumptions and benefits. Likely, this wave has passed and, as a result, liability growth should steady. In addition, actuarial assets should grow more in step with market returns, now that the dramatic losses experienced in the financial crisis have been smoothed out. Moving forward, the key for making meaningful progress in plan funding is paying adequate actuarially required contributions (ARC).

The plans examined have all done a good job of paying their ARCs. Unfortunately, these payments are often not enough to make meaningful reductions in UAAL. While the use of a level-dollar amortization approach is most effective at paying down the unfunded liability quickly, the experience of plans demonstrates that not all level-percent models are alike. For plans that rely on a level-percent method, the shorter the amortization period the better for two reasons. First, a shorter amortization period means larger payments in the earlier years so that real progress can be made on reducing the UAAL in the short-term – and sooner. Second, a shorter amortization reduces the risk of experiencing a shock that disrupts the schedule of required payments. Because a level-percent method backloads costs, in the event of a shock, the scheduled increases in required contributions for later years would grow even larger, often reaching unacceptable levels for governments.

In sum, Maine SETP experienced dramatic improvement in its funding due primarily to benefit changes that significantly reduced its existing liabilities. Yet modifications to current employee benefits is not a feasible option for most plans due to already low benefit levels, human resource concerns, or legal constraints. For this reason, an adjustment to the amortization methods is one of the remaining tools plans have at their disposal to make meaningful funding progress. Applying a more stringent amortization method – ideally, the use of a level-dollar approach, or, in the least, amortizing over a shorter period using level-percent – will help plans make faster progress towards full funding.

## Part V: Conclusion and Recommendations

Since 2007, NHRS' funded ratio has lagged the national average. And, despite good-faith efforts to fund the System, the funded ratio today is lower than it was in 2007. Much of this decline can be attributed to investment losses during the financial crisis in 2008 and 2009. However, since 2009 – despite benefit modifications, stronger-than-average returns, and a strong commitment to funding the full ARC – the funded ratio for the System has improved only slightly and the unfunded liability has grown by \$2.7 billion.

An analysis of unfunded liability growth since 2007 uncovered two important factors – investment returns and the method for amortizing unfunded liability. Since 2007, poor investment performance has accounted for \$700 million of the \$2.7 billion unfunded liability growth (\$650 million during 2008 and 2009). While the System's 7.25-percent assumed return is currently one of the lowest in the country, returns earned on recent contributions into the System have, more often than not, fallen short of that mark. In terms of amortizing the unfunded liability, the level-percent-of-pay method used by NHRS is designed to allow unfunded liabilities to grow until 2018 (after which UAAL declines). As such, some portion of the growth in unfunded liabilities since 2007 is to be expected. However, what was not expected was the additional growth of the unfunded liability due to inadequate contributions resulting from contribution rates being applied to lower-than-expected payroll growth. Since 2007, the level-percent-of-pay method has accounted for an additional \$700 million in unfunded liabilities and inadequate contributions have accounted for \$300 million.

The case study analysis found that the financial crisis spurred a lot of change in the public pension landscape, notably a wave of reductions in investment return assumptions and benefit cuts. Likely, the wave of reforms has passed and, as a result, liabilities growth should steady for public plans going forward. In addition, actuarial assets should grow more in step with market returns, now that the dramatic losses experienced from the financial crisis have been smoothed out. Moving forward, the key for plans is paying an adequate ARC.

Looking forward, projections of the ARC, UAAL, and funded status for NHRS show the potential impact that both poor investment returns, lower than expected payroll, and the funding strategy have on the path to full funding for NHRS. Importantly, in all these future scenarios, the System is ensured of being fully funded by 2039. However, if investment returns are only slightly less than expected, costs would increase substantially and the improvement in funded status delayed until the later years. In practice, the slow funding progress and continual increase in costs could also jeopardize the political will to stick to the amortization schedule.

The NHRS is a relatively small retirement system and employers do not contribute much toward the ongoing employee benefits earned each year in normal costs. As a result, total employer contributions to the System are relatively modest in comparison to the national average, with the majority of the cost aimed at paying down the existing unfunded liability. Given the relative affordability of current pension costs, below are two recommendations that would require increased costs today in order to limit the risk that poor investment returns and a backloaded

amortization plan lead to dramatic increases in future costs and/or a flagging funded ratio down the road.

#### *Shift to Level-Dollar Amortization*

Like many plans, NHRS currently uses a level-percentage-of-payroll method to amortize its unfunded liabilities. This method holds contribution levels as a percentage of government payroll, a strategy generally consistent with public sector budgeting objectives. However, this method also results in smaller amortization payments in earlier years and larger payments later, based on an assumption that payrolls will increase each year. Coupled with the 20- to 30-year amortization periods used by many plans, level-percent-of-pay often allows the unfunded liability to grow in the early years of the amortization – a phenomenon called negative amortization. Additionally, contributions may be inadequate due to differences between assumed and actual payroll growth each year. An alternative approach used by some plans is a level-dollar amortization method that schedules equal dollar payments each year – for any given amortization period – and reduces the unfunded liability more quickly than level percent of pay.<sup>20</sup>

Although a shift to level dollar would increase costs in near-term, it would have multiple benefits.<sup>21</sup> First, contributions should decline as a percent of payroll over time. Second, the funded ratio under a level-dollar approach would improve more quickly than under a level-percent-of-pay. Finally, if the assumed investment return is achieved each year, the UAAL should decrease annually in dollar terms, which may be increasingly desirable given that new GASB standards require unfunded liabilities to be reported on government balance sheets.

#### *Shift from a Single Long-Term Assumed Rate of Return to using Separate Rates for Short and Long-Term Return Expectations.*

The second recommendation is to switch from using a single long-term assumed return to using different rates for short and long-term return expectations. Ten plans have done so in the wake of the financial crisis. Three plans used a particularly novel approach in which future expectations automatically adjust to align recent investment experience with long-term expectations. For example, if past performance exceeded expectations, expectations for future returns would be reduced such that average return over the past and future periods equal the long-term expectations. Interestingly, by 2016, seven of the ten plans had shifted back to a single long-term rate; higher-than-expected returns in the wake of the financial crisis resulted in lower return expectations and increased contributions requirements. This last fact highlights an important – and desirable – feature of explicitly setting short and long-term return expectations: it often asks plans to put aside more money during times of higher-than-expected returns to protect against the risk of lower-than-expected-returns in the future if the overall performance reverts to long-term expectations.

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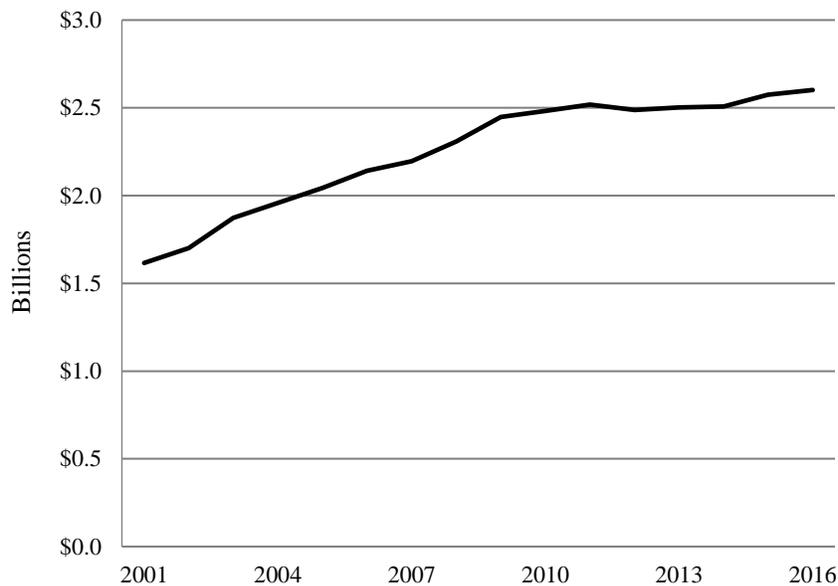
<sup>20</sup> As the amortization period shortens, the difference in funding progress between the level-percent-of-pay and level-dollar method becomes less pronounced.

<sup>21</sup> The projections provided in the 2015 actuarial valuations for NHRS show the annual employer cost under a level dollar amortization to be about \$460 million compared to \$350 million under level-percent-of-pay.

## Appendix I – Payroll Growth

Since the financial crisis, aggregate payroll growth for NHRS (and state and local governments more generally) has slowed dramatically relative to historical averages (see Figure A1). For a public employee pension plan that links contribution payments directly to payrolls, the slow growth could result in unintentional underfunding if the payroll growth falls short of expectations.

Figure A1. NHRS Covered Payroll, 2001-2016



Sources: CRR calculations based on the 2001 to 2016 NHRS Actuarial Valuations and CAFRs.

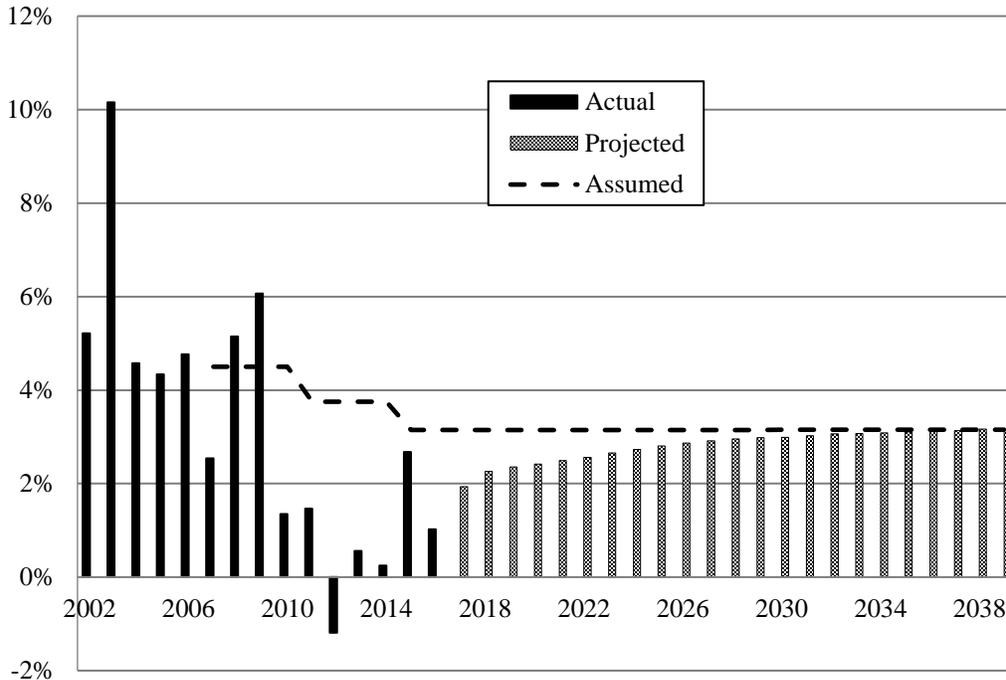
To better understand how payroll growth impacts a plan's funded status and costs, it helps to conceptually separate pension funding into its two components: 1) existing accrued liabilities that reflect the value of benefits already promised based on past work and salary; and 2) future liabilities that accrue each year as employees work longer, increase their salaries, and increase the benefits they are promised. Currently, NHRS has set aside enough assets to cover 60 percent of existing accrued liabilities, leaving about \$2.7 billion unfunded. This gap will be met through regular amortization payments deposited into the fund until 2039. Additionally, each year, normal cost contributions are made to fund the new liabilities that accrue as employees work longer and earn higher benefits on their rising salaries.

In terms of funding newly accrued liabilities, differences between expected and actual payroll growth should not lead to additional unfunded liabilities. The accrual of future liabilities is linked to the salary earned each year. Lower-than-expected salary growth results in lower-than-expected normal cost contributions, but also lower-than-expected liabilities. As such, lower payroll growth does not result in underfunding of newly accrued liabilities.

However, existing accrued liabilities – in contrast to newly accrued liabilities – are less sensitive to differences between expected and actual payroll. This is because a large portion of accrued liabilities are for retired employees. And, the accrued liability for active employees is based on past service, so expectations of their future salaries have little impact.<sup>22</sup> So, lower-than-expected payroll growth will result in lower amortization payments, but not lower (unfunded) accrued liabilities. As such, incorrect payroll assumptions can have a meaningful impact on how quickly unfunded liabilities are diminished.

Figure A2 presents actual and projected annual payroll growth for NHRS. The projections – provided by GRS and based on the assumption that the total number of active members remains constant in the future – show that annual payroll growth is expected to remain under the assumed payroll growth until 2039 (at which point the UAAL will have been paid off).

Figure A2. Actual and Projected Payroll Growth for NHRS, 2016-2039



Sources: CRR calculations based on the 2001 to 2016 NHRS Actuarial Valuations and CAFRs, and GRS projections of NHRS for 2017-2039. Note: The projection assumes that active member population for Employees, Police and Fire remains constant. For Teachers, the active member population is assumed to decline by 0.25% per year. The new entrant profile is determined by the current active population with 3-8 years of service.

<sup>22</sup> Accrued liabilities for most public plans are based on a projected benefit obligation (PBO) approach that incorporates future expected salaries of existing employees. As such, under a PBO liability, lower-than-expected payroll growth that stems from slow salary growth for existing plan members will have some impact on the accrued liability. However, if lower-than-expected payroll growth is due mostly to a decrease in the number of new hires each year, then the accrued liability will not be impacted.

If payroll growth does indeed lag expectations, this differential could result in a consistently underfunded UAAL. Fortunately, in the event this occurs, NHRS will not be left underfunded in 2039 (or face a sharp increase in cost in the final years of the schedule) because the required contributions set in each biennial valuation will be adjusted to account for lower-than-expected payrolls. But, as a result, the required contributions will rise more steeply than anticipated and improvements to the UAAL and funded ratio will be more backloaded.

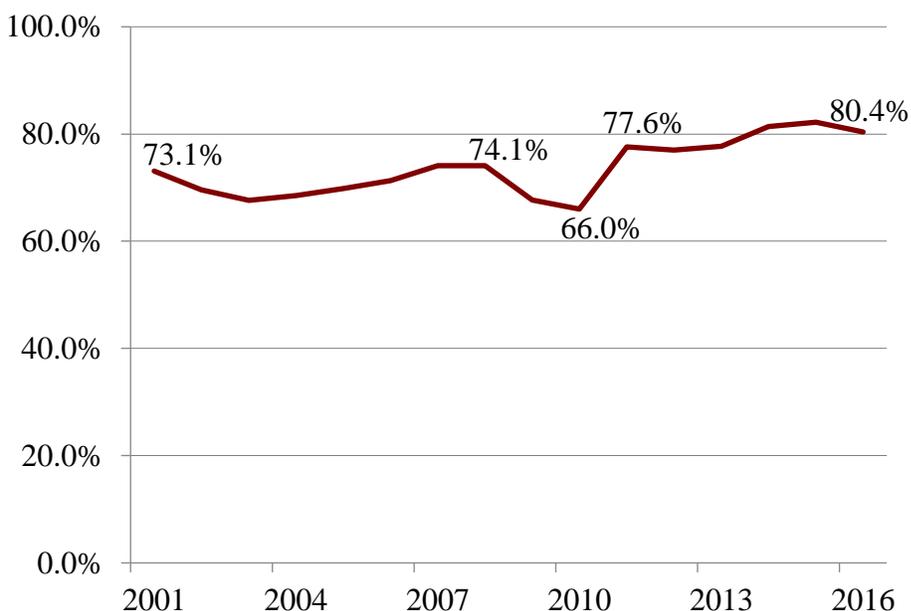
### **Maine State Employees and Teachers Retirement Plan**

#### **Overview**

The Maine Public Employees Retirement System administers seven retirement plans, including the State Employees and Teachers Plan (SETP), a multiple-employer cost sharing plan. All state employee and public school teachers are legally required to become members when hired. As of 2016, Maine SETP held \$10.5 billion in assets and covered 39,942 active members – one-third teachers. School districts are responsible for making normal cost contributions on behalf of their teachers, while the State makes payments to amortize the unfunded liability (UAAL) plus the normal cost component for state employee members.<sup>23</sup> Plan members are not covered by Social Security.

Between 2001 and 2016, Maine SETP increased its funded ratio from 73.1 to 80.4 percent (see Figure A3). Despite poor investment performance in 2008 and 2009 – dropping the funded ratio from 74.1 to 66.0 percent – Maine SETP has managed to reroute its funding trajectory. The key elements correcting this are the modifications made to current employee benefits in 2010 and rigorous funding methods. The following sections give a brief overview of the significant events that contributed to Maine SETP’s overall growth since 2001, with a focus on its recovery in the wake of the crisis.

Figure A3. *Funded Ratio for Maine State Employees and Teachers Plan, 2001 to 2016*



Source: Public Plans Database (PPD; 2001-2016).

<sup>23</sup> Prior to the introduction of the special funding situation in 2013, the State paid both the normal cost and UAAL contributions on behalf of all state employee and teacher members.

## Investment Returns and Actuarial Assumptions

Like most plans, Maine SETP experienced large losses during the financial crisis, losing 11.3 percent compared to an average loss of 12.6 percent. The investment losses reduced the funded ratio from 74.1 to 66.0 percent. Since 2010, the plan's investment performance has lagged the nation – earning 8.9 percent compared to the national average of 9.5 percent.

The overall impact of investment performance depends greatly on the plan's return expectations. Maine SETP has adjusted its return expectations many times over the past 15 years, from 8.0 percent in 2001 to a rate of 6.875 percent in 2016. Alongside adjustments to the assumed return, the plan has made multiple modifications to other workforce and demographic assumptions (such as turnover, retirement, disability, mortality, and salary growth) and the COLA (see Table A1).

Table A1. *Actuarial Assumptions for Maine State Employees and Teachers Plan, 2001-2016*

Year	Investment Return	Price inflation	Wage inflation	COLA
2001	8.0 %	5.0 %	5.5 %	4.0 %
2002	8.0	5.0	5.5	4.0
2003	8.0	5.0	5.5	4.0
2004	8.0	5.0	5.5	4.0
2005	8.0	5.0	5.5	4.0
2006	7.75	4.5	4.75	3.75
2007	7.75	4.5	4.75	3.75
2008	7.75	4.5	4.75	3.75
2009	7.75	4.5	4.75	3.75
2010	7.75	4.5	4.75	3.75
2011	7.25	3.5	1.5 <sup>a</sup>	2.55 <sup>b</sup>
2012	7.25	3.5	1.5	2.55
2013	7.25	3.5	3.5	2.55
2014	7.125	3.5	3.5	2.55
2015	7.125	3.5	3.5	2.55
2016	6.875	2.75	2.75	2.2

<sup>a</sup> Wage inflation was temporarily set to 1.5 percent for FY 2011 and FY 2012.

<sup>b</sup> No cost-of-living-adjustments were made between 2011 and 2014.

Source: Plan actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

## **Benefit Modifications**

The primary driver behind Maine SETP's recovery are benefit changes made in the wake of the crisis. Following the drop in funded ratio in 2009, Maine SETP enacted benefit reform that was first reflected in the 2011 valuation. The reforms increased the retirement age from 60 to 65 for non-vested members (those with less than 5 years of service) and new hires. The plan also suspended the COLA until 2014, lowered the cap on COLAs from 4 percent to 3 percent, and restricted the COLA base to the first \$20,000 of annual benefits – for all members. While the changes to the retirement age for non-vested members and new hires improved the long-term solvency of the plan, they had no immediate impact on unfunded liability. However, the changes to the COLA for current plan members immediately reduced the plan's UAAL, dramatically increased the funded status from 66.0 to 77.6 percent, and reduced costs from 23 percent to around 15 percent of payroll.

## **Funding**

Maine SETP's incremental funding progress since 2001 – and its accelerated progress since 2011 – can be primarily attributed to its method for amortizing unfunded liabilities. In addition to consistently paying its Annual Required Contribution (ARC) since 2001, Maine SETP uses a level-percent-of-pay approach to calculate required fund payments, structured around short, layered amortization periods. Generally speaking, a level-percent approach results in smaller amortization payments in earlier years and larger payments in later years because contributions are expected to grow in step with an increasing payroll base. Maine SETP was able to reduce the backloading of UAAL payments resulting from its level-percent method by using a relatively short amortization period.

The System's funding policy sets a full-funding date of 2028 for the UAAL that existed as of 1998, and – until recently – 10-year amortization periods for any UAAL generated after 1998. As such, the resulting ARC payments, although based on a level-percent methodology, have still been enough to meaningfully reduce the unfunded liability each year. On November 7, 2017, the amortization period for new gains/losses changed from 10 to 20 years. Once incorporated into the plan's funding policy, this change will delay its funding improvement going forward.

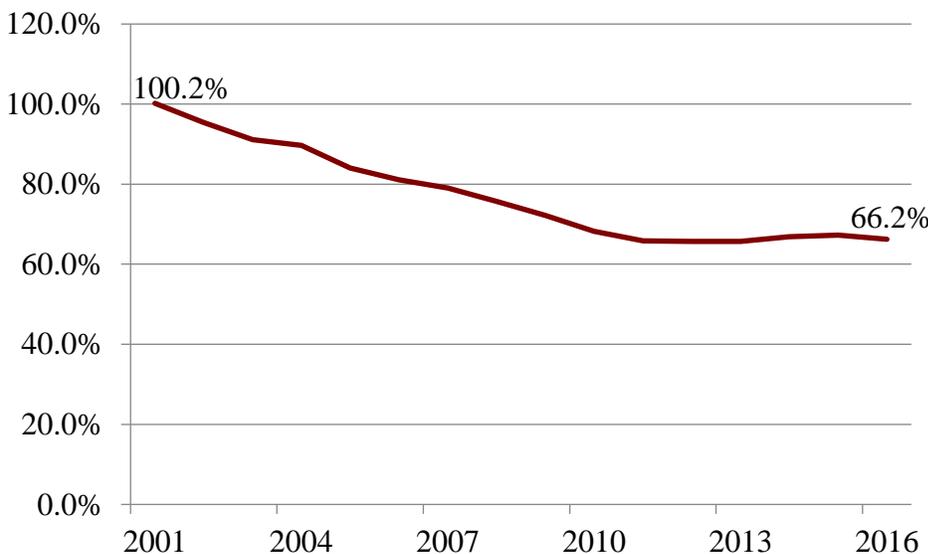
## **Alabama Employees' Retirement System**

### **Overview**

The Alabama Employees' Retirement System (Alabama ERS) is an agent, multiple-employer, cost-sharing pension plan administered by the State of Alabama. Established in 1945, the Alabama ERS is one of two main defined benefit plans in the Retirement System of Alabama. The plan provides benefits for state employees, state police, and, on an elective basis, all cities, counties, towns, and quasi-governmental organizations. As of 2016, the plan held \$11.1 billion in assets and covered 84,814 active members. Plan members are also covered by Social Security.

Between 2001 and 2016, Alabama ERS' funded ratio decreased from 100.2 percent to 66.2 percent (see Figure A4). Despite consistently paying 100 percent of its annual required contribution, the plan's funded ratio steadily declined between 2001 and 2011 and has seen relatively little improvement since. The impact of the financial crisis on the plan's funded status was limited from 2012 forward because the plan reset actuarial assets to market-value assets – shedding the burden of smoothing-in its 2009 investment losses. And yet Alabama ERS has been unable to make meaningful funding progress, primarily due to its poor funding regime. While the plan trimmed employee benefits, there was no immediate impact on funding because the changes applied to new hires only. The following sections give an overview of the significant events that contributed to the decline of Alabama ERS' funded ratio since 2001, with a focus on its inability to make meaningful progress post-crisis.

Figure A4. *Funded Ratio for Alabama Employees' Retirement System, 2001 to 2016*



Source: Public Plans Database (PPD; 2001-2016).

### **Investment Returns and Actuarial Assumptions**

Since 2008, Alabama ERS' investment performance has been on par with the national average – equal to negative 12.7 percent during the 2008-2009 crisis and 9.3 percent since 2010. Like most plans, the large losses experienced during the crisis have contributed to its inability to make meaningful funding improvements.

In the wake of the financial crisis, Alabama ERS switched from an 8-percent long-term return assumption to an approach that adjusts future expectations in a way that aligns recent returns with the plan's ultimate long-term assumption. This ultimate long-term assumption was equal to the plan's expected return over a 30-year period – 8 percent. Each year, the plan automatically adjusts its future return expectations such that actual returns over the past 7 years combined with the future return expectation over the next 23 years would equal the 30-year long-term expectation of 8 percent.

In 2012 and 2013, after a period of lower-than-expected returns during the financial crisis, Alabama ERS' future expected returns were 9.68 and 8.37 percent – greater than its ultimate 8-percent assumption. The higher return expectations resulted in lower required contributions. However, in 2014 and 2015, after a few years of above-average returns in the wake of the crisis, future expectations were set to 7.42 and 7.73 percent – lower than the ultimate long-term return. The lower return expectations resulted in increased required contributions. Finally, in 2016, the plan shifted to a single long-term rate of 7.875 percent, with a plan to reduce the rate to 7.75 percent in 2017 (see Table A2). Both these single rates are higher than what would have been projected under the automatically adjusting method. As such, the shift back to a single rate lowered liabilities and reduced costs for Alabama ERS.

Table A2. *Actuarial Assumptions for Alabama ERS, 2001-2016*

Year	Ultimate Investment return	Future expectation	Price inflation	Wage inflation
2001	8.0%		4.5 %	4.5 %
2002	8.0		4.5	4.5
2003	8.0		4.5	4.5
2004	8.0		4.5	4.5
2005	8.0		4.5	4.5
2006	8.0		4.5	4.5
2007	8.0		4.5	4.5
2008	8.0		4.5	4.5
2009	8.0		4.5	4.5
2010	8.0		4.5	4.5
2011	8.0		3.0	3.25
2012	Ultimate- 8.0	9.68 %	3.0	3.25
2013	Ultimate- 8.0	8.37	3.0	3.25
2014	Ultimate- 8.0	7.42	3.0	3.25
2015	Ultimate- 8.0	7.73	3.0	3.25
2016 <sup>a</sup>	7.875		2.875	3.125

<sup>a</sup> From 2017 forward, the investment return assumption will be lowered from from 7.875 to 7.75 percent, price inflation from 2.875 to 2.75 percent, and wage inflation from 3.125 to 3.0 percent.

Note: Table excludes COLA assumption because no future ad hoc COLA's are assumed.

Source: Plan actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

## **Benefit Modifications**

In 2013, Alabama ERS reduced benefits for employees hired on or after January 1, 2013 (Tier 2). There was no immediate impact on funding because the changes applied to new hires only. The changes increased retirement eligibility provisions, reduced the benefit multiplier, and extended the period used to calculate final average salaries for Tier 2 employees. While these changes flattened the trajectory of future liability growth, there was no immediate impact on the unfunded liability because the changes did not impact current employee benefits.

## **Funding**

The main factor impeding the progress is Alabama ERS' method for amortizing unfunded liabilities. Between 2001 and 2012, the plan used a level-percent-of-pay method with a 30-year open amortization period. This method results in smaller amortization payments in earlier years and larger payments in later years, because contributions are expected to grow in step with an increasing payroll base. When coupled with a long amortization period, the low initial payments can cause the dollar amount of the UAAL to grow in the early years of the funding schedule – a phenomenon called negative amortization. Further, an open amortization period means that the full-funding date is pushed out each year so that the plan is always at the beginning of its funding schedule when contributions remain at low levels and the UAAL is allowed to grow.

From 2012 forward, Alabama ERS adopted a layered amortization approach – which sets a fixed full-funding date for new unfunded liabilities that arise each year, layering the UAAL. However, each new layer is amortized using the level-percent-of-pay method over a 30-year period. This results in negative amortization for nearly half of the 30-year period, before the UAAL actually starts declining. As such, even under this new method, annual required contributions have been insufficient to prevent growth in the dollar amount of the UAAL.

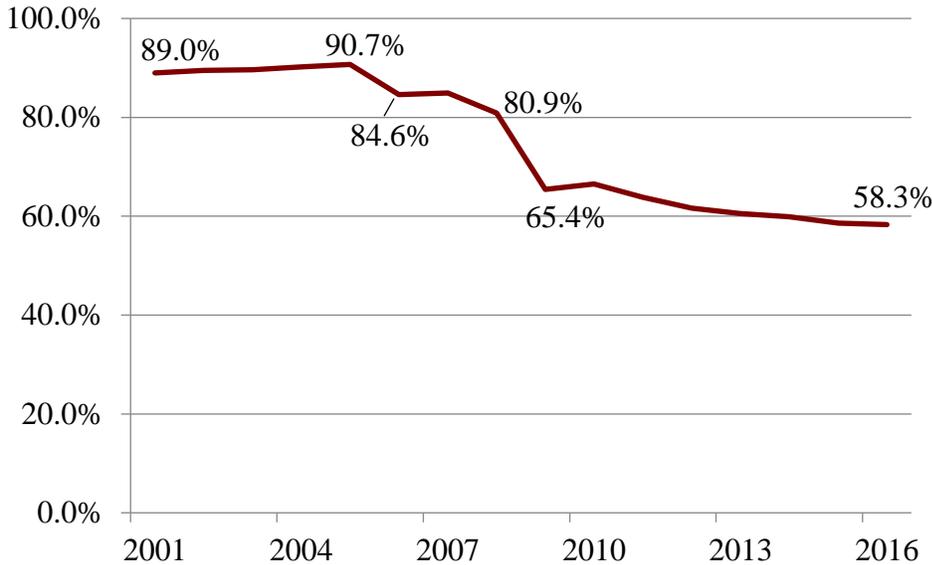
## **Vermont State Teachers Retirement System**

### **Overview**

The Vermont State Teachers Retirement System (Vermont TRS) is a multiple-employer, cost-sharing pension plan administered by the State of Vermont. Established in 1947, Vermont TRS is one of three main defined benefit plans in the Vermont Retirement System. As of 2016 the plan held \$1.7 billion in assets, covered 9,919 active teachers, and paid benefits to 8,106 service retirees. Plan members are also covered by Social Security.

Between 2001 and 2016, Vermont TRS' funded ratio decreased from 89.0 to 58.3 percent (see Figure A5). Vermont TRS has been unable to gain footing primarily due to its funding methodology and experimentation with an alternative approach to its investment return assumption. Modifications to employee benefits in 2010 had only a modest impact on plan funding, because the changes primarily applied to non-vested members and new hires. The following sections give a brief overview of the significant events contributing to Vermont TRS' decline since 2001, with an emphasis on the plan's experience in the wake of the crisis.

Figure A5. *Funded Ratio for Vermont State Teachers Retirement System, 2001-2016*



Source: Public Plans Database (PPD; 2001-2016).

### **Investment Returns and Actuarial Assumptions**

A significant factor in the decline in funding has been its investment performance. Like most plans, Vermont TRS experienced large losses during the crisis (13.5 percent compared to an average loss of 12.6 percent nationally). The investment losses increased the UAAL in 2008 and reduced the funded ratio from 80.9 to 65.4 percent. Since 2010, the plan's investment performance has lagged the national average – earning 8.2 percent compared to a 9.5 percent national average.

The overall impact of investment performance depends greatly on the return expectations of the plan. Since 2001, Vermont TRS has adjusted its long-term return assumption several times. In 2012, based on the results of a five-year experience study, Vermont TRS experimented with the use of what is called a select-and-ultimate assumed return. This approach required the plan to maintain separate short- and long-term return expectations. Vermont TRS set lower return expectations in the short-term with higher expectations for the long-term, based on the plan's target asset allocation (see Table A3). Interestingly, the plan annually reset the return schedule so that its assumed return always reflected the low short-term returns expectations, which increased the UAAL each year. The plan switched back to a single rate of 7.95 percent in 2015. While it is not explicitly clear why the plan returned to its old method, the 2010 experience study indicated that shifting to a select-and-ultimate approach increased costs.

Table A3. *Select-and-Ultimate Investment Return Assumption for Vermont State Teachers Retirement System*

Year	Rate	Year	Rate
Year 1	6.25%	Year 10	8.50%
Year 2	6.75	Year 11	8.50
Year 3	7.00	Year 12	8.50
Year 4	7.50	Year 13	8.50
Year 5	7.75	Year 14	8.50
Year 6	8.25	Year 15	8.50
Year 7	8.25	Year 16	8.75
Year 8	8.25	Year 17+	9.00
Year 9	8.50		

Source: 2011 plan actuarial valuation.

Alongside adjustments to the assumed return, the plan has made multiple modifications to other workforce and demographic assumptions (such as turnover, retirement, disability, mortality, and salary growth) and the COLA (see Table A4).

Table A4. *Actuarial Assumptions for Vermont State Teachers Retirement System, 2001-2016*

Year	Investment return	Price inflation	COLA
2001	8.5%	3.0%	4.0/2.0%
2002	8.5	3.0	4.0/2.0
2003	8.0	3.0	3.0/1.5
2004	8.0	3.0	3.0/1.5
2005	8.0	3.0	3.0/1.5
2006	8.25	3.0	3.0/1.5
2007	8.25	3.0	3.0/1.5
2008	8.25	3.0	3.0/1.5
2009	8.25	3.0	3.0/1.5
2010	8.25	3.0	3.0/1.5
2011	8.25	3.0	3.0/1.5
2012	Select-and-ultimate	3.0	3.0/1.5
2013	Select-and-ultimate	3.0	3.0/1.5
2014	Select-and-ultimate	3.0	3.0/1.5
2015	7.95	3.0	3.0/1.5
2016	7.95	3.0	3.0/1.5

Note: Plan uses separate COLA assumptions for Group A and Group C employees (Group A/Group C). Group A includes employees hired prior to 1981 who elected to remain in Group A. Group C includes all other employees. The wage inflation assumption is omitted as it is not stated explicitly in plan valuations.

Source: Plan actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

### **Benefit Modifications**

In 2010, following a dramatic decline in the funded ratio, Vermont TRS made changes to both its current and new employee benefits, which had only a modest impact on reducing the unfunded liability. Specifically, the plan reduced the maximum allowable benefit promised to all members and changed normal retirement eligibility, early retirement reductions, and the benefit factor for non-vested members with less than 5 years of service.<sup>24</sup> These modifications contributed to a slight increase in the funded ratio in 2010.

<sup>24</sup> Vermont TRS also made increases to member contributions in 2010 and 2014, which will reduce costs in the long-term, but has no immediate impact on outstanding liabilities.

## Funding

Prior to 2006, Vermont TRS used a frozen entry-age normal actuarial cost method for funding. The frozen entry-age normal method is generally used by plans that fund using the aggregate cost method, which does not incorporate an accrued liability concept. Plans that use the aggregate cost method periodically calculate an accrued liability at a specific point in time (“frozen”) using the entry age normal method. Comparing the frozen liability to actuarial assets results in a UAAL that can be amortized over a set period. After calculating the UAAL and setting an amortization schedule, the plan continues to use the aggregate cost method to fund the plan going forward (plus the additional payments set by the amortization schedule).

While the frozen entry-age method may be reasonable for funding, its reliance on intermittent calculations of the unfunded liability makes it difficult to accurately assess a plan’s funding position at any given moment. When Vermont TRS eventually switched to an entry-age normal method in 2006, the funded status dropped from 90.7 percent to 84.6 percent and the unfunded liability increased.<sup>25</sup> Vermont TRS was able to mitigate the cost of the larger UAAL by extending the amortization period from approximately 13 years to 30 years, allowing more time to pay down the increased UAAL. Since the shift in funding method in 2007, the plan has paid its annual required contribution (ARC) each year.

Despite paying its ARC since 2007 and passing benefit changes in 2010, the funded status for Vermont TRS was only 58.3 percent as of 2016. The low funded ratio can be partly attributed to the financial crisis, when the plan’s funded status dropped from 80.9 to 65.4 percent. But even since that time, the plan’s funded status has continued to decline despite relatively strong investment returns. One reason is the plan’s use of a level-percent-of-pay amortization method, which backloads amortization payments so that smaller payments are scheduled in the initial years and larger payments later. The alternative is a level-dollar amortization method that schedules equal dollar payments each year and reduces more of the unfunded liability in the early years. The slower funding progress when using the level-percent-of-pay method leaves the plan more vulnerable to declining finances in the near term and ballooning costs down the road – specifically in the event of poor investment performance.

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<sup>25</sup> Isolating the impact of shifting to an Entry Age Method reduces the 2006 funded ratio from 90.7 to 81.9 percent. The increase in investment return assumption offset this decline by reducing the unfunded liability by \$56.4 million. When combined with other miscellaneous gains/losses the changes net out to a funded ratio of 84.6 percent.

Appendix III – NHRS Projections

Table A5. *Level-percent-of-pay amortization, payroll growth equals assumed, 6.25-percent investment return, in millions of dollars*

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	7,908.7	13,066.0	5,157.3	206.9	66.4	297.0	363.4	2,683.3	802.2	13.5%	60.5%
2018	8,281.9	13,466.2	5,184.3	213.4	75.5	347.2	422.7	2,767.7	843.2	15.3%	61.5%
2019	8,701.3	13,858.6	5,157.3	220.2	77.8	358.1	436.0	2,854.9	886.3	15.3%	62.8%
2020	8,926.5	14,240.6	5,314.1	217.9	75.4	374.7	450.0	2,944.7	930.1	15.3%	62.7%
2021	9,106.0	14,611.0	5,505.0	224.9	75.1	389.0	464.2	3,037.5	973.6	15.3%	62.3%
2022	9,383.0	14,969.3	5,586.3	232.1	75.2	427.3	502.5	3,133.1	1,015.4	16.0%	62.7%
2023	9,659.8	15,316.8	5,657.0	239.6	75.4	442.9	518.3	3,231.7	1,055.5	16.0%	63.1%
2024	9,957.3	15,655.1	5,697.8	247.4	75.8	477.2	553.0	3,333.5	1,094.6	16.6%	63.6%
2025	10,259.4	15,984.8	5,725.4	255.4	76.3	494.0	570.4	3,438.4	1,133.5	16.6%	64.2%
2026	10,593.4	16,305.8	5,712.4	263.7	77.0	532.9	609.9	3,546.7	1,168.6	17.2%	65.0%
2027	10,942.5	16,622.2	5,679.7	272.3	78.0	551.1	629.1	3,658.4	1,201.9	17.2%	65.8%
2028	11,337.0	16,935.7	5,598.7	281.0	78.7	595.7	674.4	3,773.6	1,233.3	17.9%	66.9%
2029	11,754.9	17,248.7	5,493.7	290.1	79.9	615.8	695.7	3,892.5	1,264.7	17.9%	68.1%
2030	12,230.9	17,561.9	5,331.0	299.4	81.2	666.7	747.9	4,015.1	1,295.4	18.6%	69.6%
2031	12,741.1	17,875.8	5,134.7	309.0	82.7	688.7	771.4	4,141.5	1,324.2	18.6%	71.3%
2032	13,330.6	18,192.5	4,861.9	318.9	84.1	750.4	834.5	4,272.0	1,351.4	19.5%	73.3%
2033	13,968.6	18,515.3	4,546.7	329.1	85.7	775.1	860.8	4,406.5	1,376.9	19.5%	75.4%
2034	14,715.1	18,846.4	4,131.3	339.6	87.6	853.1	940.7	4,545.3	1,401.0	20.7%	78.1%
2035	15,527.0	19,188.1	3,661.1	350.4	89.4	880.9	970.4	4,688.5	1,423.6	20.7%	80.9%
2036	16,495.0	19,542.4	3,047.4	361.6	91.5	990.9	1,082.4	4,836.2	1,444.9	22.4%	84.4%
2037	17,549.3	19,913.6	2,364.3	373.1	93.7	1,022.8	1,116.5	4,988.6	1,466.0	22.4%	88.1%
2038	18,871.8	20,301.8	1,430.0	385.0	95.8	1,224.8	1,320.6	5,145.8	1,486.4	25.7%	93.0%
2039	20,312.5	20,711.1	398.5	397.2	98.2	1,264.0	1,362.2	5,307.9	1,506.5	25.7%	98.1%

Table A6. *Level-percent-of-pay amortization, payroll growth equals assumed, 7.25-percent investment return, in millions of dollars*

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	8,048.7	13,066.0	5,017.3	206.9	66.4	297.0	363.4	2,683.3	802.2	13.5%	61.6%
2018	8,495.9	13,466.2	4,970.4	213.4	75.5	347.2	422.7	2,767.7	843.2	15.3%	63.1%
2019	8,997.9	13,858.6	4,860.7	220.2	77.8	358.1	436.0	2,854.9	886.3	15.3%	64.9%
2020	9,292.6	14,240.6	4,948.0	217.9	75.4	353.0	428.3	2,944.7	930.1	14.5%	65.3%
2021	9,549.1	14,611.0	5,061.9	224.9	75.1	366.6	441.8	3,037.5	973.6	14.5%	65.4%
2022	9,914.2	14,969.3	5,055.1	232.1	75.2	392.4	467.6	3,133.1	1,015.4	14.9%	66.2%
2023	10,287.3	15,316.8	5,029.5	239.6	75.4	406.9	482.3	3,231.7	1,055.5	14.9%	67.2%
2024	10,672.7	15,655.1	4,982.4	247.4	75.8	423.6	499.4	3,333.5	1,094.6	15.0%	68.2%
2025	11,070.3	15,984.8	4,914.5	255.4	76.3	438.8	515.1	3,438.4	1,133.5	15.0%	69.3%
2026	11,488.0	16,305.8	4,817.8	263.7	77.0	456.5	533.5	3,546.7	1,168.6	15.0%	70.5%
2027	11,927.8	16,622.2	4,694.4	272.3	78.0	472.3	550.3	3,658.4	1,201.9	15.0%	71.8%
2028	12,396.5	16,935.7	4,539.2	281.0	78.7	491.3	570.0	3,773.6	1,233.3	15.1%	73.2%
2029	12,894.5	17,248.7	4,354.2	290.1	79.9	508.1	588.0	3,892.5	1,264.7	15.1%	74.8%
2030	13,427.4	17,561.9	4,134.5	299.4	81.2	526.9	608.1	4,015.1	1,295.4	15.1%	76.5%
2031	13,998.8	17,875.8	3,877.0	309.0	82.7	544.5	627.2	4,141.5	1,324.2	15.1%	78.3%
2032	14,615.9	18,192.5	3,576.6	318.9	84.1	564.6	648.6	4,272.0	1,351.4	15.2%	80.3%
2033	15,283.1	18,515.3	3,232.2	329.1	85.7	583.4	669.0	4,406.5	1,376.9	15.2%	82.5%
2034	16,007.5	18,846.4	2,838.9	339.6	87.6	603.6	691.1	4,545.3	1,401.0	15.2%	84.9%
2035	16,794.7	19,188.1	2,393.4	350.4	89.4	623.5	712.9	4,688.5	1,423.6	15.2%	87.5%
2036	17,651.1	19,542.4	1,891.4	361.6	91.5	643.1	734.6	4,836.2	1,444.9	15.2%	90.3%
2037	18,583.5	19,913.6	1,330.1	373.1	93.7	664.1	757.8	4,988.6	1,466.0	15.2%	93.3%
2038	19,592.0	20,301.8	709.8	385.0	95.8	678.6	774.5	5,145.8	1,486.4	15.1%	96.5%
2039	20,690.8	20,711.1	20.3	397.2	98.2	700.7	798.8	5,307.9	1,506.5	15.1%	99.9%

Table A7. Level-percent-of-pay amortization, payroll growth equals assumed, 8.25-percent investment return, in millions of dollars

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	8,189.8	13,066.0	4,876.2	206.9	66.4	297.0	363.4	2,683.3	802.2	13.5%	62.7%
2018	8,713.6	13,466.2	4,752.6	213.4	75.5	347.2	422.7	2,767.7	843.2	15.3%	64.7%
2019	9,302.6	13,858.6	4,555.9	220.2	77.8	358.1	436.0	2,854.9	886.3	15.3%	67.1%
2020	9,672.3	14,240.6	4,568.3	217.9	75.4	330.6	406.0	2,944.7	930.1	13.8%	67.9%
2021	10,013.1	14,611.0	4,597.9	224.9	75.1	343.6	418.8	3,037.5	973.6	13.8%	68.5%
2022	10,475.2	14,969.3	4,494.1	232.1	75.2	356.0	431.2	3,133.1	1,015.4	13.8%	70.0%
2023	10,955.9	15,316.8	4,360.9	239.6	75.4	369.3	444.7	3,231.7	1,055.5	13.8%	71.5%
2024	11,441.6	15,655.1	4,213.6	247.4	75.8	366.5	442.3	3,333.5	1,094.6	13.3%	73.1%
2025	11,949.8	15,984.8	4,035.0	255.4	76.3	379.9	456.2	3,438.4	1,133.5	13.3%	74.8%
2026	12,466.6	16,305.8	3,839.2	263.7	77.0	373.7	450.7	3,546.7	1,168.6	12.7%	76.5%
2027	13,015.2	16,622.2	3,606.9	272.3	78.0	386.9	464.9	3,658.4	1,201.9	12.7%	78.3%
2028	13,575.4	16,935.7	3,360.3	281.0	78.7	376.1	454.8	3,773.6	1,233.3	12.1%	80.2%
2029	14,173.5	17,248.7	3,075.2	290.1	79.9	389.2	469.1	3,892.5	1,264.7	12.1%	82.2%
2030	14,780.4	17,561.9	2,781.5	299.4	81.2	370.0	451.2	4,015.1	1,295.4	11.2%	84.2%
2031	15,432.2	17,875.8	2,443.6	309.0	82.7	382.7	465.4	4,141.5	1,324.2	11.2%	86.3%
2032	16,090.3	18,192.5	2,102.2	318.9	84.1	352.7	436.8	4,272.0	1,351.4	10.2%	88.4%
2033	16,801.4	18,515.3	1,713.9	329.1	85.7	364.8	450.5	4,406.5	1,376.9	10.2%	90.7%
2034	17,507.6	18,846.4	1,338.8	339.6	87.6	315.3	402.9	4,545.3	1,401.0	8.9%	92.9%
2035	18,273.2	19,188.1	914.9	350.4	89.4	326.1	415.5	4,688.5	1,423.6	8.9%	95.2%
2036	19,001.8	19,542.4	540.6	361.6	91.5	237.6	329.1	4,836.2	1,444.9	6.8%	97.2%
2037	19,791.6	19,913.6	122.0	373.1	93.7	245.8	339.4	4,988.6	1,466.0	6.8%	99.4%
2038	20,427.0	20,301.8	-125.1	385.0	95.8	40.7	136.5	5,145.8	1,486.4	2.7%	100.6%
2039	21,111.6	20,711.1	-400.6	397.2	98.2	42.6	140.8	5,307.9	1,506.5	2.7%	101.9%

Table A8. *Level-percent-of-pay amortization, no payroll growth, 7.25-percent investment return, in millions of dollars*

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	8,031.6	13,064.1	5,032.5	200.6	64.3	288.0	352.3	2,601.4	801.3	13.5%	61.5%
2018	8,440.7	13,454.6	5,014.0	200.6	70.9	326.4	397.3	2,601.4	840.6	15.3%	62.7%
2019	8,883.2	13,829.3	4,946.2	200.6	70.9	326.4	397.3	2,601.4	881.6	15.3%	64.2%
2020	9,116.2	14,185.4	5,069.2	197.7	62.5	327.7	390.1	2,601.4	923.1	15.0%	64.3%
2021	9,287.6	14,521.0	5,233.4	197.6	60.2	329.9	390.1	2,601.4	964.4	15.0%	64.0%
2022	9,569.9	14,834.5	5,264.6	197.5	58.1	371.1	429.2	2,601.4	1,004.1	16.5%	64.5%
2023	9,833.7	15,126.1	5,292.4	197.4	56.2	373.0	429.2	2,601.4	1,041.7	16.5%	65.0%
2024	10,113.8	15,396.7	5,282.9	197.4	54.5	408.1	462.6	2,601.4	1,077.8	17.8%	65.7%
2025	10,377.3	15,645.8	5,268.5	197.4	52.9	409.7	462.6	2,601.4	1,113.4	17.8%	66.3%
2026	10,664.8	15,872.2	5,207.4	197.4	51.4	449.2	500.6	2,601.4	1,146.5	19.2%	67.2%
2027	10,941.4	16,077.2	5,135.8	197.3	50.2	450.4	500.6	2,601.4	1,177.2	19.2%	68.1%
2028	11,252.7	16,261.2	5,008.6	197.3	48.8	494.4	543.2	2,601.4	1,205.5	20.9%	69.2%
2029	11,557.5	16,425.5	4,867.9	197.2	47.7	495.5	543.2	2,601.4	1,233.5	20.9%	70.4%
2030	11,906.0	16,569.5	4,663.5	197.1	46.7	544.0	590.7	2,601.4	1,260.1	22.7%	71.9%
2031	12,254.7	16,692.1	4,437.4	197.0	45.9	544.7	590.7	2,601.4	1,284.2	22.7%	73.4%
2032	12,662.2	16,793.2	4,131.0	196.9	45.1	599.9	644.9	2,601.4	1,306.0	24.8%	75.4%
2033	13,078.5	16,875.0	3,796.5	196.9	44.3	600.6	644.9	2,601.4	1,325.9	24.8%	77.5%
2034	13,571.2	16,937.7	3,366.6	196.7	43.8	663.5	707.3	2,601.4	1,343.7	27.2%	80.1%
2035	14,083.5	16,981.9	2,898.4	196.6	43.3	664.1	707.3	2,601.4	1,359.0	27.2%	82.9%
2036	14,697.7	17,006.7	2,309.0	196.5	42.9	740.0	782.9	2,601.4	1,372.0	30.1%	86.4%
2037	15,344.2	17,015.7	1,671.5	196.4	42.5	740.4	782.9	2,601.4	1,383.7	30.1%	90.2%
2038	16,136.8	17,006.6	869.8	196.3	42.2	846.2	888.4	2,601.4	1,393.4	34.1%	94.9%
2039	16,978.4	16,982.4	3.9	196.3	41.9	846.4	888.4	2,601.4	1,401.4	34.1%	100.0%

Table A9. Level dollar amortization, payroll growth equals the assumed, 7.25-percent investment return, in millions of dollars

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	8,048.7	13,066.0	5,017.3	206.9	66.4	297.0	363.4	2,683.3	802.2	13.5%	61.6%
2018	8,495.9	13,466.2	4,970.4	213.4	75.5	347.2	422.7	2,767.7	843.2	15.3%	63.1%
2019	8,997.9	13,858.6	4,860.7	220.2	77.8	358.1	436.0	2,854.9	886.3	15.3%	64.9%
2020	9,390.5	14,240.6	4,850.1	217.9	75.4	447.4	522.8	2,944.7	930.1	17.8%	65.9%
2021	9,738.0	14,611.0	4,873.0	224.9	75.1	447.7	522.8	3,037.5	973.6	17.2%	66.6%
2022	10,196.4	14,969.3	4,773.0	232.1	75.2	469.1	544.3	3,133.1	1,015.4	17.4%	68.1%
2023	10,654.1	15,316.8	4,662.7	239.6	75.4	468.9	544.3	3,231.7	1,055.5	16.8%	69.6%
2024	11,121.6	15,655.1	4,533.5	247.4	75.8	477.1	552.9	3,333.5	1,094.6	16.6%	71.0%
2025	11,590.9	15,984.8	4,394.0	255.4	76.3	476.6	552.9	3,438.4	1,133.5	16.1%	72.5%
2026	12,075.4	16,305.8	4,230.4	263.7	77.0	484.6	561.6	3,546.7	1,168.6	15.8%	74.1%
2027	12,569.5	16,622.2	4,052.7	272.3	78.0	483.6	561.6	3,658.4	1,201.9	15.4%	75.6%
2028	13,085.0	16,935.7	3,850.6	281.0	78.7	491.6	570.4	3,773.6	1,233.3	15.1%	77.3%
2029	13,614.8	17,248.7	3,633.9	290.1	79.9	490.5	570.4	3,892.5	1,264.7	14.7%	78.9%
2030	14,168.8	17,561.9	3,393.1	299.4	81.2	497.0	578.2	4,015.1	1,295.4	14.4%	80.7%
2031	14,743.2	17,875.8	3,132.6	309.0	82.7	495.5	578.2	4,141.5	1,324.2	14.0%	82.5%
2032	15,349.4	18,192.5	2,843.1	318.9	84.1	502.0	586.0	4,272.0	1,351.4	13.7%	84.4%
2033	15,983.8	18,515.3	2,531.5	329.1	85.7	500.4	586.0	4,406.5	1,376.9	13.3%	86.3%
2034	16,657.7	18,846.4	2,188.7	339.6	87.6	505.8	593.4	4,545.3	1,401.0	13.1%	88.4%
2035	17,368.3	19,188.1	1,819.8	350.4	89.4	504.0	593.4	4,688.5	1,423.6	12.7%	90.5%
2036	18,126.0	19,542.4	1,416.5	361.6	91.5	507.8	599.3	4,836.2	1,444.9	12.4%	92.8%
2037	18,928.7	19,913.6	984.9	373.1	93.7	505.7	599.3	4,988.6	1,466.0	12.0%	95.1%
2038	19,781.2	20,301.8	520.6	385.0	95.8	503.9	599.8	5,145.8	1,486.4	11.7%	97.4%
2039	20,687.3	20,711.1	23.7	397.2	98.2	501.6	599.8	5,307.9	1,506.5	11.3%	99.9%

Table A10. *Level dollar amortization, payroll growth equals the assumed, 6.25-percent investment return, in millions of dollars*

FY	Actuarial Assets	Actuarial Liabilities	UAAL	Employee Contribution	Employer Normal Cost	UAAL Payment	Employer ARC	Payroll	Benefits	ARC/ Payroll	Funded Ratio
2016	\$7,663.4	\$12,732.9	\$5,069.4	\$200.6	\$64.3	\$288.0	\$352.3	\$2,601.4	\$838.6	13.5%	60.2%
2017	7,908.7	13,066.0	5,157.3	206.9	66.4	297.0	363.4	2,683.3	802.2	13.5%	60.5%
2018	8,281.9	13,466.2	5,184.3	213.4	75.5	347.2	422.7	2,767.7	843.2	15.3%	61.5%
2019	8,701.3	13,858.6	5,157.3	220.2	77.8	358.1	436.0	2,854.9	886.3	15.3%	62.8%
2020	9,030.2	14,240.6	5,210.4	217.9	75.4	475.1	550.4	2,944.7	930.1	18.7%	63.4%
2021	9,305.3	14,611.0	5,305.7	224.9	75.1	475.3	550.4	3,037.5	973.6	18.1%	63.7%
2022	9,682.1	14,969.3	5,287.2	232.1	75.2	511.5	586.7	3,133.1	1,015.4	18.7%	64.7%
2023	10,048.8	15,316.8	5,268.0	239.6	75.4	511.3	586.7	3,231.7	1,055.5	18.2%	65.6%
2024	10,436.2	15,655.1	5,218.9	247.4	75.8	540.1	615.9	3,333.5	1,094.6	18.5%	66.7%
2025	10,815.9	15,984.8	5,168.9	255.4	76.3	539.5	615.9	3,438.4	1,133.5	17.9%	67.7%
2026	11,225.2	16,305.8	5,080.6	263.7	77.0	571.5	648.5	3,546.7	1,168.6	18.3%	68.8%
2027	11,634.4	16,622.2	4,987.8	272.3	78.0	570.6	648.5	3,658.4	1,201.9	17.7%	70.0%
2028	12,084.0	16,935.7	4,851.6	281.0	78.7	606.9	685.6	3,773.6	1,233.3	18.2%	71.4%
2029	12,538.6	17,248.7	4,710.1	290.1	79.9	605.7	685.6	3,892.5	1,264.7	17.6%	72.7%
2030	13,043.1	17,561.9	4,518.8	299.4	81.2	646.7	727.9	4,015.1	1,295.4	18.1%	74.3%
2031	13,559.2	17,875.8	4,316.6	309.0	82.7	645.2	727.9	4,141.5	1,324.2	17.6%	75.9%
2032	14,142.9	18,192.5	4,049.6	318.9	84.1	695.4	779.5	4,272.0	1,351.4	18.2%	77.7%
2033	14,747.4	18,515.3	3,767.8	329.1	85.7	693.8	779.5	4,406.5	1,376.9	17.7%	79.7%
2034	15,444.3	18,846.4	3,402.1	339.6	87.6	758.3	845.9	4,545.3	1,401.0	18.6%	81.9%
2035	16,172.7	19,188.1	3,015.4	350.4	89.4	756.5	845.9	4,688.5	1,423.6	18.0%	84.3%
2036	17,035.6	19,542.4	2,506.8	361.6	91.5	850.7	942.2	4,836.2	1,444.9	19.5%	87.2%
2037	17,942.9	19,913.6	1,970.7	373.1	93.7	848.6	942.2	4,988.6	1,466.0	18.9%	90.1%
2038	19,090.3	20,301.8	1,211.5	385.0	95.8	1,032.4	1,128.3	5,145.8	1,486.4	21.9%	94.0%
2039	20,301.9	20,711.1	409.2	397.2	98.2	1,030.1	1,128.3	5,307.9	1,506.5	21.3%	98.0%

## Appendices

### List of Documents Collected by the Commission

*The complete file will be maintained at the House Committee Services Office, 4<sup>th</sup> Floor, LOB*  
NHRS' Comprehensive Annual Finance Reports (CAFR) and actuarial valuations are posted on [www.nhrs.org](http://www.nhrs.org)

#### August 29, 2017

- Executive Summary, Final Report of the Commission to Study the Long Term Viability of the NHRS, January 2, 2008
- RSA 100-A 57, establishing the Decennial Retirement Commission

#### August 31, 2017

- NHRS Introductory Presentation to Commission, August 2017
- Disposition of Recommendations from the Executive Summary, Final Report of the Commission to Study the Long Term Viability of the NHRS, NHRS, Nov. 8, 2016

#### September 6, 2017

- U.S. State Pensions, Ratings of Pension Funding Ratios, Standard and Poor's, Sept. 12, 2016
- NHRS Briefing Paper: Employer Contribution Rates
- NHRS Employer Contribution Rates Since 1971
- NHRS FAQ: 2018-19 Employer Contribution Rates
- 'The Funding of State and Local Pensions, 2015-20', Center for Retirement Research at Boston College, June 2016
- 'State and Local Government Spending on Public Employee Retirement Systems', NASRA, April 2017
- NHRS Briefing Paper: Cost-of-Living Adjustments
- 'Cost-of-living adjustments', NASRA, October 2016
- NHRS Briefing Paper: Age 65 Pension Recalculation
- Investments Presentation, NHRS
- NHRS Briefing Paper: Independent Investment Committee
- 5-, 6-, and 7-year total fund composite returns at 6/30/09 and 6/30/16, NEPC
- Investment Assumptions, NASRA, February 2017

#### September 14, 2017

- NHRS Actuarial Funding Policy, March 11, 2014
- Public Sector Letter; 'Planning a Successful Pension Funding Policy', Segal, Nov. 2011
- 'State-by-State Retirement System Benefits', NASRA, June 2015
- 'A National Perspective of State and Local Pensions' - Keith Brainard, NASRA, Sept. 2017
- GRS Presentation to Commission on Actuarial Assumptions and NHRS Funding Policy

#### September 21, 2017

- NHRS Briefing Paper: Medical Subsidy
- Selected Medical Subsidy Statutory Provisions

- Medical Subsidy Contribution and Payment Process
- Medical Subsidy Summary, NHRS, March 2016
- Slide presentation on employer-reported retiree data, NHRS, Sept. 2017
- COLA and Supplemental Allowance reference material
- NHRS Funding History, 2007-16
- Level percent of payroll vs. level dollar amortization, NHRS
- Government Finance Officers Association (GFOA) best practices, excerpt
- Maine Retirement System Overview; successfully addressed funding issues similar issues to NH, NHRS
- NH Retired State Troopers Association, presentation to Commission
- Steve Arnold, New England Police Benevolent Association (NEBPA)
- Lt. Patrick Cheetham, NH Police Association

#### September 28, 2017

- Comparison of some key aspects of NHRS and Maine PERS
- Maine PERS Assets and Liabilities, 1991-2016; letter to George Lagos
- Potential Changes to the Maine PLD Plan
- Rich Gulla, State Employees Association, testimony to Commission
- Megan Tuttle, National Education Association of NH, testimony to Commission
- William McQuillen, NH Retirement Security Coalition, testimony to Commission
- Barbara Reid, NH Municipal Association, testimony to Commission
- NHMA graphs

#### October 12, 2017

##### Discussion of Consultant

- Commission RFP for consultant work, Sept 26, 2017
- RFP Response, Center for Retirement Research at Boston College, revised
- CRR Actuarial Effort
- RFP Response, Mr. North

##### Discussion of Age 65 Reduction, IIC and COLAs

- Background on legislation to eliminate age 65 reduction
- Performance of Independent Investment Committee
- NHRS investment return, FY 2017
- Employer Contribution Rate Stabilization
- TSA proposal, HB 1449 (2016), disposition
- TSA proposal, SB 219 (2017), bill text
- Excerpt from the Final Report of the Commission to Study the Long Term Viability of the NHRS, Recommendations relative to COLAs

#### October 19, 2017

- Blue Ribbon Panel on Public Pension Plan Funding, Summary of Recommendations, Feb. 2014
- 'Dip in Funded Status...' Pensions and Investments, Oct. 2, 2017
- SB 219 Senate Hearing Report, Feb, 2017
- HB 1449 (2016) funding TSAs, bill text
- HB 1449 NHRS bill brief

- Breakdown of NHRS pension recipients by benefit level
- Summary of Pension Plan Investment Assumptions
- Arthur Beaudry, NH State Permanent Firefighters' Retirement Association, testimony to Commission
- October 12 Commission motions and votes

#### October 26, 2017

- GRS analysis of proposed DC plan, Jan. 11, 2012
- Segal review of the DC plan and GRS analysis, Oct. 12, 2012
- Final Report of the DC Plan Study Committee, Nov. 13, 2012
- Hess Summary of the Nebraska CB plan, Nov. 5, 2015
- Nebraska Public Employee Retirement plan presentation to the House Special Committee on Public Employee Pension Plans, June 2, 2015
- Disposition of NH Legislation on DC and CB Plans, 2012-2017
- Copies of 2012-2017 NH Bills relative to DC and CB plans
- 2017 Annual Report, Nebraska Public Employee Retirement Plan

#### November 7, 2017

- NHRS 2007-2016 Amortization Schedule, GRS

#### November 9, 2017

- Center for Retirement Research draft report, Nov. 8, 2017
- Government 457b Primer from NAGDCA (National Association of Government Defined Contribution Administrators)
- State of NH Plan Features and Highlights, specific to the NH Plan
- Members of the NH Deferred Compensation Commission
- RSA 101-B Public Employees Deferred Compensation Plan (our enabling legislation)
- Sample one page enrollment form
- List of investments offered in the Plan
- Plan Partners list - political subdivisions in the NH Plan

#### November 20, 2017

- Layered Amortization presentation, GRS
- Section on amortization from "Actuarial Funding Policies and Practices for Public Pension Plans," by the Conference of Consulting Actuaries, Public Plans Community (CCA PPC), October 2014
- Brief on COLAs, NASRA, Nov. 2017
- Excerpt from GRS 2015 actuarial valuation illustrating level percent of pay vs. level dollar amortization cost projections
- Using Auto-enroll to Improve Participant Outcomes', NAGDCA

#### November 21, 2017

- GRS actuarial estimate, eliminating Group I age 65 adjustment
- GRS actuarial estimate, changing adjustment trigger from age 65 to age 67
- GRS actuarial estimate, 1.5% COLA on first \$30,000, impact on employer rates
- Working after retirement, other states' work limits, NHRS

- Working after retirement, other states' contribution requirements, NHRS
- GRS addendum to COLA study, 1.5% COLA on first \$30,000, impact on employee rates

#### November 27, 2017

- Center for Retirement Research (CRR) initial draft report, 'NHRS: A Look Backward and Forward'
- PowerPoint Presentation on CRR Report
- Working after Retirement, NHRS staff suggested revisions

#### November 29, 2017

- Commission Votes and Recommendations
- Preliminary draft report of the Commission
- Opposition to Shift to Level Dollar Amortized Payments, Barbara Reid, NHMA
- Effect of Layered Amortization, GRS slides

#### Additional Background Material

\*documents provided in electronic format only

- [\\*Final Report of the Commission to Study the Long Term Viability of the NHRS, January 2008](#)

#### NHRS Reports and Data on UAAL and OPEB Payments

- \*NHRS annual reports, summary annual reports, annual investment reports, and actuarial valuation
- Dollar amount of OPEB (medical subsidy) benefits paid out since 1999
- Compilation of the UAAL payoff projection pages
- Impact of Revisions to Actuarial Assumptions in 2011 and 2015

#### NHRS Benefits

- NHRS Briefing Paper: Benefits
- NHRS Briefing Paper: Disability
- NHRS Benefits: Group I vested before 1/1/12
- NHRS Benefits: Group I working 7/1/11 not vested before 1/1/12
- NHRS Benefits: Group I hired on or after 7/1/11
- NHRS Benefits: Group II vested before 1/1/12
- NHRS Benefits: Group II working 7/1/11 not vested before 1/1/12
- NHRS Benefits: Group II hired on or after 7/1/11
- Consumer Price Index 2010-17

#### NHRS Issues

- NHRS Briefing Paper: Legislation
- NHRS Briefing Paper: Unfunded Liability
- NHRS Briefing Paper: GASB Reporting
- NHRS Briefing Paper: Working after Retirement
- NHRS FAQ: Working After Retirement

## NHRS "Now You Know" Summaries

- Looking at Long Term Viability
- Demystifying Unfunded Liability
- Assumed Rate of Return
- Looking Back to Move Forward

## Pension Plans and Reforms in Other States

- Significant Reforms to State Retirement Systems (NASRA, June 2016)
- Issue Brief, State and Local Pension Reform Since the Financial Crisis (CS&LGE, Dec. 2016)
- NASRA Issue Brief, Shared-Risk in Public Retirement Plans (June 2014)
- Annual Survey of Public Pensions, Defined Benefit Data Summary (USCB June 2016)
- 'Lessons from Well-Funded Public Pensions: An Analysis of Six Plans that Weathered the Financial Storm', NIRS, June 2011

## Litigation

- NHRS Litigation Summary
- City of Concord v State, August 31, 2012 (HB 2 2009 employer contribution)
- Professional Firefighters v State, Dec. 10, 2014 (HB 2 2011 member contributions)
- AFT v State, Jan. 16, 2015 (HB 1645 2008)
- Professional Firefighters II, Oct. 13, 2016 (HB 2 2011 member benefits)

## Letters

- Barrett Christina, NH School Boards Association
- Michael Dolphin, Group I retiree
- Former Rep. Len DiSesa, Group II retiree
- Edward Sapienza, Group I retiree
- Bradford Connolly, Group I retiree
- Norma Wyman, Group I retiree
- Dr. Arthur Johnson, Group I retiree
- Ken Niemczyk, Group I retiree
- Lawrence Cheetham, Bedford resident
- Ernest Loomis, Group II retiree
- Jon Emerson, Group I retiree
- Bruce Wechsler, Group I retiree
- Connie Poliquin, Group I retiree

## \*Materials Submitted by Commission Members

Statement from Mr. Kaloogian; discussion of DB plans

- President Clinton and the Chilean Model
- Financial Times Chile Pension Reform Problems

Description of Material Submitted by Dr. Gustafson

- EPI Briefing Paper: 'Will Switching Government Workers To Account-Type Plans Save Taxpayers Money?'
- Boston College Center report on '401(k) Holdings in 2016'
- National Institute on Retirement Security: 'Look before you Leap': Case studies on the States of West Virginia, Michigan, and Alaska and their shift from DB to DC.....and back again
- Segal Public Sector Letters

Statement Submitted by Mr. Corrigan in Support of DC or CB Plan Adoption  
Summary of HB 1673 CB plan submitted by Mr. Hess

\*Submitted by the NH Retirement Security Coalition; William McQuillen

- 'Still a Better Bang for the Buck', National Institute on Retirement Security, Dec. 2014
- 'Case Studies of State Pension Plans that Switched to DC Plans', National Institute on Retirement Security, Feb. 2015
- 'Look Before you Leap to DC', National Institute on Retirement Security
- 'Decisions, Decisions: An Update on Retirement Plan Choices for Public Employees and Employers', National Institute on Retirement Security, August 2017
- 'Public Pensions are a Good Deal for Taxpayers', National Conference on Public Employee Retirement Systems, August 2017

## Summary of significant events

**1967:** NH Retirement System was established.

**1983:** HB 500 created the Special Account.

**1984:** State Constitution amendments 28-A and 36-A, prohibited unfunded mandates and protected the NHRS trust fund, assuring that it be used solely for the benefit of the members.

**1985:** State Supreme Court held that the NHRS board is independent of the executive branch, with the obligation to manage the system solely for the benefit of its members.

**1988:** Group I was de-linked from Social Security; the medical subsidy for Group II was established.

**1990:** NHRS trustees asked the actuary to find an alternative funding method to provide rate relief.

**1991:** HB 51 established the Open Group Aggregate methodology, set the earnings assumption at 9 ¾ % and created a Commission to study NHRS.

**1999:** The Teachers' medical subsidy was established.

**2000:** The medical subsidy was authorized for Employees of political subdivisions.

**2001:** HB 170, granted NHRS additional autonomy from the executive and legislative branches. It also authorized the medical subsidy for state Employees.

**2005:** A strategic business plan was implemented. The earnings assumption was reduced from 9% to 8.5%.

**2007:** HB 653 changed the methodology to Entry Age Normal, and restricted the flow of funds to the Special Account and added a trustee from public employers to the board. HB 876 created a Commission to study the long-term viability of the system, Chaired by former Senator William S. Bartlett, Jr.

**2008:** The majority of the Viability Commission's recommendations were enacted, including the establishment of an Independent Investment Committee (IIC) and a Decennial Commission.

**2009:** The Independent Investment Committee, chaired by former Senator Harold Janeway, began its work.

**2010:** 30-year amortization of the UAAL begins.

**2011:** Board reduced the rate of return to 7.75%. HB 2 increased member contributions, reduced benefits, changed the composition of the NHRS Board, and eliminated state employer contribution subsidy to political subdivisions.

**2014-16:** NH Supreme Court upholds legislative changes.

**2016:** Board reduced rate of return to 7.25%.

**2017:** Decennial Retirement Commission convened, as required by RSA 100-A:57, to make recommendations to ensure the long-term viability of the New Hampshire Retirement System, chaired by former Representative David Hess.

## Employer and Member Contribution Rates 1971-2019

FY	Employer Contribution Rates*					Member Rates**	
	Fiscal Year	Non-State Employees	State Employees	Teachers	Police	Fire	Group I
1971	2.85%	2.85%	3.10%	8.30%	8.30%	Variable	Variable
1972	2.61%	2.61%	3.55%	8.49%	8.86%	Variable	Variable
1973	2.96%	2.96%	3.88%	8.80%	9.05%	Variable	Variable
1974	2.77%	2.77%	4.30%	8.82%	8.31%	Variable	Variable
1975	1.90%	1.90%	2.61%	7.31%	6.76%	Variable	Variable
1976	1.59%	1.59%	1.79%	9.69%	9.52%	Variable	Variable
1977	2.43%	2.43%	3.89%	10.89%	18.44%	Variable	Variable
1978	3.03%	3.03%	2.88%	11.98%	19.05%	4.6%/9.2%	9.3%
1979	3.01%	3.01%	2.88%	11.98%	18.61%	4.6%/9.2%	9.3%
1980	3.00%	3.00%	2.96%	11.77%	13.14%	4.6%/9.2%	9.3%
1981	2.74%	2.74%	2.96%	11.71%	12.86%	4.6%/9.2%	9.3%
1982	2.55%	2.55%	1.80%	21.69%	17.29%	4.6%/9.2%	9.3%
1983	2.56%	2.56%	2.20%	21.40%	17.83%	4.6%/9.2%	9.3%
1984	2.39%	2.39%	0.88%	21.51%	23.12%	4.6%/9.2%	9.3%
1985	2.07%	2.07%	0.92%	21.71%	22.80%	4.6%/9.2%	9.3%
1986	1.27%	1.27%	0.88%	13.00%	15.54%	4.6%/9.2%	9.3%
1987	1.01%	1.01%	0.88%	11.60%	14.70%	4.6%/9.2%	9.3%
1988	2.74%	2.74%	0.65%	7.07%	13.99%	4.6%/9.2%	9.3%
1989	2.47%	2.47%	0.79%	8.20%	13.98%	5.0%	9.3%
1990	2.30%	2.30%	1.37%	9.31%	12.23%	5.0%	9.3%
1991	2.02%	2.02%	1.37%	10.22%	12.65%	5.0%	9.3%
1992	2.33%	2.33%	2.09%	7.97%	7.95%	5.0%	9.3%
1993	2.65%	2.65%	2.79%	5.07%	10.20%	5.0%	9.3%
1994-95	2.65%	2.65%	2.79%	5.07%	10.20%	5.0%	9.3%
1996-97	3.14%	3.14%	3.35%	3.81%	7.49%	5.0%	9.3%
1998-99	3.86%	3.86%	4.05%	5.22%	8.30%	5.0%	9.3%
2000-01	3.94%	3.94%	4.11%	7.13%	8.30%	5.0%	9.3%
2002-03	4.14%	4.14%	3.97%	8.20%	10.17%	5.0%	9.3%
2004-05	5.90%	5.90%	4.06%	12.11%	20.68%	5.0%	9.3%
2006-07	6.81%	6.81%	5.70%	14.90%	22.09%	5.0%	9.3%
2008-09	8.74%	8.74%	8.93%	18.21%	24.49%	5.0%	9.3%
2010-11	9.16%	11.05%	10.70%	19.51%	24.69%	5.0%***	9.3%
2012^	11.09%/8.80%	12.31%/10.08%	13.95%/11.30%	25.57%/19.95%	30.90%/22.89%	7.0%~	11.55%/11.8%~
2013	8.80%	10.08%	11.30%	19.95%	22.89%	7.0%	11.55%/11.8%
2014-15	10.77%	12.13%	14.16%	25.40%/25.30%∞	7.85%/27.74%∞	7.0%	11.55%/11.8%
2016-17	11.17%	12.50%	15.67%	26.38%	29.16%	7.0%	11.55%/11.8%
2018-19	11.38%	12.15%	17.36%	29.43%	31.89%	7.0%	11.55%/11.8%

\* Employer Rates: (1) The rates listed above are the total employer contribution rates. In 2008, legislation was passed to include both a pension and a Medical Subsidy portion as part of the total employer contribution rate, which may result in a difference in the employer rates for state and non-state Employee members.

\*\* Member Rates: (1) Group I includes Employee and Teacher members; Group II includes Police and Fire members. (2) Member rates are set by the New Hampshire Legislature. Prior to 1977, employee contribution rates were assessed on a sliding scale based on age, and, for Group I only, gender. Prior to 1989, Group I members contributed 4.60% up to the Social Security taxable wage limit and 9.20% on any excess.

\*\*\* The member contribution rate for Group I state employees whose employment began on or after July 1, 2009, was 7.0%.

^ Employer rates were recertified effective Aug. 1, 2011, to reflect 2011 legislative changes. Employers paid the higher rate shown for July 2011 only.

## Glossary

**Actuary:** A person professionally trained in technical and mathematical aspects of pensions and other related fields, who estimates how much money must be contributed to a pension plan in order to support the benefit that will become payable in the future.

**Actuarial Assumptions:** Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items.

**Actuarial Valuation:** The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan.

**Annual Required Contribution (ARC):** the required annual required contribution by the employer necessary to fund the pension's annual normal cost and amortize the unfunded accrued liability.

**Cash Balance Plan (CB):** Pooled and professionally-managed employee savings accounts with a guaranteed minimum annual investment return and an option for lifetime, guaranteed benefit.

**Cost-of-living-adjustment (COLA)** is a permanent annual increase to a pension benefit. Ex.) A 2% COLA on a \$1,000 pension increases the benefit to \$1,020 in the first year; the next year a 2% COLA would increase the pension benefit from \$1,020 to \$1,040.40; and so on.

**Defined Benefit Plan (DB):** A pension plan that specifies the amount of pension benefits to be provided at a future date (or after a certain period of time). The benefit amount is based on one or more factors such as age, years of service, and salary.

**Defined Contribution Plan (DC):** A plan in which retirement savings are based on accumulated employer and employee contributions and the investment returns on those contributions.

**Layered Amortization:** A method that sets a new fixed full-funding date for the new unfunded liabilities that arise each year (a new layer of UAAL).

**Level Dollar Amortization:** A method that calculates amortization payments with a fixed dollar amount over the amortization period, which generally results in decreasing inflation-adjusted payments over time.

**Level Percentage Amortization:** A method that calculates amortization payments as a constant percentage of projected payroll over a given number of years, increasing over time along with the payroll growth, remaining constant as a percent of payroll but increasing in terms of dollars.

**Normal Cost:** Estimated annual value of pension benefits as they are earned.

**Retirement** This is not the same as "termination" or the last day of employment. In order to begin collecting a lifetime pension, members must file a retirement application with NHRS and meet certain deadlines.

**Select and ultimate rates:** A method of pension plan rate setting that requires the plan to maintain separate short- and long-term return expectations.

**Temporary Supplemental Allowance (TSA),** sometimes referred to as a "thirteenth check" is a lump-sum payment that does not become a permanent addition to the monthly pension benefit.

**Unfunded Actuarial Accrued Liability (UAAL):** Estimated value of benefits earned in the past, but not yet funded.

### NHRS Terms

**Average Final Compensation (AFC)** The average of a member's three or five highest years of Earnable Compensation in NHRS-covered employment. (The use of the three or five-year average is dependent upon the member's date of hire and/or vested status as of 1/1/12). AFC may be subject to Earnable Compensation limits and other statutory provisions. AFC is one of the factors used to calculate the pension benefit.

**Creditable Service** The number of months and years of service credit earned as an NHRS member. Creditable Service is one of the factors used to calculate the pension benefit. Service Credit Members may be eligible to increase their amount of Creditable Service through purchasing one or more types of service credit.

**Medical Subsidy:** The Medical Subsidy is a payment made by NHRS to the retired member's former employer or health insurance administrator toward the cost of health insurance for a qualified retiree, his/her qualified spouse, and any eligible dependents.

**Vesting** Members become vested for NHRS retirement benefits upon the earlier of: (1) completion of 10 years of NHRS Creditable Service; or (2) on or after attainment of the NHRS normal retirement age while in service, regardless of years of Creditable Service.

*Sources: GRS, CRR, NHRS, Pew Charitable Trusts*